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1. Introduction

Padraig Thornton Waste Disposal Limited (PTWDL) operates waste licence (W0206-01) which was issued by the Environmental Protection Agency (EPA) on the 25th July 2005 to operate a Civic Amenity and Materials Recycling Facility. In accordance with the requirements of Condition 11.9 and Schedule D of the waste Licence, an Annual Environmental Report (AER) for the facility must be submitted to the EPA not later than March 31st of each year for the preceding calendar year.

This AER is for the period from the 1st January 2009 to 31st December 2009 and contains details of Quarter 4's reporting for the facility.

The facility is located at:-

Padraig Thornton Waste Disposal Ltd (PTWDL) T/A Thornton Recycling,
Civic Amenity and Materials Recycling Facility,
Dunboyne Industrial Estate,
Dunboyne,
Co. Meath.

The contact details for the facility are as follows:
Telephone: 01 8255666
Fax: 01-8013896
EPA Site Contact: Tommy Rogers/Mercedes Kavanagh

The national grid reference for the facility is 301IE, 2428N.

The address and contact details for the facility operator's headquarters are:

Padraig Thornton Waste Disposal Ltd (PTWDL) T/A Thornton Recycling,
Unit 53B,
Parkwest Business Park,
Dublin 12.

Telephone: 01-6235133
Fax: 01-6235131

2. Description of the Site and Licensed Waste Activities

The facility is located in the Dunboyne Industrial Estate, which is 600m north of Dunboyne village on the R157 road. The site occupies an area of approximately 1.6 hectares, access to the facility is via the Dunboyne Business Park.

The surrounding land is predominately agricultural pastureland, with the remaining land consisting of light industrial processes within the Dunboyne Industrial Estate. The nearest residential area is Lutterell Hall, which is located approximately 200m southwest of the facility. In 2009 the new R157 was constructed North of the facility

The licensed waste handling activities, permitted under the Third Schedule[1] and Fourth Schedule[2] of the waste Management Act 1996 to 2003 for the facility are detailed below:

Third Schedule, Class 11: Blending or mixture prior to submission to any activity referred to in a preceding paragraph of this Schedule.

Third Schedule, Class 12: Repackaging prior to submission to any activity referred to in a preceding paragraph of this schedule.

Third Schedule, Class 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.

Fourth Schedule, Class 2: Recycling or reclamation of organic substances which are not used as solvents (including composting and other biological transformation processes)

Fourth Schedule, Class 3: Recycling or reclamation of metal and metal compounds.

Fourth Schedule, Class 4: Recycling or reclamation of other inorganic materials.

Fourth Schedule, Class 12: Exchange of waste for submission to any activity referred to in a preceding paragraph of this schedule.

Fourth Schedule, Class 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.

3. Waste Management Record

Waste is checked and documented at the weighbridge in accordance with our waste license W0206-01. Waste is then tipped into the processing building where it is inspected and segregated both manually and then mechanically or bulked for further processing at the Killeen Road facility in Dublin, W0044-02. Segregated materials are stored in designated bays where they are bulked up before being reloaded into 40 foot trailers generally for transport to either licensed disposal facilities or to an approved recycling or recovery facility for further processing. Should any non-conforming waste come to the attention of our staff it is either rejected before collection by the driver or segregated and quarantined until a safe and environmental friendly disposal route are arranged by the environmental team. All non conforming wastes are handled in accordance with our Non Conforming Waste Procedure EP 13.

[1] Third Schedule- Waste Disposal Activities
[2] Fourth Schedule- Waste Recovery Activities

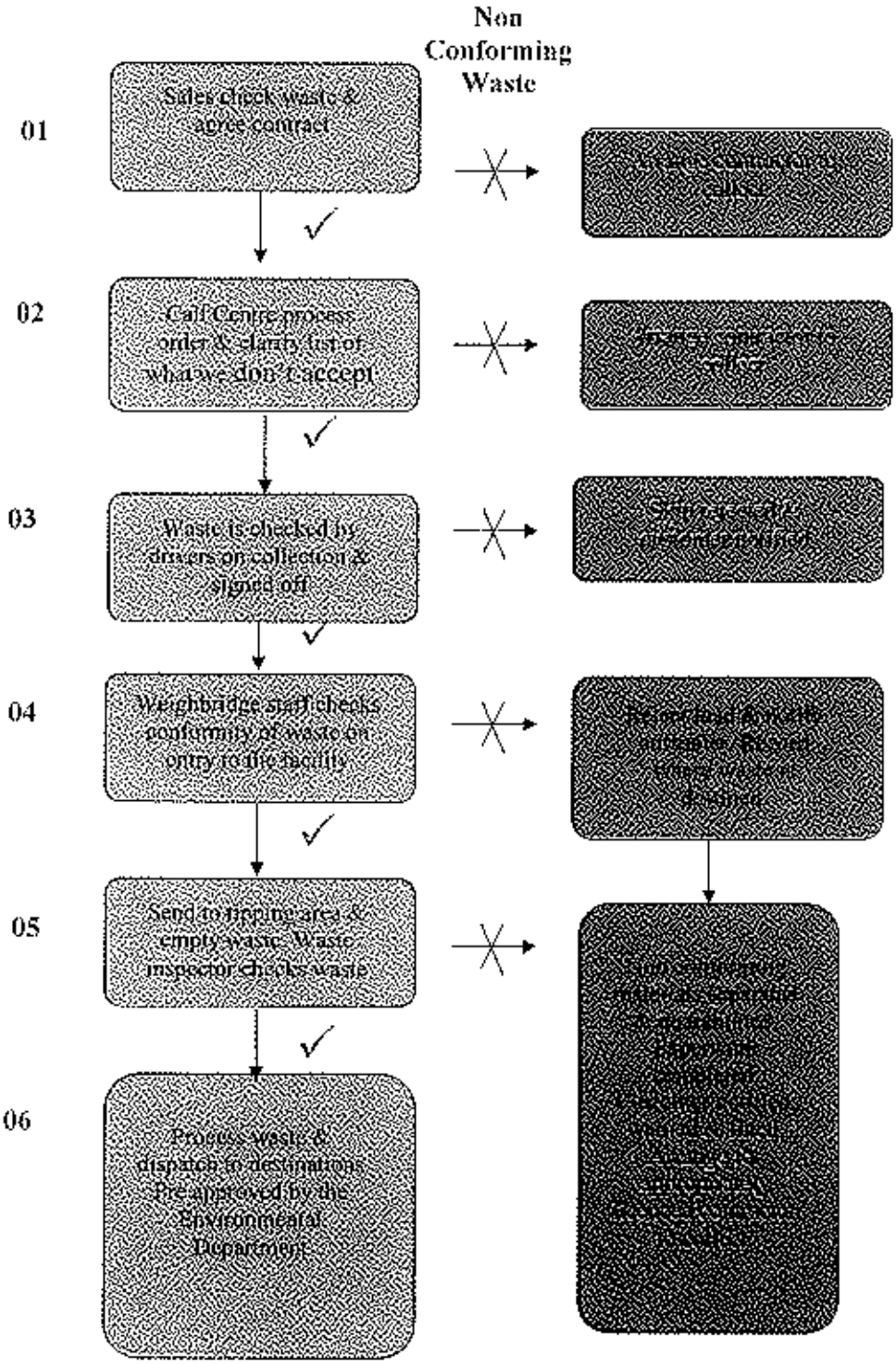
The weighbridges were verified by Percia Molen on the 13th November 2009 and EC Weighbridge Certifications produced. A copy of the certificates is in Appendix 1.
The facility also has a civic amenity site in which recyclates are accepted from members of the public. Weights of the material accepted are calculated from the weights of the bulked loads before they are consigned from the facility and not as they are delivered to the facility.

Thornons Recycling maintained ISO certification for ISO 14001 Environmental, ISO 9001 Quality and OHSAS 18001 Health and Safety at the Dunboyne facility. These procedures are available for inspection at any of the company offices and the most up to date copies on the IMS drive.

3.1 Waste Acceptance

Figure 1 is a simplified diagram explaining our waste acceptance procedures at Thorntons Recycling Dunboyne. The waste acceptance procedure of the facility is detailed in EP 13 and was revised in 2009 to include the new self automated weighbridge facility (Copy enclosed in Appendix 2).

Figure 1: Thorntons Recycling Waste Acceptance Diagram



3.2 Waste Received

A total of 21,946 tonnes of waste was received at the facility between 1st January 2009 and 31st December 2009. A total of 328.26 tonnes of recyclable material was accepted at the civic amenity site during the year. A summary of the waste that was accepted during the year is detailed in Table 1 and also in Appendix 3.

Table 1: Summary of Waste accepted at the site during 2009, by total tonnage and percentage of the total received

EWC	Material Received	Tons	%
20 03 01	MMW	12589.78	57.37
20 03 07	Bulky MMW	950.99	4.33
03 01 05	Wood Waste Manufacturing	21.00	0.10
15 01 03	Wood Packaging	1034.54	4.71
17 02 01	Wood C&D Waste Wood	138.73	0.63
19 12 07	Wood processed or chipped	41.09	0.19
15 01 01	Processed Cardboard	0.48	0.00
20 01 39	Mixed Plastic	1.52	0.01
20 01 99	Mixed Dry Recyclables	15.04	0.07
17 01 07	Clean Construction Rubble	214.90	0.98
17 05 04	Soil and Stone	1554.25	7.08
17 09 04	Mixed C&D Waste	5017.12	22.86
19 12 02	Ferrous Metal Mixed Steel	347.02	1.58
16 01 18	Non - Ferrous Metal	6.66	0.03
20 01 02	Glass Into Site	12.94	0.06
	Total Into Site	21946.06	100%

The majority of the waste accepted at the site consists of Mixed Municipal Waste (MMW) and Mixed Construction and Demolition Waste (mixed C&D).

3.3 Waste Consigned

A total of 22,926 tonnes of waste material was consigned from the facility during the reporting period of 2009. This tonnage includes tonnage which came in through the civic amenity site A complete breakdown of the materials and waste removed is provided in Appendix 3

Table 2: Summary of Waste consigned from the site during 2009

EWC	Materials Consigned	Sum	%
16 01 15	Non Ferrous Metals	1.18	0.01
19 12 02	Ferrous Metal Mixed Steel	515.37	2.25
15 01 04	Metallic Packaging Aluminum	2.30	0.01
17 01 07	Clean Construction Rubble	2129.24	9.29
17 09 04	Mixed C&D Waste	1302.89	5.68
19 12 07	Wood Processed or Chipped	1355.25	5.91
16 06 01*	Batteries	4.42	0.02
19 12 05	Glass Packaging	91.67	0.40
19 12 09	Trommel Fines	4806.62	20.97
20 01 99	Mixed Dry Recyclables	130.26	0.57
20 01 39	Plastic Bottles	3.65	0.02
20 03 01	Mixed Municipal Waste	12493.69	54.49
16 05 05	Gas Cylinders	0.14	0.00
16 01 03	Tyres	8.16	0.04
16 02 14	Mixed WEEE	75.10	0.33
17 08 02	Plasterboard/gypsum	6.46	0.03
SUM		22926.40	100.00

The recycling target for construction and demolition waste set in the waste management policy document "Changing Our Ways", (1998), was at least 50% by 2003 and progressing to at least 85% by 2013. This facility is well on the way to achieving these targets by diverting material from landfill such as stone for recycling, soil for landfill cover, metal for further processing. .

Due to the downturn in the Construction and Demolition trade the facility experienced a decrease in the amount of C & D material suitable for processing. In order to ensure that the facility was operated economically, processing on site was minimized and material was bulked and sent to the Killeen Road for further processing, some 45.11% of material which entered the Dunboyne facility was reprocessed at the Killeen Road in the high specification CID line. This processing line is currently recycling and recovering over 90% of the material and producing Solid Recovered Fuel (SRF). Table 3 summarizes recycling and recovery rates, clearly showing that only 15.68% of the waste which entered the facility was sent to landfill.

Table 3: Recycling and Recovery rates for 2009

Waste Stream (t) 2009	Tonnes	%
Total Waste Out	22926.06	
Total Waste to Landfill	3257.85	15.68
Total Waste Recovered	4806.62	20.97
Total Waste Recycled	4319.55	18.84
Waste to Killeen Road Reprocessing	10242.38	45.11
Total Recycled and Recovered	9126.17	

It is hoped that the recycling and recovery rates will increase again during 2010. We aim to do this by:

- Amalgamating site operations to include other processes such as wood processing
- Working to International Standards ISO 14001 Environmental, ISO 9001 Quality and OHSAS 18001 Health and Safety with continuous development of new operational procedures.
- Continuous training and education of staff at all levels onsite about what materials can be recycled.
- Business Development.
- Integrated waste management services offered that encourages clients to opt for different types of bins, e.g plasterboard segregation with large builders etc.
- Continued education of new and existing clients and their obligations in relation to the law.
- Offering additional services such as waste audits for customers.
- Continue to offer reduced rates to customers who segregate their waste, for example wood and metals etc.
- Continually improve in our service and after sales services.
- Presentations and demonstrations on recycling at our client's premises and schools.

4` Dust and Particulate Matter Monitoring

4.1 Dust Monitoring

In compliance with Condition C.6 of waste licence W0206-01 dust deposition and particulate matter (PM10) monitoring was carried out quarterly at the facility. The monitoring locations are shown in Appendix 4. Dust deposition monitoring was carried out by an independent consultant, Fehily Timoney and Company during 2009.

Dust deposition monitoring was carried out at four locations (D1-D4) using Bergerhoff type gauges placed at a height of at least 1.5 metres above the ground for a continuous period of 30 days. The results of the dust deposition are shown in Table 4.

Table 4: Dust deposition results for each dust monitoring location per quarter during the year 2009

Monitoring Location	Quarter 1	Quarter 2	Quarter 3	Quarter 4	ELV mg/
D1	74	98	166	365*	350
D2	192	197	455	194	350
D3	<10	89	174	180	350
D4	58	28	155	53	350
* Contamination Present in Sample Leaf Litter Not Insects					

The dust deposition results for 2009 show that there was an exceedance in quarter 3 of 2009 which was reported to the Agency as an incident on the 30th October 2009 and a full detailed report forwarded in relation to same. The elevation in dust deposition in quarter 4 was not reported as an incident to the Agency as it was advised by the independent consultants that there was significant contamination of the sample by leaf litter (Quarter 4 Report contained within Appendix 4 of this report)

PTWDL understand the importance of maintaining dust deposition levels below the emission limit value of 350mg/m^2/day. The road sweeper cleans the hard standing of the site weekly during the wet periods and twice weekly during the dry periods of the year to collect any material deposited on the hard standing in the yard. Staff are also encouraged to brush the yard and use spray hoses during dry periods to mitigate against dust. The majority of operations are undertaken indoors where any dust created can be contained and kept from been released into the environment.

4.2 Particulate Matter Monitoring

Particulate matter monitoring was carried out by an independent consultant, Fehily Timoney & Co., at four locations (D1-D4) using PM10 filters for a period of 24 hours at each location. The results of the PM10 monitoring are shown in Table 5 and quarter 4 report is contained within Appendix 4 There was one exceedance of the emission limit value during the year which was reported as an incident to the EPA on the 24th July 2009 and a full detailed report forwarded in relation to same.

Table 5: Particulate Matter monitoring results for each quarter during 2009 at four locations on the site boundary

Monitoring Locations	Quarter 1	Quarter 2	Quarter 3	Quarter 4	ELV (ug/m3)
D1	13.8	19.7	12.9	15.6	50
D2	23.3	15.8	23.2	20.2	50
D3	14.4	61.7	10.2	10.4	50
D4	11.9	14.3	21.2	20.9	50

5 Noise Monitoring

In compliance with Schedule B.4 and C.5 of waste licence W0206-01 noise monitoring was carried out bi-annually at the facility. Noise monitoring was carried out by trained staff of Thornton's Environmental Department. As the facility only operates during the day, only daytime monitoring was carried out. The monitoring locations and report for the second half of 2009 are contained within Appendix 5 of this report.

Day time monitoring was carried out on:

- 16th and 17th February 2009.
- 21st and 22nd December 2009.

Monitoring was carried out at six sampling locations; four locations (NP1-NP4) are to determine the noise levels at the boundary during daytime operations and two locations (NP5 &NP6) are to determine the noise levels at the nearest noise sensitive receptors. The results are tabulated in Table 6 and show the recorded noise levels during the respective noise monitoring periods.

The analysis of the results from the noise monitoring shows that the noise levels at the noise sensitive locations are not adversely impacted upon by the site activities. The noise limits set out in the license W0206-01 was not exceeded at NP5 (Lutterhall Estate). However, although the noise limit was recorded as exceeding the limits at NP6 (Back Road) on both occasions it is shown that the source of the noise is not as a result of site activities. Monitoring location NP6 is located at the gate of a private residence approximately 200m east of the site. The predominant noise source at this location was noted as traffic travelling on the local road. Full noise report on the second half of 2009 is contained within Appendix 5 of this report.

Table 6: Bi-annual noise monitoring results for the period of 2009 at 6 locations

Monitoring Location	Half 1 - 16.02.09 and 17.02.09			Half 2 - 21.12.09 and 22.12.09			ELV
	LAeq (dB)	LA90 (dB)	LAeq(dB)	LAeq (dB)	LA90 (dB)	LAeq(dB)	(dB)
NP1	56	58.9	42.9	54.2	55	54	n/a
NP2	54.7	57.2	44.4	56.6	57	55	n/a
NP3	54.9	51.2	42.7	62.8	63	62	n/a
NP4	55.2	56.4	43.2	64.6	63.2	62	n/a
NP5	45.3	46.9	38	50.6	53	51	55
NP6	65.3	60.2	47.7	54.3	56	54	55

6. Emissions to Surface Water and Foul Water

In compliance with schedule B.3, C.2.3, C.3.1 and C.3.2 monitoring is carried out on the foul and surface water. The monitoring locations for the foul (FW1) and surface water (SW1, SW2, and SW3) are shown in Appendix 6. Quarter 4 results for SW and FW are contained within Appendix 7 of this report

6.1 Surface Water monitoring

The waste license W0206-01 requires that monitoring be carried out at SW3 where the yard runoff is discharged to the local surface water drain after it passes through a silt trap and oil interceptor on site. Additional monitoring points have been sampled upstream and downstream of the discharge point to identify any impact the site is having on the local surface water network.
Monitoring point SW1 is located upstream to the west of the site at the point where the local drain enters the site boundary and monitoring point SW2 is located downstream to the north of the site where the drain leaves the site boundary.

The results of SW1 (Table 7) shows that the results of the monitored parameters are largely consistent throughout the four sampling quarters.

Table 7: Surface water-monitoring results per quarter of 2009 at monitoring location SW1

SW1

Monitoring Parameters	Quarter 1 10.02.09	Quarter 2 [illegible]	Quarter 3 [illegible]	Quarter 4 [illegible]	Units
BOD	2	1.04	1.38	3.31	mg/l
COD	15	11.2	16.4	18.5	mg/l
Suspended Solids	10	6	4.5	13	mg/l
pH	7.72	8.05	7.93	8.25	Ph Unit
Orthophosphate (as P)	0.010	0.026	0.045	0.03	mg/l
Total Ammonia (as N)	0.2	0.567	0.2	0.2	mg/l
Copper	0.002	0.00326	0.00342	0.00374	mg/l
Zinc	0.009	0.00172	0.00131	0.00259	mg/l

The results of SW2 (Table 8), shows that the results of the monitored parameters are largely consistent throughout the four sampling quarters of 2009.

Table 8: Surface water monitoring results per quarter of 2009 at monitoring location SW2

SW2

Monitoring Parameters	Quarter 1 [illegible]	Quarter 2 [illegible]	Quarter 3 [illegible]	Quarter 4 [illegible]	Units
BOD	2	2.5	1.58	1.89	mg/l
COD	15	25.2	23	18.4	mg/l
Suspended Solids	10	6	19	29	mg/l
pH	7.74	8.19	7.8	7.93	Ph Unit
Orthophosphate (as P)	0.016	0.026	0.045	0.03	mg/l
Total Ammonia (as N)	0.2	0.67	0.203	0.2	mg/l
Copper	0.001	0.00368	0.00399	0.00308	mg/l
Zinc	0.0011	0.0016	0.00173	0.00234	mg/l

Monitoring point SW3 is the discharge point from the facility to the local drain. Due to SW3 being the discharge point a more detailed analysis of the water is carried out. The results for these are tabulated in Table 9.

Table 9: Surface water monitoring results per quarter of 2009 at monitoring location SW3

SW3

Parameter (Units)	Quarter 1 (Jan - Mar)	Quarter 2 (Apr - Jun)	Quarter 3 (Jul - Sep)	Quarter 4 (Oct - Dec)
BOD	2	1.82	1.8	2.21
COD	15	18	16.5	13.1
Suspended Solids	10	6	6.5	7
pH	7.75	8.03	7.68	8.15
Orthophosphate (as P)	0.016	0.026	0.045	0.03
Nitrates (as NO3)	8.7	11	3.12	1.88
Total Ammonia (as N)	0.2	0.601	0.2	0.2
Copper	0.002	0.00463	0.0039	0.00225
Zinc	0.0011	0.00162	0.00173	0.00261
Sulphates (as SO4)	38	122	193	46.6
Detergents	0.2	0.08	0.1	<0.05
Phenols	0.01	0.002	<0.0150	<0.015
Mineral Oils	<10	<10	0.00212	0.000676
Chloride	22	23.6	9.8	20.7
Colour	3	4.9	6.3	6.3

Overall there is no significant difference in the results between the monitoring locations SW1, SW2 and SW3 and thus it can be concluded that the site is not having an adverse effect on the water quality of the stream.

Weekly surface water monitoring is carried out at SW3 by Eclipse Scientific Group, quarterly results have been forwarded to the Agency. (Table 10 displays 2009 complete results to include Quarter 4's weekly monitoring). The results show that the majority of the sample results are consistent with each other with some exceptions where parameters measured were elevated. The cause for these random elevated results was provided to the EPA in letter reference 206-01/07/DD/20 on the 6th August 2007. The explanation is that the surface water sample was taken during or after the discharge of the water from the site. When the surface water is discharged into the stream it alters the flow of the stream and churns up the sediment on the bottom of the stream, thus increasing the suspended solids in the stream. The COD is correlated with the suspended solids in the water. The increase in the suspended soils increases the organic matter in the water column and inflates the COD levels in the sample. When the discharge of the surface water ceases the suspended solids settle out of the water column onto the stream bed, decreasing the COD results as the organic matter also settles out of the water column.

In 2009 the sample pipe was cut to allow samples at SW3 to be taken from the discharge outlet and not from the stream itself. This will eliminate the effect of turbulent sediment from the stream bed when samples are being taken.

Table 10: Weekly Surface Water monitoring from during the year 2009

Q1			
Date	COD mg/l	pH	Suspended Solids mg/l
07.01.09	5	7.5	10
19.01.09	20	7.3	10
23.01.09	2	7.3	10
27.01.09	7	7.4	10
26.01.09	7	7.4	10
06.02.09	10	7.2	10
13.02.09	5	7.5	10
20.02.09	23	7.5	81
26.02.09	11	7.5	10
06.03.09	13	7.4	30
13.03.09	11	7.6	10
20.03.09	8	7.4	16
Q2			
Date	COD mg/l	pH	Suspended Solids mg/l
02.04.09	6	7.5	<10
10.04.09	6	7.5	<10
17.04.09	8	7.3	<10
23.04.09	26	7.5	<10
30.04.09	9	7.4	<10
07.05.09	6	7.5	<10
14.05.09	26	7.2	12
21.05.09	19	7.1	14
29.05.09	<10	7.3	<10
05.06.09	<10	7.3	38
16.06.09	8	7.4	<10
19.06.09	13	7.2	<10
Q3			
Date	COD mg/l	pH	Suspended Solids mg/l
03.07.09	46	7.7	99
10.07.09	<10	7.2	<10
17.07.09	<10	7.3	<20
23.07.09	10	7.3	<20
31.07.09	10	7.3	<20
14.08.09	25	7.4	13
21.08.09	14	8	36
04.09.09	20	7.2	<20
10.09.09	<10	7.3	<10
18.09.09	<10	7.5	14
24.09.09	<10	7.5	<10
Q4			
Date	COD mg/l	pH	Suspended Solids mg/l

01.10.09	<10	7.4	<10
15.10.09	<5	7.4	<10
22.10.09	22	7.6	24
27.10.09	15	7.5	26
05.11.09	<5	7.4	<10
13.11.09	21	7.2	11
20.11.09	15	7.3	12
26.11.09	6	7.4	<10
03.12.09	6	7.4	<10
10.12.09	<10	7.4	<10
22.12.09	<10	7.5	<10
30.12.09	<5	7.2	<10

6.2 Foul Water Monitoring

In accordance with the waste license (W0206-01) under schedule B and C all emissions to sewer must be monitored. Emissions to sewer must be monitored on a quarterly basis. The discharge to the foul water for each quarter of 2009 was below the emission limit values set down by the waste license. (Table 11 details foul water monitoring results to include quarter 4 of 2009)

The heavy metals in the foul water were also measured four times during the reporting period, which is in compliance with the bi-annual monitoring requirements as per condition C.3.2 of the waste license (Table 12).

Table 11: Foul water monitoring results per quarter of 2009

Monitoring Parameters	Quarter 1 10.02.09	Quarter 2 23.04.09	Quarter 3 30.07.09	Quarter 4 01.12.09	ELV mg/l
BOD	16	32.6	18.6	8.97	**1000**
COD	35	233	41	57.5	**3000**
Suspended Solids	10	79.5	19.5	9	**1000**
pH	7.87	8.31	8.30	8.03	**6 - 10.**
Phosphorus (as P)	1.312	5.88	-	0.153	**20**
Nitrates (as NO_3)	13.1	4.5	<0.300	0.069	**100**
Total Ammonia (as N)	1.3	2.04	2.57	0.627	**10**
Colour	7	31.1	17.8	7.2	**-**
Mineral Oils	10	0.229	.0.334	0.362	**20**
Sulphates (as SO_4)	262	198	233	211	**1000**
Detergents	0.2	0.16	<0.1	0.0947	**20**
Phenols	0.01	0.05	<0.0150	-	**0.1**
Chloride	27	31.3	24.4	21.7	**250**
Heavy Metals	Below	Below	Below	Below	**-**
Organic Solvents	None	None	None	None	**no visable film**

Table 12: Heavy metal concentration in the foul water for four quarters during 2009

Foul Water Heavy Metal Results
2009

Monitoring Parameters	Quarter 1 10.12.09	Quarter 2 25.09.09	Quarter 3 20.07.09	Quarter 4 10.12.09
Dissolved Zinc Low Level	12	107	1970	98.5
Dissolved Mercury Low Level	0.05	0.01	<0.109	<0.0100
Dissolved Arsenic Low Level	1	1.18	1.17	29.3
Dissolved Boron Low Level	11	35.4	<18.0	
Dissolved Cadmium Low Level	0.4	1.06	<0.220	<0.220
Dissolved Chromium Low Level	4	1.59	4.66	6.19
Dissolved Copper Low Level	20	35.1	24.1	4.78
Dissolved Lead Low Level	1	3.18	3.38	2.26
Dissolved Nickel Low Level	3	4.61	5.05	3.68
Dissolved Selenium Low Level	6	8.14	8.24	4.78
Units measured in ug/l				

7. Resource Consumption Summary

This section details the resources used by the facility during the period of 1st January 2009 to the 31st December 2009. Resources that were monitored include fuels, water and ESB.

7.1 Water

In 2009, 4,528m^3 of foul water was discharged from the site at FW1, as measured from the continuous recording meter located at the discharge point. 8,728m^3 was discharged to the surface water at SW3 as measured from the continuous recording meter located at the discharge point. Water that is discharged via the foul water consists of water used in the toilets, showers, offices, truck wash, wheel wash and washing down the MRF floors. Water that is discharged into the surface water consists of water from the run off from the roofs of the buildings and from the hard standing in the yard. Surface water runoff is not linked with the site activities and is linked with the quantity of rainfall throughout the year, only rainwater that falls onto the hard standing and the roofs of the buildings is discharged at this point.

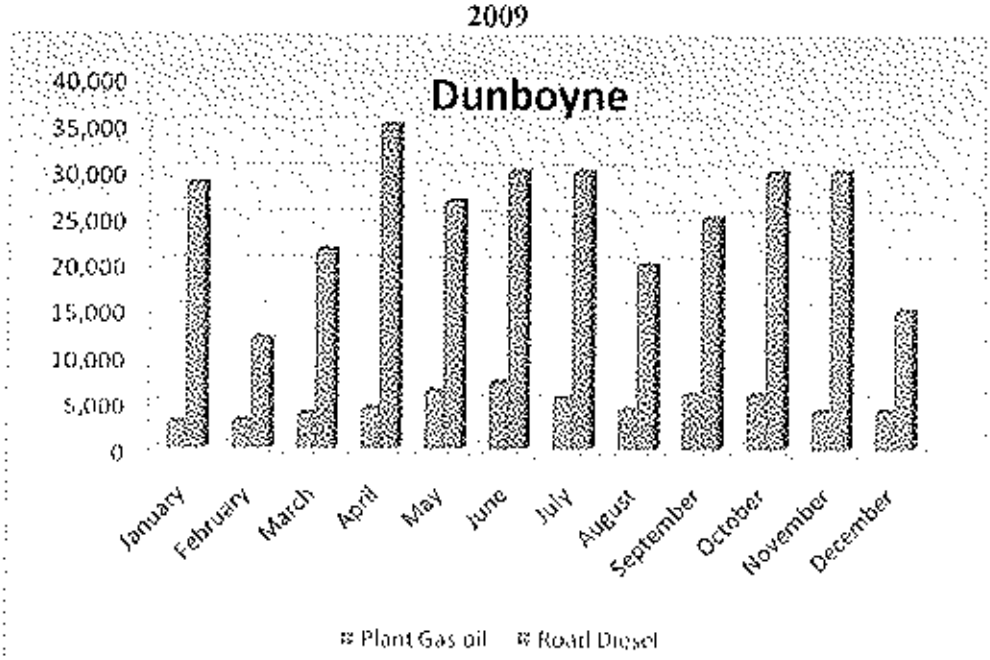
Table 13: Foul and Surface Water discharges from 2005-2009

	2005	2006	2007	2008	2009
Foul	3461	3080	3144	4691	4528
Surface	5665	6459	6636	8479	8726

7.2 Diesel

The main types of fuel used at the facility include road diesel, plant diesel (Gas Oil) for the machinery working on site and heating oil (Kerosene) for the offices. Figure 2 illustrates Plant Gas Oil and Road Diesel consumed at the facility in 2009

Figure 2 Monthly consumption of road diesel and plant gas oil at Dunboyne during 2009



Road diesel is delivered regularly to the facility, however some fleet vehicles also use fuel cards to buy diesel. The fuel purchased by fuel cards is not reported here. In 2009 a total of 304,116 litres was delivered to the site for use by the fleet. This is a decrease from the 435,289 liters used in 2008 and is due to less lorries using the facility as a base for fuelling.

A total of 57,426 litres of Gas oil was used by the generator and plant machinery on site. This is a decrease from 84,261 liters used in 2008. This decrease can be attributed to less working hours due to lower tonnages.

7.3ESB

Thorntons Recycling is currently implementing an energy management programme on all its sites. As part of this new programme, which will reduce energy consumption on all site, the company changed over electricity supplier. Due to the changeover it was not possible to determine the accurate consumption of electricity for 2009 however a best estimate can be given as the annual consumption of day time kWh was 77,976 kWh and the night time usage was 26,412 kWh.

Table 14 compares the annual usage of 2007, 2008 and 2009. The trend shows that there was a decrease in the energy consumed on site over the last three years.

Table 14: Comparison of ESB energy usage between 2007, 2008 and 2009

Year	Day kWh	Night kWh	kVarh
2009	77976	26412	36900
2008	127728	31440	60347.5
2007*	137680	32640	72240

8 Complaints Summary

There were no environmental complaints received at the facility during 2009.

Thorntons Recycling takes all complaints seriously and is committed to resolving any complaints to the facility. If we receive a complaint we adhere to the company complaints procedure as per our ISO certified integrated management system.

9 Schedule of Environmental Objectives and Targets and Environmental Management Programme

Thorntons Recycling operates an Integrated Management System (IMS) which has been certified to ISO 14001 Environmental, OHSAS 18001 Health and Safety, ISO 9001 Quality. The complete content of the IMS is too large to contain within the body of this report, whoever the EPA can access this for inspection on a specially designated drive (X Drive) at any of the company's site offices.

The schedule of Environmental Objectives and Targets and the Environmental Management Programme is contained in Appendix 8

10 Tank and Pipeline Inspection Report

10.1 Tank Bunding

Thorntons Recycling commissioned Fehily Timmony and Company in 2008 to carry out testing on the bunds at the facility. All three bunds were tested on the 4th December 2008. A copy of the bund certificates were submitted in last year's AER. All three bunds passed the integrity test. These bunds are scheduled for their next test in 2011, as per condition 6.7 of the license.

10.2 Pipeline Testing

The integrity and water tightness of all underground pipes and tanks and their resistance to penetration will be carried out once every 3 years as per Condition 6.7 of the waste license. Super drain limited completed a full CCTV drain survey of the facility on the 29th March 2008. A copy of this report was forwarded to the EPA previously.

11 Reported Incidents Summary

Table 15 summaries the incidents, which occurred in 2009. These were reported to the EPA by fax and followed up with a written report as per the EPA guidelines.

Table 15: Incidents 2009

Incident reported to the Agency	Detail
24.07.09	Exceedance in PM10 limit at D3
30.10.09	Exceedance of Dust Deposition at D2 monitoring location

12 Odour Management Programme

A copy of the odour management programme as submitted to the Agency on the 25th October 2005, our reference 206-01/05/TR/03.

13 Energy Efficiency Audit Report Summary

A resource use and energy efficiency audit was carried out by White Young and Green in July 2006. The full audit report was forwarded to the EPA in previous AER's.

Energy and resource usage are monitored (electricity, Kerosene, water) and it is intended that consumption values will be maintained as low as possible whilst not impacting on the efficiency of operations. Thorntons Recycling is currently working with Sustainable Energy Ireland and have developed a project team internally to address energy issues on site at all facilities owned and operated by the company.

14 Pest Control Programme Report

Pest control is carried out at 8 scheduled visits per year. Complete Pest Control are contracted to carry out pest control at the facility. Overall pest activity is very low, this was maintained by keeping storage stocks of material to a minimum and emptying storage bays completely as often as possible. A copy of the Pest Control programme can be viewed on site.

15 Report on Progress made and Proposals being developed to Minimise Water Demand and the Volume of Trade Effluent Discharge

15.1 Water Requirements

Water is required on the site for the following activities;

- Toilet facilities
- Canteen facilities
- Washing down the MRF
- Truck wash

- Wheel wash
- Fire Suppression

Water requirements have decreased in 2009 due to the decrease in tonnage handled and downsizing of staff at the facility due to the economic downturn.

With the exception of the fire suppression all of the above facilities discharge their effluents into the foul drainage system.

There was no fire at the site during 2009, thus no fire water was used. In the event of a fire the water used to suppress it will be maintained on site for testing prior to discharge in the appropriate manner in consultation with the Agency and the appropriate local authorities. As discussed previously Thorntons Recycling have their own tankering division who can be called upon in an emergency.

15.2 Water supply and Storage

Water is supplied to the site via Meath County Council water mains network. A $80m^3$ water storage tank is located adjacent to the MRF. Water from this tank is used to wash down the MRF floor when required and for fire suppression if required. This tank is backed up with an auxiliary pump to increase the pressure in the event of requiring the stored water for fire suppression.

15.3 Foul water discharge

The license permits a maximum of $30m^3$/day to be discharge into the foul water. This equated to a total of $9360m^3$ per year based on a six day working week. The meter reading on the foul water discharge shows that $4,528m^3$ was actually discharged during 2009.

15.4 Progress on Minimisation of Water Usage

The water usage is quite low on the site due. The main demands on water are related to floor wash down and the washing of trucks and bins. These are necessary procedures to minimize environmental emissions such as dust, odour and litter.

Thorntons Recycling road sweeper cleans the yard and the hard standing weekly to avoid the excessive use of water.

16 Reports on Financial Provision made under this License, Site Management structure of the facility and a Programme for Public Information

16.1 Financial Provision

Padraig Thornton Waste Disposal Ltd, is insured by FBD Brokers (Appendix 9). PTWDL is insured for Employers Liability, Public/Products Liability, Motor Insurance and also has a pollution insurance policy.

A report in relation to the financial provision is required under condition 12.3 and was prepared in July 2006 and forward to the EPA previously. This report details the financial status of the company, financial commitments to cover environmental issues, decommissioning, aftercare management, environmental pollution and contingency arrangements in place at the facility. Detailed risk assessments were carried out and in conclusion the assessment states that no scenarios were identified which would exceed the insurance cover where the potential remediation costs would threaten the financial solvency of the company. Thornotns Recycling is a financially secure company, which is evident from the director's report and consolidated financial statements for the year ending 31st December 2008.

16.2 Site Management Structure

Carmel Thornton
Director

Shane Thornton
Director

Anna Marie Thornton
Director

Paul Thornton
Director

Gary Brady
Managing Director

Ciaran Dowling
Operations Facility Manager

Tommy Rogers
Environmental Facility Manager

Tommy Rogers/Mercedes Kavanagh can be contacted regarding any queries that the Environmental Protection Agency may have. Tommy's contact details are as follows: 086-3811122 and tommyr@thorntons-recycling.ie and Mercedes' are Mobile 086-8241034 and mercedes@thorntons-recycling.ie

16.3 Program of Public Information

Thorntons Recycling operates an open door policy. All information relating to activities carried out at Thorntons Civic Amenity and Materials Recycling Facility is maintained in site. Public information is accessible at the site by appointment with the Environmental Department or at the Office of Environmental Enforcement.
As discussed previously Thorntons Recycling Dunboyne has certification in ISO14001, ISO9001 and OHSAS18001 and has a detailed communication procedure which is available from the public on request.

17 Environmental Liabilities

Thornton's Recycling is committed to achieving the highest possible level of environmental performance and to the prevention of environmental damage. All facilities operated by the company are certified to international standards for Environmental, Health and Safety and Quality. All sites are subject to surveillance audits twice a year which are carried out by Certification Europe. Environmental liabilities and aspects are elements of our integrated management system which are regularly maintained and update and are audited in detail during surveillance audits and internal audits carried out by trained auditors within the company.

List of Appendices

Appendix 1 – Weighbridge Certificates

Appendix 2 – Waste Acceptance Procedure Dunboyne EP 13

Appendix 3 – Waste Received and Consigned 2009

Appendix 4 – Quarter 4 Dust Deposition and PM10 Report for 2009 and monitoring locations

Appendix 5 – Bi-annual noise monitoring report 2009 and monitoring locations

Appendix 6 - Surface and Foul water monitoring locations

Appendix 7 - Surface Water and Foul Water Monitoring Results Quarter 4 2009

Appendix 8 - Schedule of Environmental Objectives and targets and Environmental Management programme for 2010, progress on 2009

Appendix 9 - Insurance Details

Appendix 1

13 Ashbourne Business Park,
Ashbourne Industrial Estate,
Ashbourne, Co. Meath.
Ph: +353 1 835 3084

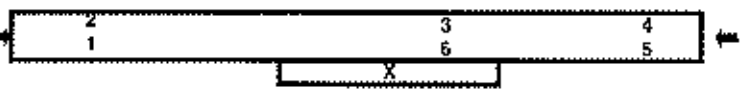
EC WEIGHBRIDGE VERIFICATION CERTIFICATE NO : SO 5692-C2

CUSTOMER:	**Thorntons Recycling**	**APPROVAL CERTIFICATE NO:**	FC-01-A-005
SITE ADDRESS:	Dunboyne	**INDICATOR TYPE:**	I300 (X222)
	Co. Meath	**INDICATOR TEST CERT. NO:**	TC LNE No 03.03
		INDICATOR SERIAL NO:	027742651
SERVICE REPORT NO:	9700	**MAXIMUM CAPACITY (kg):**	50000
MANUFACTURER:	Precia Molen	**DIVISION (e) (kg):**	20
WEIGHBRIDGE TYPE:	Overground	**LOADCELL TEST CERT.:**	R60/2000-DE-03.02
PLATFORM SIZE:	15 X3	**PRINTER SERIAL NO:**	
WEIGHBRIDGE LOCATION:	Exit	**TARE FACILITY:**	Disabled

Accuracy of Zero, Linearity/Hysteresis, Discrimination & Comparison Tests = *

Approximate Test Interval (e)	MPE (e)	Actual Load (kg)	Indicator Up	Display Error (e)	True Error (e)	Indicator Down	Display Error (e)	True Error (e)	Discrimination	Comparison
Zero	0.25	0	0	0.0		0	0.0			
2	0.25	40	40	0.0		40	0.0			
50	0.50	1040	1040	0.0	0.00	1040	0.0	0.00	Yes	Yes
500	0.50	10040	10042	0.1	0.10	10040	0.0	0.00		
1000	1.00	20040	20044	0.2	0.20	20042	0.1	0.10		
SL		20040	20044							
1250	1.00	25040	25042	0.1	0.10	25042	0.1	0.10	Yes	Yes
2000	1.00	40040	40042	0.1	0.10	40044	0.2	0.20		
SL		40040	40042							
2250	1.50	45040	45044	0.2	0.20	45044	0.2	0.20	Yes	Yes
		PASSED	Yes			FAILED	No			

SL - Substitute Load



X = INDICATOR

COMPARISON TEST

Printer	N/A		
Remote Display	N/A		
PC	Yes		
Other	N/A		
Passed	Yes	FAILED	No

ECCENTRIC LOAD TEST - MPE (e): 0.5

Position	1	2	3	4	5	6	7	8	9	10	11	12
Test Load	10040	10040	10040	10040	10040	10040						
Indicator	10042	10042	10040	10044	10044	10040						
Error	0.1	0.1	0.0	0.2	0.2	0.0						
	PASSED	Yes				FAILED	No					

REPEATABILITY TEST
50% - MPE 1.0e
90% - MPE 1.5e

	Indication	Indication	Indication
50%	25042	25044	25042
90%	45044	45042	45044
PASSED	Yes	FAILED	No

ROLLING LOAD TEST
0.8 of Max Capacity - MPE 1.0e

	END	MIDDLE	END
	Indication	Indication	Indication
→	45042	45044	45044
←	45042	45044	45042
PASSED	Yes	FAILED	No

ENVIRONMENTAL CONDITIONS :	Wet	**AUTHORISED ENGINEER :**	Milly Perry
TEST WEIGHTS USED :	Precia Molen Ireland Limited	**CERTIFICATE NO :**	T206376
VERIFICATION DATE :	06 November 2009	**NEXT CALIBRATION DATE (LEVEL - 2) :**	06 November 2010

SIGNATURE : D. Comm... **DATE :** 13 November 2009

The EC Weighbridge Verification Certificate complies with the UK Weighing Federation Code of Practice for Non Automatic Weighing Instruments and is carried out in conjunction with the Council Directive 90/384/EEC conforming to EN 45501 Clause 8.2 for Indicators with a higher resolution test section

Trading Standards Service

Department for Enterprise, Trade and Investment

Precia Molen Ireland Ltd
Ashbourne Business Park
Ashbourne
Co Meath

176 Newtownbreda Road
Belfast BT8 6QS
Tel: 028 9025 3918
Textphone: 028 9025 3988
Fax: 028 9025 3953
Email: eric.giboney@delni.gov.uk
Our Ref: T 206376
13 March 2009

CERTIFICATE OF CALIBRATION

Issued by the Trading Standards Service of the Department of Enterprise, Trade and Investment

Certificate Number:	T 206376
Date of Calibration:	13 March 2009
Identification:	PM01 ~ PM28 less PM3, PM5, PM13, PM14 and PM18
Description:	Set of 21 block weights each of nominal value 1000kg and 2 block weights each of nominal value 250kg.
Calibration Method:	The weights were tested by comparison with weights derived from the Department's Local Standard Weight Set Number 2294 which has been certified by UKAS Accredited Laboratory number 0335 (Certificate number 01322 refers)
Result:	The "measured value" represents the determined conventional mass. For a weight taken at 20°C, the conventional mass is the mass of a reference weight of a density of 8000 kg/m³ which it balances in air of density 1.2 kg/m³.
Uncertainty:	The uncertainty of measurement quoted is 1/5 of the OIML R47 tolerance for the weight in question. The uncertainty of measurement quoted is based on a standard uncertainty multiplied by a coverage factor k=2, providing a level of confidence of approximately 95%.

Eric Giboney
Quality Manager

TABLE OF RESULTS – T 206376

ID	NOMINAL VALUE (kg)	MEASURED VALUE (kg)	ESTIMATED UNCERTAINTY OF MEASUREMENT (±g)
PM-1	1 000	1 000.025	20
PM-2	1 000	1 000.025	20
PM-4	1 000	1 000.020	20
PM-6	1 000	1 000.025	20
PM-7	1 000	1 000.026	20
PM-8	1 000	1 000.039	20
PM-9	1 000	1 000.028	20
PM-10	1 000	1 000.020	20
PM-11	1 000	1 000.039	20
PM-12	1 000	1 000.038	20
PM-15	1 000	1 000.031	20
PM-16	1 000	1 000.042	20
PM-17	1 000	1 000.024	20
PM-19	1 000	1 000.039	20
PM-20	1 000	1 000.022	20
PM-21	1 000	1 000.026	20
PM-22	1 000	1 000.033	20
PM-23	1 000	1 000.038	20
PM-24	1 000	1 000.036	20
PM-25	1 000	1 000.021	20
PM-26	1 000	1 000.025	20
PM-27	250	250.005	10
PM-28	250	250.013	10

Appendix 2

Relevant to:-	Killeen Road	Kilmainham Wood	Dunboyne	PDM	ELV	HQ	Tankering
			√				

Purpose and Scope

The purpose of this procedure is to detail the waste acceptance procedure for Thorntons Recycling Dunboyne Civic Amenity and Materials Recycling Facility and also the procedure to be followed in the event of the accidental discovery of unacceptable wastes at the facility.

Unacceptable Waste – a waste type that is not permitted to be handled at the facility and is listed in the "Materials we DON'T Accept"

Material We DO accept (MRF only)	Material we DON'T accept (MRF and C.A)
Construction waste	Animal remains or carcasses
Demolition waste	Asbestos
Timber	Chemical Waste
Topsoil	Contaminated soil & Stone
Brickwork	End of Life Vehicles
Concrete	Hazardous hospital waste
Mixed Metals	(Including sharps containers etc)
Clay and natural stone	Liquid Waste
Dry non-hazardous commercial and industrial waste	Materials contaminated with oil, e.g oil filters or rags
Mixed Municipal Waste	Oil/Water mixtures
	Paints
(Civic amenity ONLY)	Tyres
Cardboard,	Pharmaceutical waste
Paper	Photographic waste
Plastic Packaging	Pressurised vessels, e.g fire
Aluminium cans	extinguishers
Metal cans	Road sweepings
Tetra pak	Sludge
Clothes	Food Waste
Glass Bottles	Saw Dust
Metal	Any hazardous material
Batteries	Green waste
Electrical Goods	
Light bulbs	

Responsibility

The sales Team are responsible for highlighting non-acceptable wastes types to customers. This includes the inspections of the waste prior to collection.

Drivers are responsible for checking all loads for unacceptable wastes prior to collecting the load.

The Operations manager on site is responsible for identifying and highlighting non conforming waste and checking all loads of waste brought into the facility. The Dunboyne weighbridge is self automated therefore a waste check by a weighbridge operator is not carried out as with other sites owned by Thorntons Recycling

The Operations manager is responsible for inspecting, assisting in documenting and informing the Environmental manager and the Dunboyne transport department of any Non- Conforming waste which enters the facility.

The Environmental Manager is responsible for organising the safe removal of any non-conforming waste. The Environmental manager is responsible for ensure tractability of non-conforming waste and informing the sales team.

Associated Documents
EP04-F01A, Non- Conforming Waste form

Procedure
The following process must be followed when handling all wastes;

1. The Sales Department provide all our account customers with a list of what we can and cannot accept at the facility. If in doubt about any waste type they contact the Environmental Department

2. The Call Centre processes the order and selects the waste description with the appropriate EWC Code and enters onto the WIMS. If in doubt about any code or a waste type contact the Environmental Department

3. Drivers check the contents of the skip, bin or container on collection and report to the transport department if there is non-conforming waste. Transport in turn liaise with the Environmental Dept and will advise you on how to proceed (If necessary Thorntons can arrange for an alternative collector)

Relevant to:-	Killeen Road	Kilmainham Wood	Dunboyne	PDM	ELV	HQ	Tankering
			√				

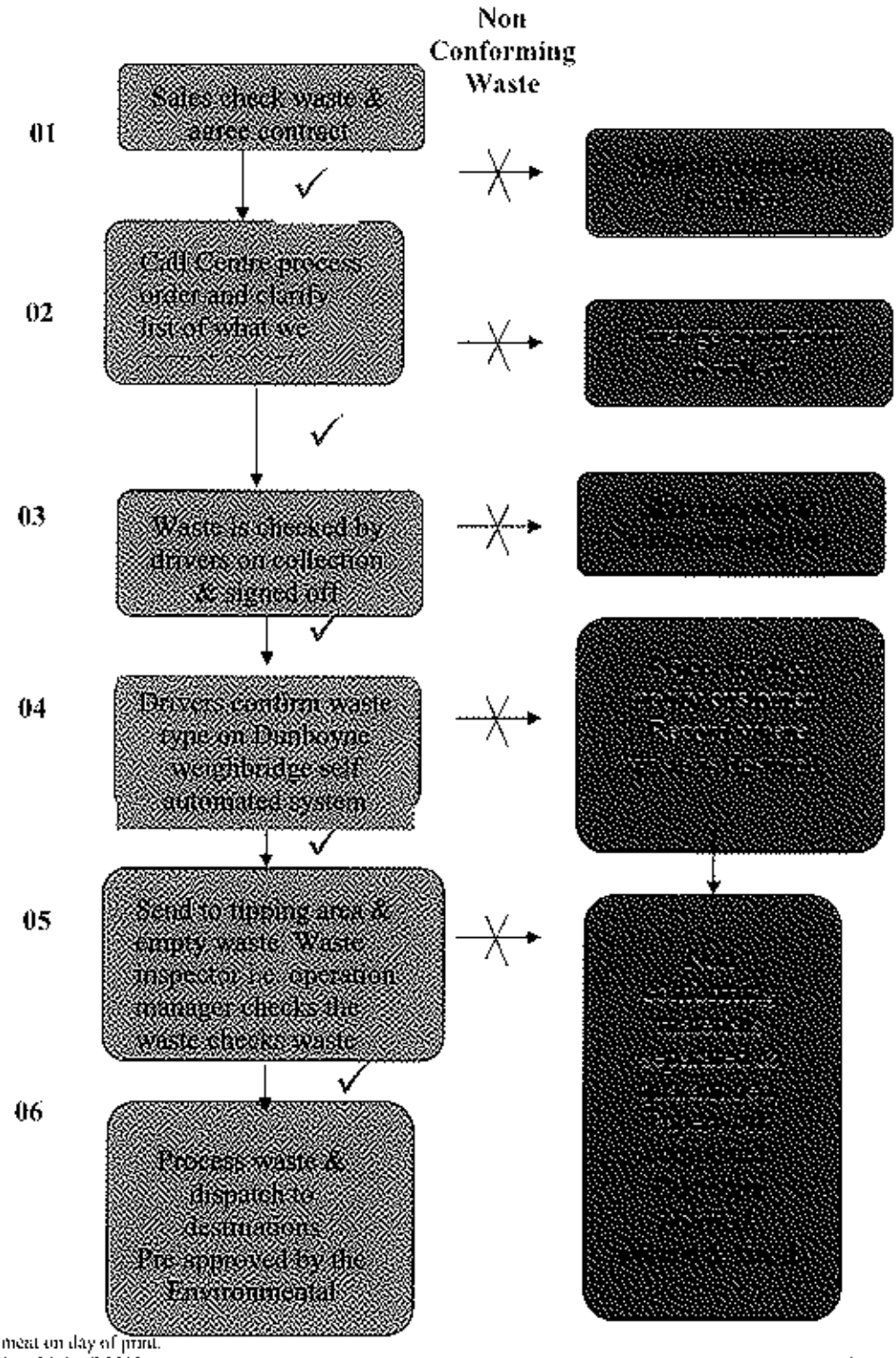
4. As the weighbridge at Dunboyne is self automated, drivers must confirm waste type on entrance to the facility. Should the driver need to change the waste type he can amend the waste type on the self automated bridge which in turn will update WIMS. The system has been set up to only allow the driver to weigh in acceptable wastes on sites.

5. When non confirming waste is tipped the operations manager must complete the necessary non-conforming waste form and attach photos if required. He must move waste to the quarantine area if required. He must pass the non-conforming form is form to the environmental manager.

6. The environmental manager will contact the sales rep for the account. The appropriate sales rep is to be contacted so that they can in turn advise the customer of a fine, recharging, rejection of waste etc. Should the waste type description need to be changed on WIMS the weighbridge dept are informed and the sales rep who in turn advises the customer of this change and necessary changes in charges of applicable.

7. Paperwork is filed in the Environmental Department at Dunboyne

Relevant to:-	Killeen Road	Kilmainham Wood	Dunboyne	PDM	ELV	HQ	Tankering
			√				



Appendix 3

Dunboyne Waste Statistics 2009

20 03 01	MMW	849.18	723.31	924.69	894.75	1070.95	1215.18	1041.03	916.61	1448.22	1112.30	1176.14	1215.39	12569.76	57.37
20 03 07	Bulky MMW	87.18	76.04	91.51	99.21	94.99	85.36	89.61	93.36	74.03	63.03	62.52	33.25	950.99	4.33
03 01 05	Wood Waste Manufacturing	2.04						1.66	2.64	1.86	3.74	5.44	3.62	21.00	0.10
15 01 03	Wood Packaging	112.54	75.63	99.90	69.54	108.92	80.20	87.37	84.18	104.70	63.24	76.00	72.32	1034.54	4.71
17 02 01	Wood C&D Waste Wood	20.57	19.32	19.16	12.97	12.85	5.92	3.04	19.68	5.04	5.37	2.34	10.76	136.73	0.63
19 12 07	Wood processed or chipped	2.66	1.98	1.45	3.32	1.26	3.92	2.10		7.34	1.76	9.54	5.74	41.09	0.19
15 01 01	Processed Cardboard									0.48				0.48	0.00
20 01 39	Mixed Plastic									1.52				1.52	0.01
20 01 99	Mixed Dry Recyclables		1.00	0.84			1.65	1.50		3.20	3.70		3.14	15.04	0.07
17 01 07	Clean Construction Rubble						40.18	174.72						214.90	0.98
17 05 04	Soil and Stone	71.50	7.24	77.39	245.23	213.23	163.28	272.75	357.58	96.78	16.16	23.68	9.48	1554.25	7.09
17 09 04	Mixed C&D Waste	364.59	260.20	274.29	508.83	712.02	606.47	543.04	457.90	260.32	290.89	300.60	349.97	5017.12	22.86
19 12 02	Ferrous Metal Mixed Steel	27.98	22.54	51.61	19.88	53.06	37.37	20.52	21.13	19.66	40.83	19.74	12.60	347.02	1.58
16 01 18	Non - Ferrous Metal				1.40					5.26				6.66	0.03
20 01 02	Glass Into Site						8.05	4.86						12.94	0.06
	Total Into Site	**1538.34**	**1187.36**	**1540.84**	**1853.16**	**2267.31**	**2337.61**	**2242.80**	**1955.08**	**2029.28**	**1602.02**	**1675.98**	**1716.28**	**21946.06**	**100.00**
15 01 02	Mixed Plastic Bottles C.A		0.54	3.45	0.12	0.40	0.48	0.71		0.70		0.30	0.94	4.67	1.42
15 01 04	Aluminium C.A		0.94				0.92					0.44		2.30	0.70
15 01 05	Tetra- Pak C.A		0.36	0.22	0.24	0.34	0.42	0.46	0.36	0.14	0.28	0.26	0.38	3.46	1.05
19 12 01	Cardboard C.A		3.68	3.22	3.61	19.50	3.96	4.70	4.00	3.34	4.38	3.30	4.32	58.13	17.71
19 12 04	Mixed Plastic Film C.A		1.56	2.24	1.36	1.24	1.86	2.20	1.40	1.00	1.48	1.78	2.44	18.58	5.65
20 01 01	Mixed paper C.A		3.40	3.76	3.76	3.74	5.54	6.22	4.78	3.82	4.76	3.40	4.92	48.10	14.65
20 01 40	Metallic packaging Steel C.A		0.36	0.38	0.38									0.92	0.28
20 01 39	Plastic Bottles				0.12	0.40	0.48	0.71	0.00	0.70	0.00	0.30	0.94	3.65	1.11
20 01 10	Clothes	1.39	1.26	1.03	0.99	0.74	1.05	1.50	3.92	1.37	1.44	1.28	1.37	17.26	5.26
16 06 01*	Batteries	0.64	0.96	0.00	0.65	0.34	0.00	0.32	0.86	0.00	0.00	0.54	0.00	4.42	
19 12 05	Glass Packaging	13.10	4.48	3.55	9.88	6.96	8.06	14.06	7.58	6.72	6.67	3.50	7.10	91.67	
16 02 11	Fridges and Freezers WEEE					3.22			1.20	2.86	10.66	0.24	4.69	22.86	
16 02 13	CRT TV WEEE		1.84	1.92	1.50	2.58	1.52	2.48	1.30					13.24	
16 02 14	Mixed SDA WEEE						3.76	1.88	1.18			0.26		7.08	
16 02 14	Mixed SDA WEEE	7.10	8.36	4.88	3.04	1.20	1.44	2.95	1.72	1.16			0.08	31.92	
	Total into CA	**22.17**	**27.74**	**21.49**	**25.66**	**40.76**	**29.61**	**38.20**	**28.30**	**21.83**	**29.67**	**15.70**	**27.13**	**328.26**	
													TOTAL	22274.32	

Note	*Tire in for the Civic Amenity Site does not include skips on site for Timber, Metal, MMW and Rubble at beginning of the year*

WASTE OUT DUNBOYNE 2009

EWC															
16 01 15	Non Ferrous Metals	0	0	0	0	0	0	1.18	0	0	0	0.00	0.00	**1.18**	0.01
19 12 02	Ferrous Metal Mixed Steel	59.69	31.18	45.24	49.02	42.32	55.5	40.1	26.36	38.62	61.06	44.321	21.96	**515.37**	2.25
15 01 04	Metallic Packaging Aluminium	0	0.94	0	0	0	0.92	0	0	0	0	0.44	0.00	**2.30**	0.01
17 01 07	Clean Construction Rubble	0	0	0	312.68	304.06	103.06	444.36	88.66	465.14	141.02	214.86	57.40	**2129.24**	9.29
17 09 04	Mixed C&D Waste	27.38	14.06	915.49	94.16	42.48	164.2	19.52	0	25.6	0	0.00	0.00	**1302.89**	5.68
19 12 07	Wood Processed or Chipped	152.76	118.4	138.54	80.04	125.67	127.06	107.12	101	111.2	88.74	122.90	81.82	**1355.25**	5.91
16 06 01*	Batteries	0.64	0.96	0	0.66	0.34	0	0.32	0.86	0	0	0.64	0.00	**4.42**	0.02
19 12 05	Glass Packaging	13.1	4.48	3.56	9.88	6.96	8.06	14.06	7.58	6.72	6.67	3.50	7.10	**91.67**	0.40
19 12 09	Trommel Fines	0	0	0	678.02	438.28	1058.02	459.08	65.36	925.18	339.04	655.68	187.96	**4806.62**	20.97
20 01 99	Mixed Dry Recyclables	6.18	11.94	17.88	9.68	0	21.34	11.3	11.56		13.52	12.16	14.70	**130.26**	0.57
20 01 39	Plastic Bottles				0.12	0.4	0.48	0.71	0	0.7	0	0.3	0.94	**3.65**	0.02
20 03 01	Mixed Municipal Waste	1033.44	915.11	999.33	1038.16	1320.46	1515.62	1141.62	1190.35	927	767.1	802.84	842.46	**12493.69**	54.49
16 05 05	Gas Cylinders	0	0	0	0	0	0	0	0	0.14	0	0.00	0.00	**0.14**	0.00
16 01 03	Tyres	0	3.14	0	0	0	0	5.02	0	0	0	0.00	0.00	**8.16**	0.04
16 02 14	Mixed WEEE	7.1	10.2	6.8	4.54	7.00	6.82	7.32	5.40	4.04	10.66	0.50	4.72	**75.10**	0.33
17 08 02	Plasterboard/gypsum	6.46	0	0	0	0	0	0	0	0	0	0.00	0.00	**6.46**	0.03
SUM		**1306.75**	**1110.41**	**2126.84**	**2276.96**	**2287.97**	**3061.08**	**2251.91**	**1495.13**	**2504.3**	**1427.8**	**1858.14**	**1219.06**	**22926.40**	100.00

Landfilled	477.74	360.64	415.33	298.84	214.42	460.36	369.8	394.36	198.52	123.54	77.74	66.56	**3457.85**	15.08
Recovered (Fines & S & S)	0	0	0	678.02	438.28	1058.02	459.08	65.36	925.18	339.04	655.68	187.96	**4806.62**	20.97
Recycled	245.93	181.24	212.02	466.50	486.35	322.76	630.78	239.42	625.86	321.67	399.32	187.7	**4319.55**	18.84
Killeen road	583.08	568.53	1499.49	833.6	1148.92	1219.94	792.25	795.99	754.78	643.56	725.4	776.84	**10342.38**	45.11
Sum	1306.75	1110.41	2126.84	2276.96	2287.97	3061.08	2251.91	1495.13	2504.3	1427.8	1858.1	1219.06	**22926.40**	
% Landfilled from Total	36.56	32.48	19.53	13.12	9.37	15.04	16.42	26.38	7.93	8.65	4.18	5.46	**15.08**	
% Recovered	0.00	0.00	0.00	29.78	19.16	34.56	20.39	4.37	36.94	23.75	35.29	15.42	**20.97**	
% Recycled	18.82	16.32	9.97	20.49	21.26	10.54	28.01	16.01	24.99	22.53	21.49	15.40	**18.84**	
% To Killeen Road	44.62	51.20	70.50	36.61	50.22	39.85	35.18	53.24	30.14	45.07	39.04	63.72	**45.11**	
% Sum	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	

Appendix 4

PADRAIG THORNTON WASTE DISPOSAL LIMITED

DUNBOYNE INDUSTRIAL ESTATE,

DUNBOYNE, COUNTY MEATH

AIR QUALITY MONITORING REPORT

WASTE LICENCE REG. NO. W0206-01

User is Responsible for Checking The Revision Status Of This Document

Rev. Nr.	Description of Changes	Prepared by:	Checked by:	Approved by:	Date:
A	Draft	DD			
0	Issue to Client	DD	BT	RT	06/01/10

Client: Padraig Thornton Waste Disposal Limited

Keywords: Air Quality report, Waste Facility Environmental Monitoring, Thornton Waste Disposal

Abstract: Monitoring of Environmental Air Quality at a Thornton Waste Disposal Facility at Dunboyne Industrial Estate, Dunboyne, County Meath

FEHILY TIMONEY & COMPANY

CONSULTANTS IN ENGINEERING & ENVIRONMENTAL SCIENCES

CORK DUBLIN

Our Ref: J:/LW09/046/02/Let002/DD

Mr. Tommy Rodgers
Padraig Thornton Waste Disposal Limited
Dunboyne Industrial Estate
Dunboyne
Co. Meath

05 January 2010

RE: Air Quality Monitoring Report, Padraig Thornton Waste Disposal Limited (W0206-01)

Dear Tommy,

Fehily Timoney & Company (FTC) was retained to undertake environmental dust and particulate matter (PM_{10}) monitoring for Padraig Thornton Waste Disposal Limited materials recovery facility and civic amenity facility at Dunboyne Industrial Estate, Dunboyne, Co. Meath in accordance with the conditions of the waste licence (W0206-01). Monitoring of these parameters is required on a quarterly basis, as outlined in Schedule C.6 of the waste licence. This document describes the results of quarterly monitoring for dust and PM_{10} during the period October to December 2009.

The media monitored during this quarter and reported herein are as follows:

1. Air Quality - Dust Deposition
2. Air Quality - Particulate Matter (PM_{10})

Environmental dust monitoring for the facility was carried out from October to November 2009. PM_{10} monitoring at the site was carried out during October 2009. Each section of this report details the monitoring undertaken for each media along with a discussion of the data collected.

Unless otherwise specified, monitoring was carried out at those locations set out in Condition 6.12.1 of the waste licence.

1. DUST

1.1 Monitoring Locations

Dust monitoring was carried out quarterly at four locations in accordance with Schedule B and C of the licence.

Cont ...

1.2 Monitoring Parameters

Bergerhoff type gauges were used to determine total dust deposition. Four gauges were set up so that the dust jars were at a height of at least 1.5 m above the ground and the jars were set in place during the monthly monitoring event. The samples were submitted to Southern Scientific Services Ltd for analysis.

Total dust measurements were obtained during October - November 2009 at the locations stated in Table 1.1. The certificates of analysis as issued by Southern Scientific Services Ltd. are included enclosed.

1.3 Monitoring Results

Dust pots were collected from site during November and sent for analysis. The results of the monitoring are set out in Table 1.1 below with Quarter 3, 2009 results included for comparison.

1.4 Interpretation of Results

The dust deposition levels during this quarter are under the limit of 350 mg/m^2/day stipulated by the waste licence at D2, D3 and D4. The levels at D1 are over the licence limit. It is noted that the results at D1 are greatly influenced by the presence of organic dust, with levels over 100% greater than that found in the next highest sample (D2). It is considered that leaf litter found in the dust pot during sampling (and noted in the Laboratory Report from Sourhtern Scientific Services Ltd.) degraded and contributed to the overall levels of organic mater in the sample, thus not providing an accurate reflection of the dust levels at the monitoring location. It is also noted that this monitoring location has the greatest separation of all monitoring locations distance to the material handling sheds on-site. The sample for D1 is considered contaminated.

Table 1.1: Results for Quarterly Dust Monitoring

Monitoring Location	Licence Limit is 350 mg/m^2/day					
	Q3, 2009			Q4, 2009		
	Organic Dust	In- Organic Dust	Total Dust	Organic Dust	In- Organic Dust	Total Dust
	(mg/m^2/day)					
D1	70	96	166	206*	160*	365*
D2	147	308	455	95	100	194
D3	43	130	174	54	126	180
D4	54	101	155	26	27	53

* = Contaminated sample

2. PM10 MONITORING

2.1 Monitoring Locations

FTC carried out monitoring of PM_{10} in the air at four locations (D1 - D4) as per Schedule B and C of the waste licence.

Cont ...

2.2 Monitoring Parameters

PM_{10} monitoring was undertaken for a 24 hour sampling period at each of the four monitoring locations. The monitoring was carried out during October - November 2009. The PM_{10} filters were analysed for the presence of particulate matter by Southern Scientific Services Ltd. The certificates of analysis as issued by Southern Scientific Services Ltd. are enclosed.

2.3 Monitoring Results

The results of PM_{10} monitoring for this quarter are set out in Table 3.1 and the results for Quarter 3, 2009 are included for the purpose of comparison.

2.4 Interpretation of Results

Schedule B5 of the waste licence limits the PM_{10} at a trigger level of 50 $\mu g/m^3$ for a daily sample. The results are presented in Table 21. As indicated in Table 3.1 the results for all samples are under the licence limit.

Table 2.1: Results of Quarterly PM10 Monitoring

Monitoring Location	Average Concentration Value ($\mu G/M^3$) Q3, 2009	Average Concentration Value ($\mu G/M^3$) Q4, 2009
Licence Limit	50 $\mu G/M^3$	
D1 - PM1	12.9	15.6
D2 - PM2	23.2	20.2
D3 - PM3	10.2	10.4
D4 - PM4	21.2	20.9

3. SUMMARY

Environmental monitoring of dust and PM_{10} is required at Padraig Thornton Waste Disposal Limited materials recovery facility and civic amenity facility at Dunboyne Industrial Estate, Dunboyne, Co. Meath under the conditions specified in EPA Waste Licence (W0206-01) for the facility.

This monitoring was undertaken by FTC. Following analysis of the environmental samples taken from the site during October to November 2009 the results of analysis shows that all PM_{10} monitoring results are under the levels set out in the waste licence. The analysis of environmental dust samples show results are greater than the maximum threshold values set by the waste licence for dust at D1. The level of organic dust in the sample is noted (Table 1.1) and it is considered that leaf litter found in the sample degraded contributed in part to the dust levels recorded at this location and thus contaminated the sample.
Monitoring will be undertaken again next quarter.

Please contact me if you have any queries.

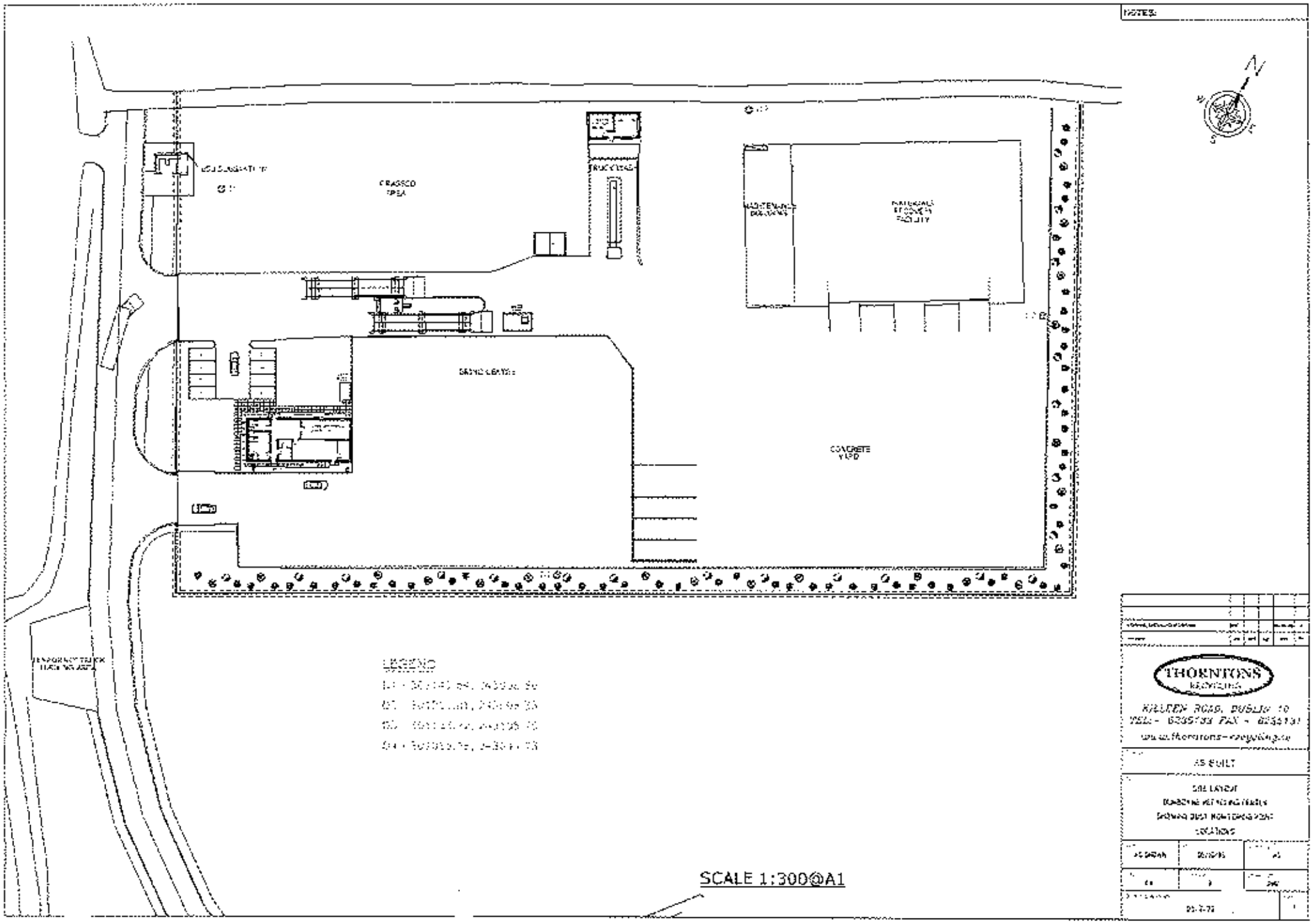
Yours sincerely

Declan Duff
for and on behalf of Fehily Timoney & Company

Encls.

Appendix I

Dust & PM_{10}
Monitoring Locations



THORNTONS RECYCLING

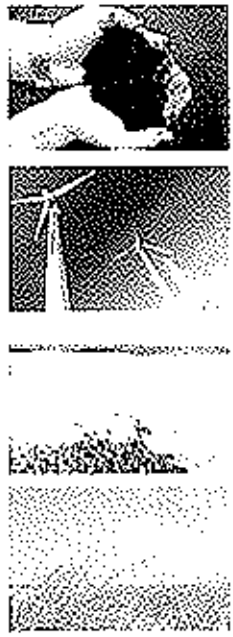
KILLEEN ROAD, DUBLIN 10
TEL:- 8335733 FAX - 8335731
www.thorntons-recycling.ie

AS BUILT

SITE LAYOUT
SHOWING WEIGHBRIDGE LOCATIONS

Appendix II

Monitoring Results



southern scientific services ltd.

FEHILY TIMONEY & CO.
DUBLIN OFFICE
Received by:
Distribution:
17 DEC 2009

OUR REF: RP 2009 / FEHILY TIMONEY & CO. / DUBLIN / 22 / 23

Action:
Job No:
Correspondence No:
Comment

ANALYSIS REPORT

CUSTOMER:	FEHILY TIMONEY & COMPANY	SAMPLE TYPE:	DUST
ADDRESS:	Floor 2, Mill House, Ashtown Gate, Navan Road, Dublin 15	CONDITION OF SAMPLE ON RECEIPT:	Satisfactory
		DATE SAMPLED:	01 October – 02 November 2009
REPORT TO:	DECLAN DUFF	DATE RECEIVED:	05 November 2009
SAMPLED BY:	Declan Duff	DATE ANALYSED:	18 – 24 November 2009
SAMPLING PT:	D1 – D4	DATE REPORTED:	03 December 2009
ORDER NO:	4598	WORK NO.:	22432 C

TABLE OF RESULTS

Method:	LAB REF:	YOUR REF:	Total Particulates mg/m²/day	Organic Particulates mg/m²/day	Inorganic Particulates mg/m²/day
TA Luft VDI 2119	C09-Nov 124	D1	365	206	160
TA Luft VDI 2119	C09-Nov 125	D2	194	95	100
TA Luft VDI 2119	C09-Nov 126	D3	180	54	126
TA Luft VDI 2119	C09-Nov 127	D4	53	26	27

Jennifer Keane
Jennifer Keane
Chemistry Laboratory

- The results relate only to the items tested.
- The analysis report shall not be reproduced except in full without written approval of the laboratory.

COMMNET:

D1 ~ C09-Nov 124

On receipt of collector gauge a large amount of brown vegetation was present, which produced an amount of brown dry matter during analysis.

The ashed dish contained a grey residue which did not produce effervescence on addition of acid indicating the absence of calcium carbonate in the sample.

southern scientific services ltd.

OUR REF: RP 2009 / FEHILY TIMONEY & CO. / DUBLIN / 21

ANALYSIS REPORT

CUSTOMER:	FEHILY TIMONEY & COMPANY	SAMPLE TYPE:	PM_{10} FILTER
ADDRESS:	Floor 2, Mill House, Ashtown Gate, Navan Road, Dublin 15	CONDITION OF SAMPLE ON RECEIPT:	Satisfactory
		DATE SAMPLED:	October - November 2009
REPORT TO:	DECLAN DUFF	DATE RECEIVED:	05 November 2009
SAMPLED BY:	Declan Duff	DATE ANALYSED:	05 - 24 November 2009
SAMPLING PT:	D1 - D4	DATE REPORTED:	24 November 2009
ORDER NO:	PO 4598	WORK NO.:	22433 C

TABLE OF RESULTS

Method:	LAB REF:	YOUR REF:	PM_{10} µg/m^3
SOP 033	C09-Nov 128	D1	15.6
SOP 033	C09-Nov 129	D2	20.2
SOP 033	C09-Nov 130	D3	10.4
SOP 033	C09-Nov 131	D4	20.9

Jennifer Keane
Jennifer Keane
Chemistry Laboratory

- The results relate only to the items tested.
- The analysis report shall not be reproduced except in full without written approval of the laboratory.

registered office
dunrine | killarney | county kerry | ireland | telephone +353 (0)64 66 33922 | fax +353 (0)64 66 39022
web site www.southernscientificireland.com | e-mail info@southernscientificireland.com

directors: K Murphy, M Murphy & C Murphy
registered in ireland no 323196 | vat reg no IE 6343196 M

Appendix 5

Bi-annual Environmental Noise Monitoring Report 2009

December 2009

Location:

Padraig Thorntons Waste Disposal Ltd,
Civic Amenity and Materials Recycling Facility,
Dunboyne Industrial Estate,
Dunboyne,
Co. Meath

WO 206-01

Contents

List of Tables

Appendix

1. INTRODUCTION

Noise monitoring was carried out at Padraic Thornton Waste Disposal Ltd (PTWDL) T/A Thorntons Recycling, Dunboyne Civic Amenity and Materials Recycling Facility on the 21st and 22nd December 2009. Noise monitoring was undertaken by Tommy Rogers of Thorntons Recycling Environmental Department in Compliance with Condition 6.10.1 of the licence (WO 206-01).

The land use in the immediate vicinity of the facility comprises of a mix of agricultural land, commercial, retail, light industrial activities in the industrial estate and residential. The residential areas are located within 200m of the facility to the south west. There is also a bypass being constructed along the northern side of the facility.

2. SCOPE

The scope of the project was to undertake a noise survey as stipulated in Condition 6.10.1 of the Waste licence, which states that, "*The licensee shall carry out a noise survey of the site operations bi-annually. The survey programme shall be undertaken in accordance with the methodology specified in the 'Environmental Noise Survey Document' as published by the Agency*' and Schedule B of the licence. Schedule B stipulates that the maximum daytime (Monday to Friday) dB (A) Leq (30minutes) shall not exceed 55dB and that on Saturdays and night time the dB (A) Leq (30minutes) shall not exceed 45dB. Schedule B also stipulates that there shall be no clearly audible tonal component or impulsive component in the noise emissions from the activity at any noise sensitive location. The noise criteria outlined above is applicable at the two noise sensitive locations N5 and N6 only. Noise recording at the boundary locations is compared to the guideline level for comparison levels only.

Monitoring Locations

Noise monitoring was undertaken at six locations. These locations are illustrated in Appendix A. Noise monitoring point N1, is located on the eastern boundary, N2 on the southern boundary, N3 on the northern boundary and N4 on the western boundary. Noise emissions are recorded at these locations to determine the noise levels at the boundary of the facility during day time operations. The two remaining noise monitoring points are N5, which is located in a housing estate south west of the site and N6 which is located along a third class road east of the site. Noise emissions are recorded at both N5 and N6 to determine the impact of noise from the facility at these noise sensitive locations.

Monitoring Frequency

Monitoring is to be carried out bi-annually using methodology specified in the Environmental noise Survey Document as published by the EPA. This includes measuring the following parameters:

a- L (A)eq (30 minutes)
b- L (A)10 (30 minutes)
c- L (A)90 (30 minutes)
d- Frequency Analysis (1/3 octave band analysis)

Survey Instrumentation and Methodology

In all cases the sound level metre (SLM) was mounted on a tripod 1.5 metre above the ground level and at least 3.5 metres away from any sound reflecting objects. A wind shield was placed on the microphone to reduce any wind interference during measurements. Measurements were also carried out on a calm day. The sound meter was orientated toward the noise sources for all measurements and the area in between the sound level metre and the noise source was fee from any temporary obstacles.

The measurements were made using a Bruel & Kjaer 2238 mediator sound meter. The instrument was calibrated by Bruel & Kjaer on the 14th June 2007 and it was also calibrated in situ at 94dB prior to and after the measurement period using a Bruel & Kjaer 4231 acoustic calibrator (calibrated on 14th June 2007, by Bruel & Kjaer).

The primary measurement parameter was the equivalent continuous A-Weighted Sound Pressure Level, LAeq 30, as recommended by the EPA Environmental Noise Survey Guidance Document. The LAeq 30 is the average level recorded over 30 minutes. The A-weighting is used as it places emphasise on the middle frequencies of the noise spectrum, while putting less emphasis on the higher and lower frequencies. This emulates the way the human ear responds to sound.

A statistical analysis of the measurement was also completed so that the LAeq10 and LAeq90 over the 30 minutes could also be recorded. These recording represents the noise levels recorded in dB(A) for 10% and 90% of the measurement time respectively. The LAeq10 values are used to describe intermittent, high-energy noise events and usually are a good indicator of the level of traffic. The LAeq90values are representative of background noise levels and will describe the noise present for the majority of the sampling period.

In addition, frequency analysis was carried out in the 1/3 octave band at each of the noise monitoring locations to assess the potential tonal components of ambient noise generated in the vicinity of the facility. All sources of noise were noted, recorded and where possible, identified during the course of the survey.

Existing Noise Environment.

The main noise sources from the facility consist of the following:

- Site machinery- operations of mobile plant such as the fuchs and loading shovel within the facility.

- Traffic noise- lorries entering and leaving the facility and reversing alarms on machinery and lorries
- Customer noise- noise from cars entering the civic amenity site and bin lids been closed.

It should be noted that recycling operations take place indoors and during the monitoring period on this occasion the fixed plant was not running. The plant consists of a Fuchs machine which feeds material into the crusher. The material is then conveyed along a belt, under a magnet and into a trammel and then a wind shifter before passing into a compactor. A loading shovel is used to load trailers with material and also to tidy the waste on the floor.

Other noise sources are present at the facility and these are not related to the site activities. These include:

- Noise from the new bypass road adjacent to the facility which is opened to traffic.
- Lorry and car movements within the industrial estate and the housing estate
- Aeroplane noise- we are located under a flight path to Dublin Airport.
- Noise from the N3 which is a National Primary road located close to the facility.
- Noise within the housing estate, vehicle movements, children and bird song.

Meteorological Conditions

Meteorological conditions noted during the survey days were dry, mild and with little or no wind. Measurements were taken over two days.

3. RESULTS

The results of the noise survey are summaries in Table 1 and Appendix B.

Table 1: Noise measurement results for Dunboyne second Bi-annual monitoring in 2009.

NP1	54.2	55.0	54.0	n/a
NP2	56.6	57.0	55.0	n/a
NP3	62.8	63.0	62.0	n/a
NP4	64.6	63.2	62.0	n/a
NP5	50.6	53.0	51.0	55
NP6	54.3	66.0	54.0	55

4. DISCUSSION

Boundary Location

N1 – Eastern Boundary

N1 is located on at the back of the site in the main yard. The noise sources noted at this location during the monitoring included noise from the loading shovel and its reversing alarm, the Fuchs, lorries dropping and lifting skips in the yard, noise from aeroplanes passing overhead, material been pushed up in the shed and also the newly opened bypass road.

N2 – Southern Boundary

N2 is located in the civic amenity site. The predominant noise sources noted at this location during the measurement were from cars in the civic amenity site, lorries passing the gate, the wheel grid, lids in the civic amenity site banging, glass been dropped in the civic amenity site, aeroplanes, and external machinery and traffic from the new bypass adjacent to the facility

The broadband graph illustrates a regular noise pattern with no peaks. No tonal noise was recorded.

N3 – Northern Boundary

N3 is located midway on the northern boundary near the canteen. Noise sources recorded at this location consisted of Lorries on the weighbridge and in the yard, the dumper operating on the bypass, high Mac, bulldozer, Lorries and a roller were also in operation. Lorries passing over the wheel grid and overhead aeroplanes were also noted. There was also washing down of bins at the wash bay area during the noise survey.

The broadband graph illustrates an irregular noise pattern. A tonal noise detected at 315 Hz; this is considered to have originated at the Power Washer washing out the bins.

N4 – Western Boundary

N4 is located beside the main office and the public entrance to the civic amenity site. The main source of noise at this location was from cars entering the civic amenity site and from Lorries entering the main yard. The other noise source was from aeroplanes passing overhead and from traffic on the newly opened bypass.

Noise Sensitive Locations
N5- Lutterall Hall Housing Estate.

The noise limit was not exceeded at this location. The housing estate of Lutterall Hall is located approximately 200m south of the site. A wall of 2.4 m in height separates the housing estate from the industrial estate and a boundary of trees has been planted by Thorntons Recycling on the residential side. The main source of noise at this location was from the traffic on the newly opened bypass and cars entering and leaving the estate.

The LAeq indicates that the noise level in the area is below the threshold. The broadband graph illustrates a regular noise pattern with no tones detected.

N6- Third Class Road.

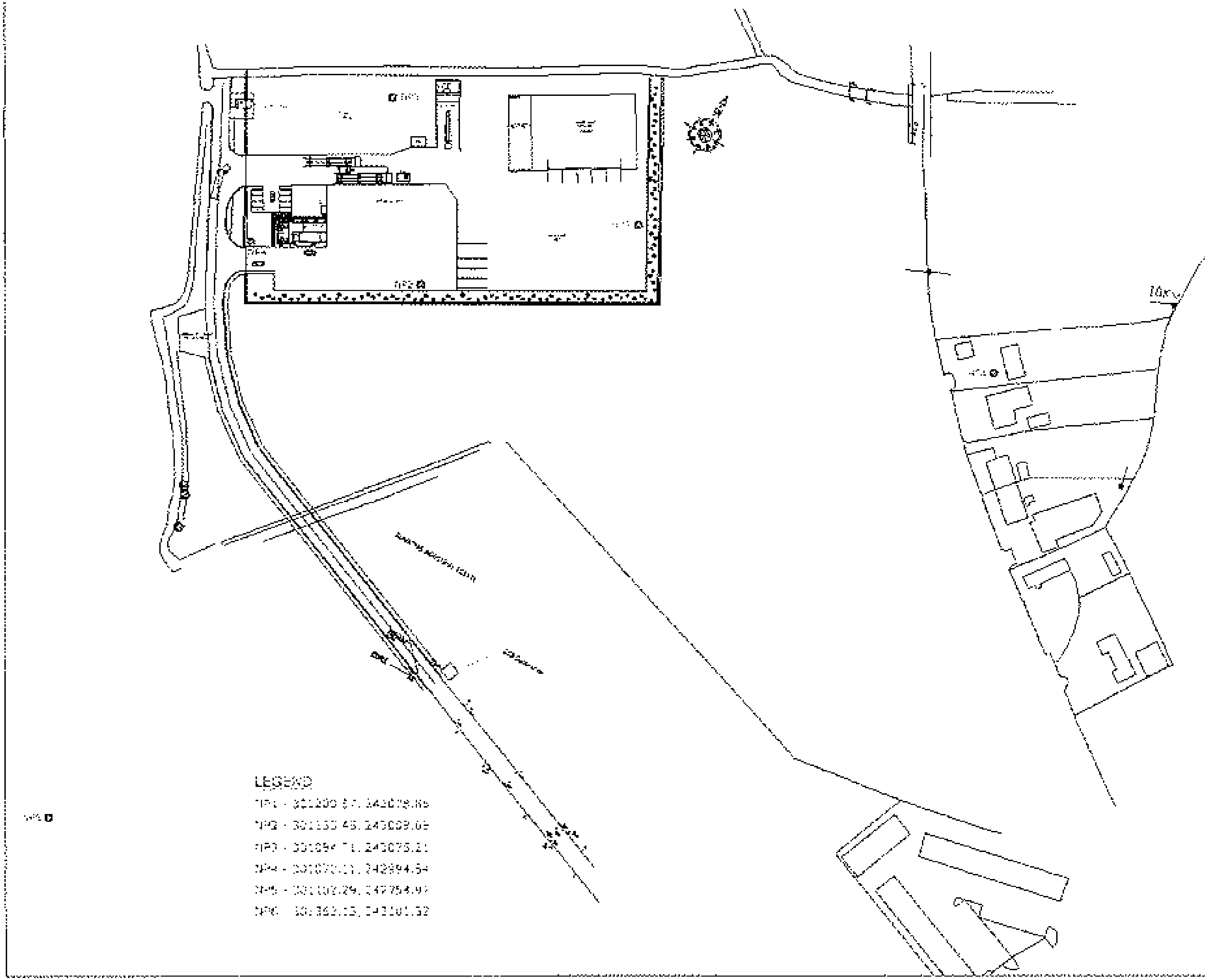
Although the noise limit is exceeded at N6, it was not as a result of activities from Thorntons Recycling activities which are located approximately 200m west of the monitoring location. The predominant noise source at this location was from traffic passing on the local road adjacent to the monitoring point. 32 vehicles were recorded to have passed during the monitoring period. The LA10 which is a good indicator of traffic noise was 66dB. . This traffic was not associated with Thorntons Recycling. The LA90 gives a good indicator of the noise level at the location without the passing traffic and this was measured to be 54 dB. This indicates that Thorntons does not contribute adversely to the noise level at this location.

5. CONCLUSION

Analysis of the results from the noise survey indicates that the noise levels at the noise sensitive locations are not adversely affected by the activities of the Thorntons Recycling facility. The noise limit as set out in WO 206-01 was not exceeded at N5 and N6.

APPENDIX A

NOTES:



THORNTONS RECYCLING

KILLEEN ROAD, DUBLIN 12
TEL:- 6235135 FAX:- 6235131
www.thorntons-recycling.ie

AS BUILT

SITE LAYOUT
RECYCLING CENTER
SHOWING NOISE MONITORING POINT
LOCATIONS

NTS		A3

APPENDIX B

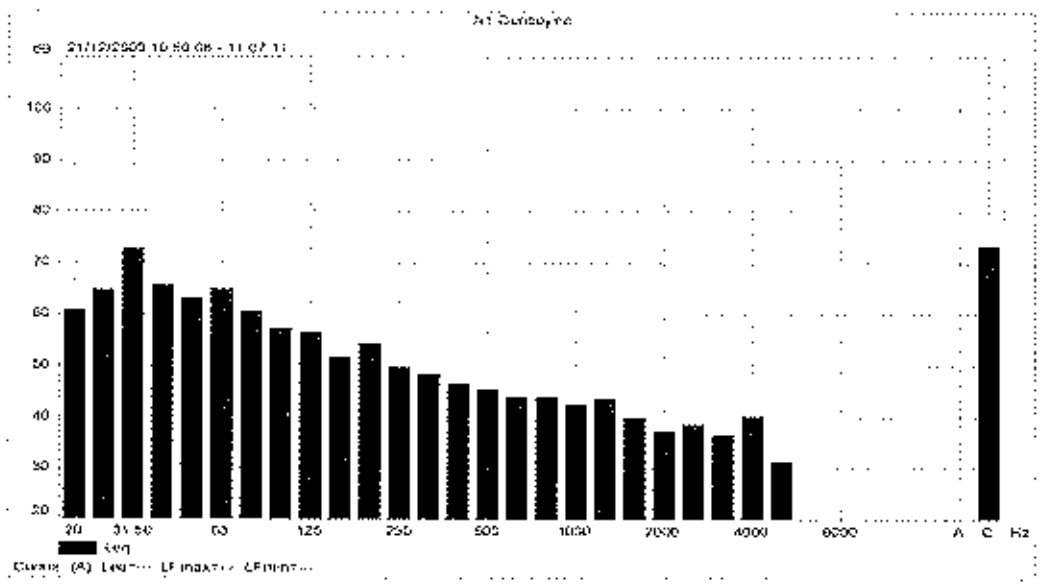
Measurement Details

Instrument:	2236
Application:	BZ7123 version 1.1
Start Time:	21/12/2009 10:50:08
End Time:	21/12/2009 11:07:11
Elapsed Time:	0:17:03
Bandwidth:	1/3 Octave
Range:	30.0-110.0 dB
No. of Scans:	9
Instrument Serial Number:	2590900
Microphone Serial Number:	2662270
Input:	Microphone
Windscreen Correction:	On
S. I. Correction:	Frontal
Calibration Time:	21/12/2009 08:48:11
Calibration Level:	93.9 dB
Sensitivity:	-30.5 dB
Location:	N1

Data

Spectrum Time Slot: 21/12/2009 10:50:08 - 11:07:11

Frequency [Hz]	Leq [dB]	LFmax [dB]	LFmin [dB]	Frequency [Hz]	Leq [dB]	LFmax [dB]	LFmin [dB]
20	60.6	77.1	44.9	500	45.4	51.3	37.3
25	64.7	83.5	50.2	630	43.8	47.8	38.4
31.50	72.6	86.5	53	800	43.9	47.6	39
40	65.6	85	48.1	1000	42.5	44.8	37.6
50	63.1	77.6	50.4	1250	43.5	49.7	37.7
63	64.8	79	52.6	1600	39.9	44	36
80	60.5	74.6	49.3	2000	37.2	42.1	34.6
100	57	74.1	47.7	2500	38.5	47	31.4
125	55.4	64.1	45	3150	36.5	49.5	---
160	51.7	61.5	43.1	4000	40.1	48.9	---
200	54.1	65.9	43.8	5000	31.4	36.2	---
250	49.6	59.3	43.1	6300	---	31.8	---
315	48.3	53.1	38.9	8000	---	32.6	---
400	46.4	53.3	41.1	10000	---	---	---
				12500	---	---	---



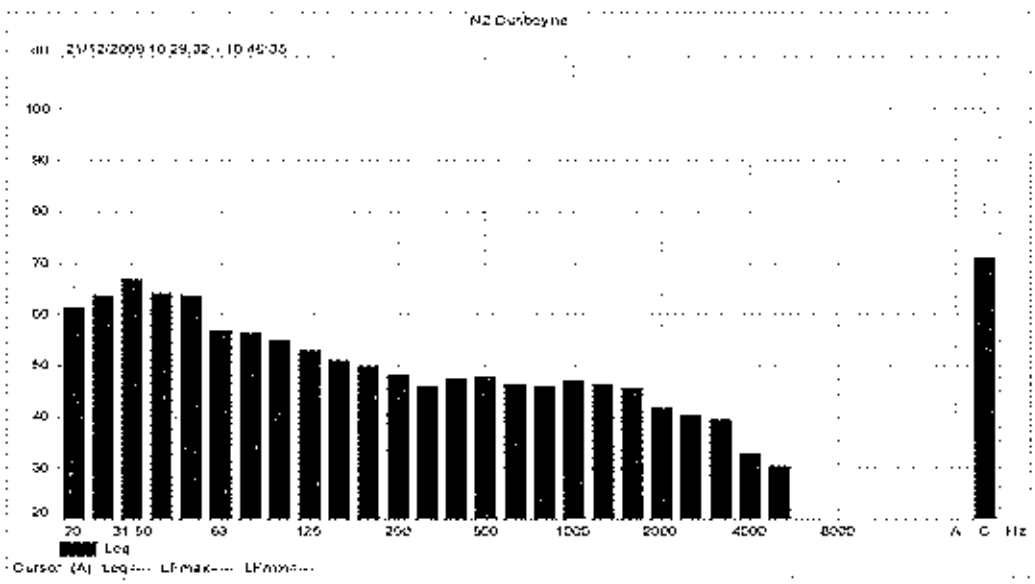
Measurement Details

Instrument:	2236
Application	BZ7123 version 1.1
Start Time	21/12/2009 10:29:32
End Time	21/12/2009 10:46:35
Elapsed Time	0:17:03
Bandwidth	1/3 Octave
Range:	30.0-110.0 dB
No. of Scans:	9
Instrument Serial Number:	2590900
Microphone Serial Number:	2682270
Input:	Microphone
Windscreen Correction:	On
S. I. Correction:	Frontal
Calibration Time:	21/12/2009 08:45:11
Calibration Level:	93.9 dB
Sensitivity:	-30.5 dB
Location:	N2

Data

Spectrum Time Slot 21/12/2009 10:29:32 - 10:46:35

Frequency (Hz)	Leq [dB]	LFmax [dB]	LFmin [dB]	Frequency	Leq [dB]	LFmax [dB]	LFmin [dB]
20	61.4	77.7	39.7	500	48	53.8	43.5
25	63.6	77	48.5	630	46.4	53.1	40.9
31.50	66.8	74.5	44.8	800	46	50.3	40.8
40	64	76.9	44.4	1000	47.2	50.7	42.6
50	63.7	80.5	46.6	1250	46.4	49.6	41.6
63	56.9	69.1	47.6	1600	45.7	48.9	41.3
80	56.4	69.2	47	2000	41.7	45.5	38.1
100	54.5	71.7	43.7	2500	40.3	47	32.5
125	53	66.3	41	3150	39.4	45.5	---
160	51	60.6	41	4000	32.9	39.7	---
200	49.9	58.5	39.6	5000	30.3	37.4	---
250	48.2	54.5	39.9	6300	---	34.3	---
315	46	54	37.6	8000	---	---	---
400	47.6	54.5	39.1	10000	---	---	---
				12500	---	---	---



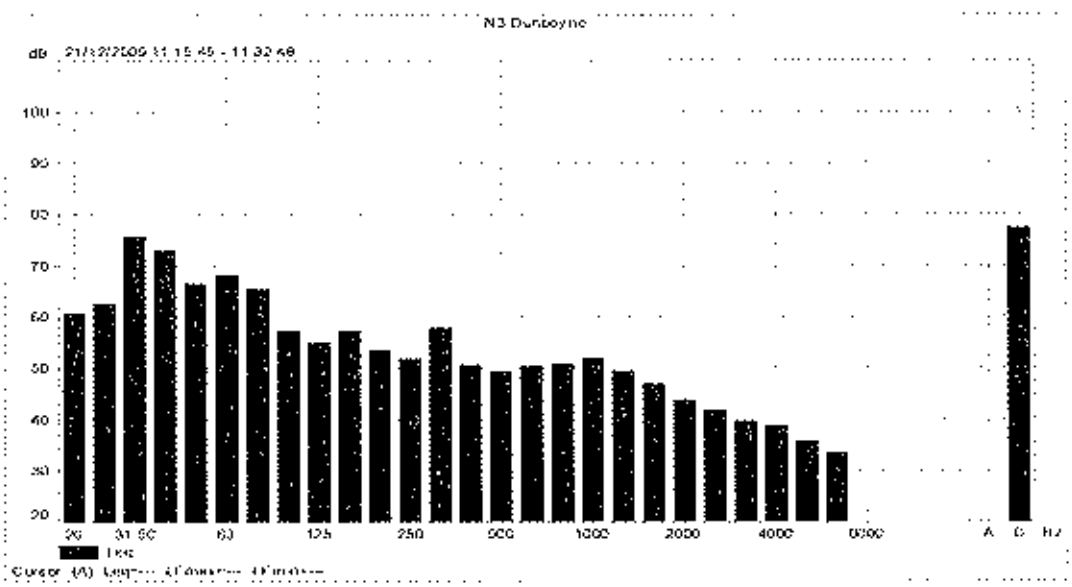
Measurement Details

Instrument:	2238
Application:	BZ7123 version 1.1
Start Time:	21/12/2009 11:15:45
End Time:	21/12/2009 11:32:48
Elapsed Time:	0:17:03
Bandwidth:	1/3 Octave
Range:	30.0-110.0 dB
No. of Scans	9
Instrument Serial Number:	2690900
Microphone Serial Number:	2682270
Input:	Microphone
Windscreen Correction:	On
S.I. Correction	Frontal
Calibration Time:	21/12/2009 08:48:11
Calibration Level:	93.9 dB
Sensitivity	-30.5 dB
Location:	N3

Data

Spectrum Time Slot 21/12/2009 11:15:45 - 11:32:48

Frequency [Hz]	Leq [dB]	LFmax [dB]	LFmin [dB]	Frequency	Leq [dB]	LFmax [dB]	LFmin [dB]
20	60.8	76.9	43.9	500	49.3	55	42.3
25	62.7	73.3	49	630	50.4	55.7	42.1
31.50	75.7	82.2	51	800	50.9	55.5	41.2
40	73	77.6	51.9	1000	51.9	55.1	40.6
50	66.5	79.4	52.6	1250	49.5	53.1	42.3
63	66.3	74.5	53.2	1600	46.9	51.3	40.9
80	65.5	70.7	48.9	2000	43.7	47.6	37.6
100	57.3	65.6	47.3	2500	42	47.4	35.9
125	56	64.4	44	3150	39.7	45.1	33.3
160	57.4	66.8	46	4000	36.6	45.3	---
200	53.6	61.2	44.9	5000	35.8	43	---
250	51.9	60.8	42.4	6300	33.4	39.9	---
315	57.9	68.8	42.2	8000	---	36	---
400	50.7	58.3	43.2	10000	---	32.6	---
				12500	---	---	---



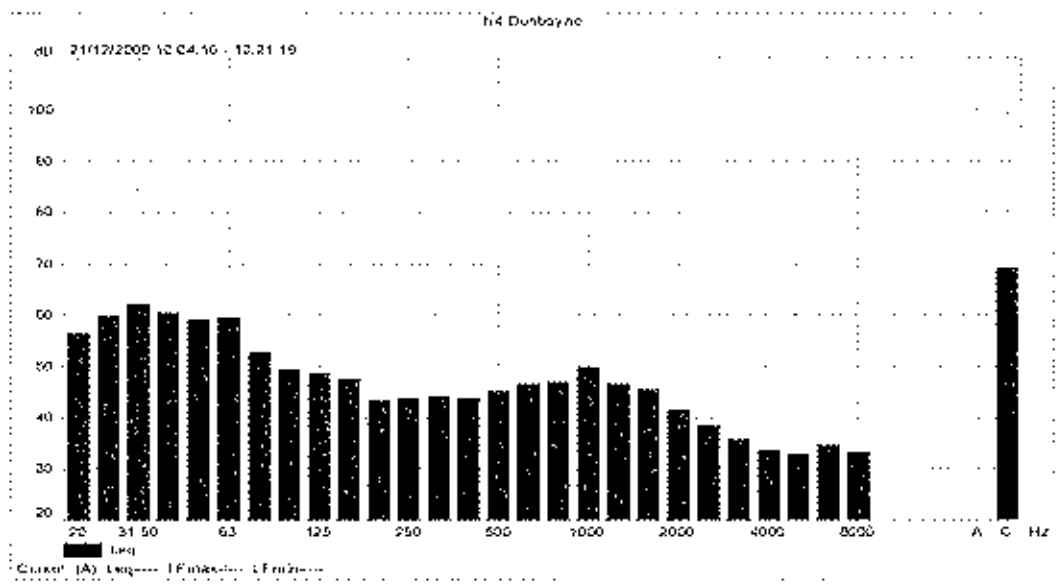
Measurement Details

Instrument:	2236
Application:	BZ7123 version 1.1
Start Time:	21/12/2009 10.04.16
End Time:	21/12/2009 10.21.19
Elapsed Time:	0:17:03
Bandwidth:	1/3 Octave
Range:	30.0-130.0 dB
No. of Scans:	9
Instrument Serial Number:	2569900
Microphone Serial Number:	2582270
Input:	Microphone
Windscreen Correction:	On
S.I. Correction:	Frontal
Calibration Time	21/12/2009 08:48.11
Calibration Level	93.9 dB
Sensitivity:	-30.5 dB
Location:	N4

Data

Spectrum Time Slot: 21/12/2009 10.04.16 - 10.21.19

Frequency [Hz]	Leq [dB]	LFmax [dB]	LFmin [dB]	Frequency [Hz]	Leq [dB]	LFmax [dB]	LFmin [dB]
20	50.4	67.6	36.7	500	45.1	52.3	34.9
25	59.8	70.2	42.9	630	46.6	53.8	39.7
31.50	62.1	73.3	45	800	46.9	53.4	38.2
40	60.5	71.8	41.7	1000	46.8	55	41
50	59.1	72	46.3	1250	46.6	52.9	35.8
63	59.6	72.6	45.1	1600	45.5	51.3	34.1
80	52.7	61.5	40.6	2000	41.5	47.4	30.7
100	49.3	58.1	36.9	2500	38.4	43.5	---
125	48.6	56.5	32.3	3150	35.7	41.2	---
160	47.6	58.6	32.3	4000	33.5	39.6	---
200	43.4	51.3	---	5000	32.6	38.1	---
250	43.9	52	31.3	6300	34.5	40.9	---
315	44.1	53.6	30.3	8000	33.2	40.9	---
400	43.8	50.6	---	10000	---	31.2	---
				12500	---	---	---



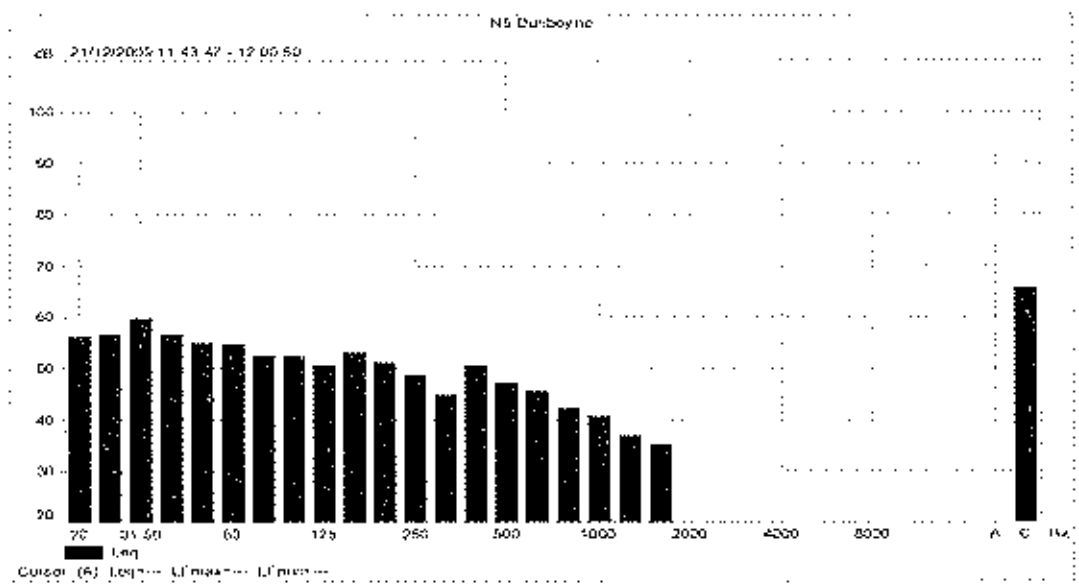
Measurement Details

Instrument:	2238
Application	BZ7123 version 1.1
Start Time	21/12/2009 11:43:47
End Time	21/12/2009 12:00:50
Elapsed Time	0:17:03
Bandwidth	1/3 Octave
Range:	30.0-110.0 dB
No. of Scans:	5
Instrument Serial Number.	2590900
Microphone Serial Number.	2662270
Input	Microphone
Windscreen Correction:	On
S. I. Correction:	Frontal
Calibration Time:	21/12/2009 08:48:11
Calibration Level	93.9 dB
Sensitivity:	-30.5 dB
Location:	N5

Data

Spectrum Time Slot: 21/12/2009 11:43:47 - 12:00:50

Frequency [Hz]	Leq [dB]	LFmax [dB]	LFmin [dB]	Frequency [Hz]	Leq [dB]	LFmax [dB]	LFmin [dB]
20	56.1	69.6	37.7	500	47.2	58.6	---
25	55.6	72.1	40.1	630	45.5	56.8	30
31.50	59.7	72.6	40.7	800	42.2	55.9	32.6
40	56.7	69.6	42.6	1000	40.7	49.3	32.7
50	55	65.4	41	1250	38.8	42.3	---
63	54.6	63.6	43	1600	35.2	42.1	---
80	52.5	61.1	39.5	2000	---	35.3	---
100	52.4	61.5	39.1	2500	---	36.7	---
125	50.6	60.8	32.7	3150	---	31	---
160	53.1	65.5	34.6	4000	---	31.5	---
200	51.1	66.5	---	5000	---	36.4	---
250	48.6	59.8	---	6300	---	---	---
315	44.8	53.1	---	8000	---	---	---
400	50.6	63.8	---	10000	---	33.8	---
				12500	---	---	---



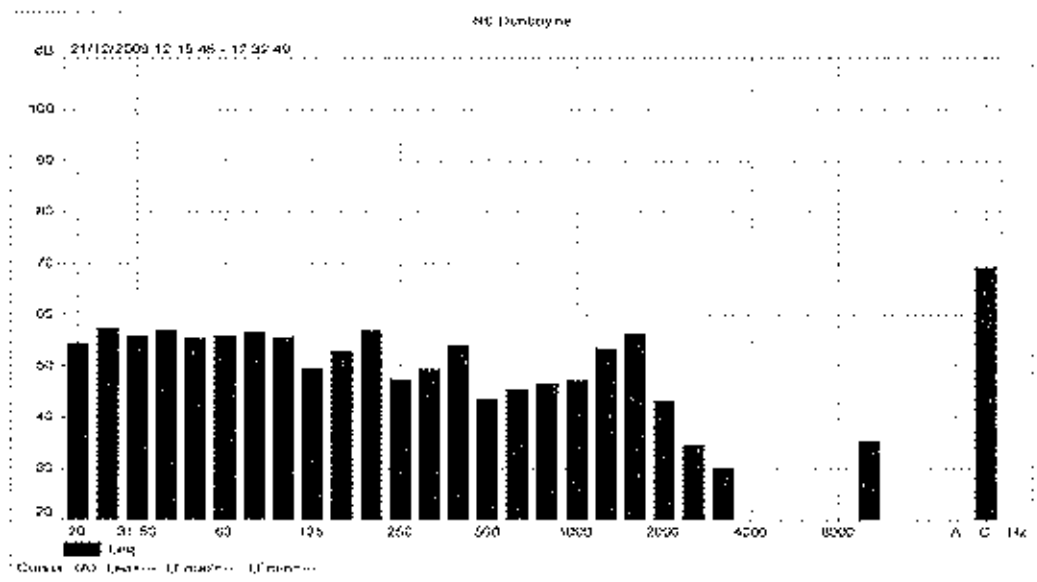
Measurement Details

Instrument:	2238
Application:	BZ7123 version 1.1
Start Time:	21/12/2009 12:15:46
End Time:	21/12/2009 12:32:49
Elapsed Time:	0:17:03
Bandwidth	1/3 Octave
Range:	30.0-110.0 dB
No. of Scans:	9
Instrument Serial Number:	2590500
Microphone Serial Number:	2682270
Input:	Microphone
Windscreen Correction:	On
S. I. Correction:	Frontal
Calibration Time:	21/12/2009 08:48:11
Calibration Level	93.9 dB
Sensitivity:	-30.5 dB
Location:	N6

Data

Spectrum Time Slot 21/12/2009 12:15:46 - 12:32:49

Frequency (Hz)	Leq (dB)	LFmax (dB)	LFmin (dB)	Frequency	Leq (dB)	LFmax (dB)	LFmin (dB)
20	54.3	67.3	35.7	500	43.6	51.6	30
25	57.3	77.3	37.7	630	45.4	53.2	34.1
31.5	55.9	65.5	44.1	800	46.5	51	39.4
40	57	67.6	41.3	1000	47.2	52.9	34.7
50	55.4	65.4	45.4	1250	53.4	69.7	34
63	55.9	64.8	45.1	1600	56.4	69.7	31.9
80	59.7	64.9	42.5	2000	43.4	51.7	---
100	55.6	67.6	40.4	2500	34.7	40	---
125	49.6	59.4	36.2	3150	30.1	36	---
160	52.8	66.6	32.3	4000	---	---	---
200	56.8	69.5	---	5000	---	34	---
250	47.5	56.9	---	6300	---	32.4	---
315	49.4	65.9	---	8000	---	---	---
400	54	65.4	31	10000	35.4	46.4	---
				12500	---	39.3	---



Measurement Details

Instrument:		2238
Application:		BZ7124 version 1.2
Start Time:		22/12/2009 10:50:29
End Time:		22/12/2009 11:20:34
Elapsed Time:		0:30:05
Bandwidth:		Broad band
Detector 1/2	RMS	Peak
Range:		30.0-110.0 dB

Instrument Serial Number.	2590900
Microphone Serial Number.	2682270
Input	Microphone
Windscreen Correction:	On
S. I. Correction.	Frontal

Calibration Time:	22/12/2009 09:37:54
Calibration Level:	93.9 dB
Sensitivity	-30.6 dB
Location	N1

Data

Leq (dBA)	55.4	L1:	56 dB
LAF Max (dBA)	75.9	L5:	56 dB
LAF Min (dBA)	46.1	L10	55 dB
Overload (%)	0	L50	55 dB
		L90	54 dB
		L95	54 dB
		L99	54 dB

Measurement Details

Instrument		2238
Application		BZ7124 version 1.2
Start Time		22/12/2009 09:40:37
End Time		22/12/2009 10:10:41
Elapsed Time		0:30:04
Bandwidth		Broad band
Detector 1/2	RMS	Peak
Range		30.0-110.0 dB

Instrument Serial Number:	2590900
Microphone Serial Number:	2682270
Input:	Microphone
Windscreen Correction:	On
S. I. Correction:	Frontal

Calibration Time:	22/12/2009 09:37:54
Calibration Level:	93.9 dB
Sensitivity:	-30.6 dB
Location	N2

Data

Leq (dBA)	55	L1:	57 dB
LAF Max (dBA)	73	L5:	57 dB
LAF Min (dBA)	46.3	L10:	57 dB
Overload (%)	0	L50:	57 dB
		L90	55 dB
		L95:	55 dB
		L99:	55 dB

...

Measurement Details

Instrument		2238
Application		BZ7124 version 1.2
Start Time		22/12/2009 10:12:52
End Time		22/12/2009 10:46:47
Elapsed Time		0:33:55
Bandwidth		Broad band
Detector 1/2	RMS	Peak
Range		30.0-110.0 dB

Instrument Serial Number	2690900
Microphone Serial Number	2682270
Input	Microphone
Windscreen Correction	On
S. I. Correction	Frontal

Calibration Time	22/12/2009 09:37:54
Calibration Level	93.9 dB
Sensitivity	-30.6 dB
Location	N3

Data

Leq (dBA)	52	L1	63 dB
LAF Max (dBA)	69.8	L5	63 dB
LAF Min (dBA)	48.7	L10	63 dB
Overload (%)	0	L50	63 dB
		L90	62 dB
		L95	62 dB
		L99	62 dB

Measurement Details

Instrument		2238
Application		BZ7124 version 1.7
Start Time		
End Time		
Elapsed Time:		
Bandwidth:		Broad band
Detector 1/2	RMS	Peak
Range:		30.0-110.0 dB

Instrument Serial Number.	2590900
Microphone Serial Number.	2682270
Input	Microphone
Windscreen Correction	On
S. I. Correction:	Frontal

Calibration Time:	
Calibration Level:	
Sensitivity:	
Location	N4

Data

Leq (dBA)		L1:	dB
LAF Max (dBA)		L5:	dB
LAF Min (dBA)		L10.	dB
Overload (%)		L50.	dB
		L90.	dB
		L95	dB
		L99	dB

Measurement Details

Instrument		2238
Application:		BZ7124 version 1.2
Start Time		22/12/2009 14:18:56
End Time:		22/12/2009 14:49:00
Elapsed Time:		0:30:04
Bandwidth:		Broad band
Detector 1/2	RMS	Peak
Range:		30.0-110.0 dB

Instrument Serial Number:	2590900
Microphone Serial Number:	2682270
Input:	Microphone
Windscreen Correction:	On
S. I. Correction:	Frontal

Calibration Time:	22/12/2009 09:37:54
Calibration Level:	93.9 dB
Sensitivity	-30.6 dB
Location	N5

Data

Leq (dBA)	52.8	L1:	53 dB
LAF Max (dBA)	75.5	L5:	53 dB
LAF Min (dBA)	38.3	L10:	53 dB
Overload (%)	0	L50:	53 dB
		L90:	51 dB
		L95:	51 dB
		L99:	51 dB

Measurement Details

Instrument:		2238
Application:		BZ7124 version 1.2
Start Time:		22/12/2009 13:42:47
End Time:		22/12/2009 14:12:51
Elapsed Time:		0:30:04
Bandwidth:		Broad band
Detector 1/2	RMS	Peak
Range:		30.0-110.0 dB

Instrument Serial Number:	2590900
Microphone Serial Number:	2682270
Input:	Microphone
Windscreen Correction:	On
S. I. Correction:	Frontal

Calibration Time:	22/12/2009 09:37:54
Calibration Level:	93.9 dB
Sensitivity:	-30.6 dB
Location	N6

Data

Leq (dBA)	65.6	L1:	66 dB
LAF Max (dBA)	86.2	L5:	66 dB
LAF Min (dBA)	43	L10:	66 dB
Overload (%)	0	L50:	66 dB
		L90:	54 dB
		L95:	54 dB
		L99:	54 dB

APPENDIX C

Glossary of Terms:

Ambient noise:
The totally encompassing sound in a given situation at a given time, usually composed of sound from many sources, near and far.

Background noise level:
The A-weighted sound pressure level of the residual noise at the assessment position that is exceeded for 90% of a given time interval, T (LA90,T).

Criterion Noise Level:
The long-term mean value of the noise level that must not be exceeded. This is generally stipulated in the IPC licence and it may be applied to a nose source, a boundary of the activity or to noise sensitive locations in the vicinity of the facility.

1/3 Octave Band Analysis:
Frequency analysis of sound such that the frequency spectrum is subdivided into bands on one-third of an octave each. An octave is taken to be a frequency interval the upper limit of which is twice the lower limit (the unit of frequency is the Hertz, Hz).

Day and Night time:
Day time is considered to be from 8.00 am to 10.00pm and night time is considered to be from 10.00 pm to 8.00am.

DB(decibel)
The scale in which sound pressure level is expressed. It is defined as 20 times the logarithim of the ratio between the RMS pressure of the sound field and the reference pressure of 20 micro-pascals (20 μPa).

DBA or dB(A):
An "A-weighted decibel"- a measure of the overall noise level of sound across the audible frequency range (20Hz – 20kHz) with A-frequency weighting to compensate for the varying sensitivity of the human ear to sound at the different frequencies.

Facade level:
Noise levels at location 1m from the facade of a building are described by the term Facade Levels and are subject to higher noise levels than those in open areas (free – field locations) due to reflection effects.

Free-field Conditions:
These are conditions in which the radiation from sound sources is unaffected by the presence of any reflecting boundaries. In practice it is a field in which the boundaries are negligible over the frequency range of interest. In environmental noise, true free field measurement conditions are seldom achieved and generally the microphone will be positioned at a height between 1.2 and 1.5 metres above ground level. To minimise the

influence of reflections, measurements are generally made at least 3.5 meters from any reflecting surface other than the ground.

Hz (hertz):
The unit of sound frequency in cycles per second.

Impulsive Noise:
A noise that is of short duration (typically less than one second), the sound pressure level of which is significantly higher than the background. In determining weather a tonal adjustment applies reference must be made to ISO 1996-2 (1987)- Section 4.1.

Impulsive Exponential- time weighting:
This is a time-weighting which is available on some sound level meters and it represents an arbitrary compromise in an attempt to provide a means to measure the sound level of short-duration impulsive sounds. Impulsive time-weighting has a design goal exponential-time constant of 35 ms for sound signals that increase with increasing time and 1.5 seconds for sound signals that decrease with increasing time.

LAeqT:
The equivalent steady sound level in dB containing the same acoustic energy as the actual fluctuating sound level over the given period, T.

LAmax:
The maximum RMS, A-weighting sound pressure level occurring within a specified time period; the time weighting fast or slow is usually specified.

Noise:
Any sound, that has the potential to cause disturbance, discomfort or psychological stress to a subject exposed to it, or any sound, that could to cause actual physiological harm to a subject exposed to it, or physical damage to any structure exposed to it, is known as noise.

Noise Sensitive Location:
Any dwelling house, hotel or hostel, health building, educational establishment, place of worship or entertainment, or any other facility or other area of high amenity which for its proper enjoyment requires the absence of noise at nuisance levels.

Rating Level (L Ar,T)
The specified noise level, plus any adjustment for the characteristic features of the noise.

Residual Noise:
The ambient noise remaining at a given position in a given situation when the specific source is suppressed to a degree such that it does not contribute to the ambient noise (residual noise level is measured in terms of LAeq,T).

Root Mean Square (RMS):
The RMS value of a set of numbers is the square root of the average of their squares.

Sound Exposure Level (SEL or LAE):
This is the measurement of the A-weighting sound energy used to describe noise events such as the passing of a train or aircraft; it is the A-weighting sound pressure level if occurring over a period of 1 second, would contain the same amount of A-weighted sound energy as the event.

Specific Noise Level:
A component of the ambient noise which can be specifically identified by acoustical means and may be associated with a specific source. In BS 4142, there is a more precise definition as follows " the equivalent continuous A-weighted sound pressure level at the assessment position produced by the specific noise source over a given reference time interval (Laeq,T).

Time-weighting:
One of the averaging times (Fast, Slow or Impulsive) used for the measurement of RMS sound pressure level in sound level meters.

Tonal Noise:
Noise which contains a clearly audible tone, i.e a distinguishable, discrete or continuous note, (whine, hiss, screech or hum etc) In determining whether a tonal adjustment applies, reference must be made to ISO 1996-2 (1987) – Section 4.1.

APPENDIX D

CERTIFICATE OF CALIBRATION

UKAS Accredited Calibration Laboratory Number 0174

Certificate Number

16171

Appropriate corrections for atmospheric pressure during calibration and for measurement system frequency and level response were taken into account.

Sound pressure level results given in the certificate are the mean of 5 measurements.

Calibration results apply at ambient conditions during the process of calibration. which are given in the certificate.

CALIBRATION RESULTS

Coupler Configuration	Microphone Type (without grid)	Output Level dB re 20μPa At ambient Test conditions	↑20dB Level Step dB	Frequency Hz (not UKAS Accredited)	Total Harmonic Distortion % (Not UKAS Accredited)
½-INCH	4180	94.08	20.02	1000	0.4
—	—	—	—	—	—

The expanded uncertainties are as follows:

Output Level: ±0.15dB.
Frequency: ±(last reported digit).
Level Step: ±0.04dB
Total Harmonic Distortion: ±0.3%Distortion.

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor *k*=2, providing a level of confidence of approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements.

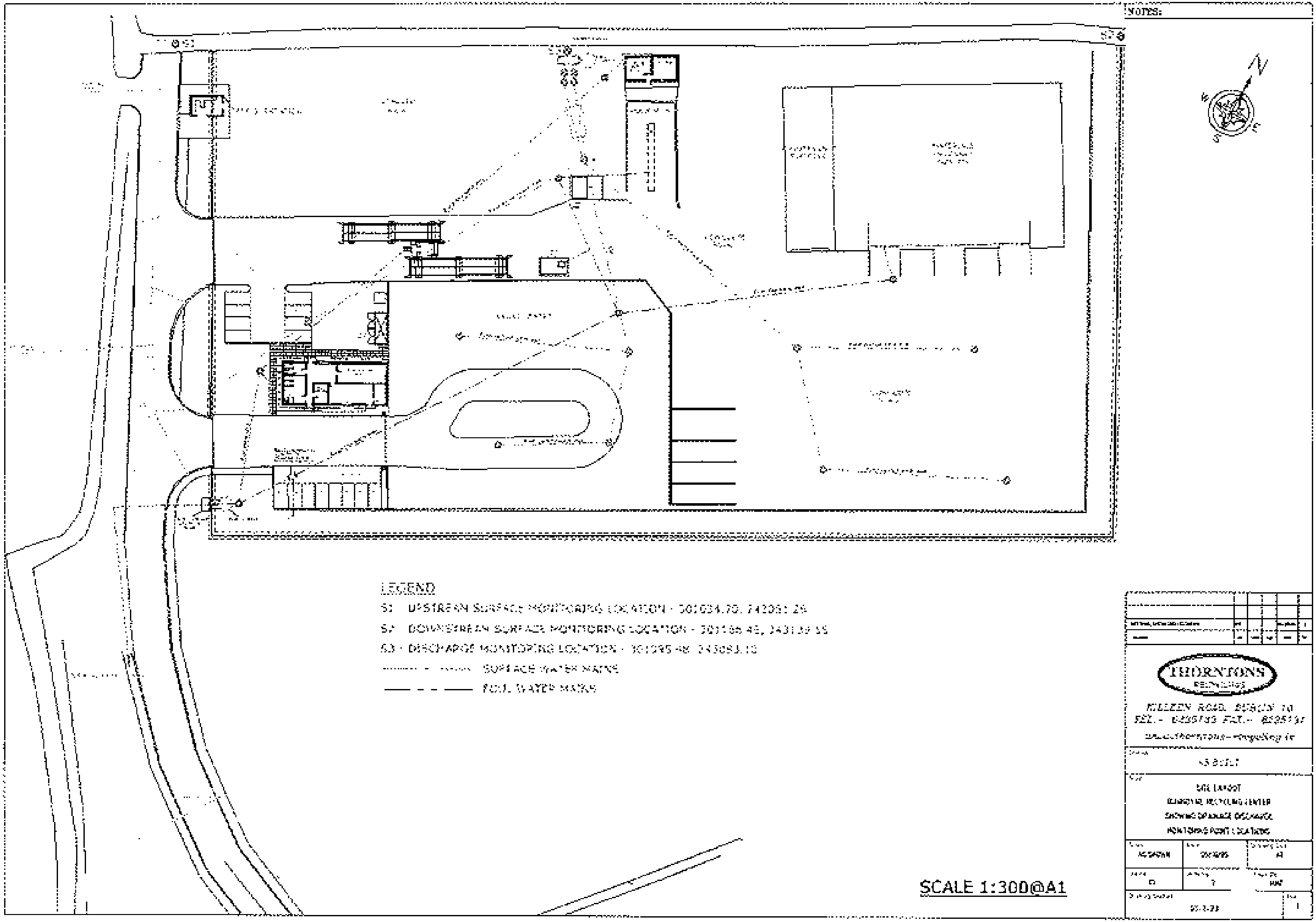
Ambient conditions during calibration were:

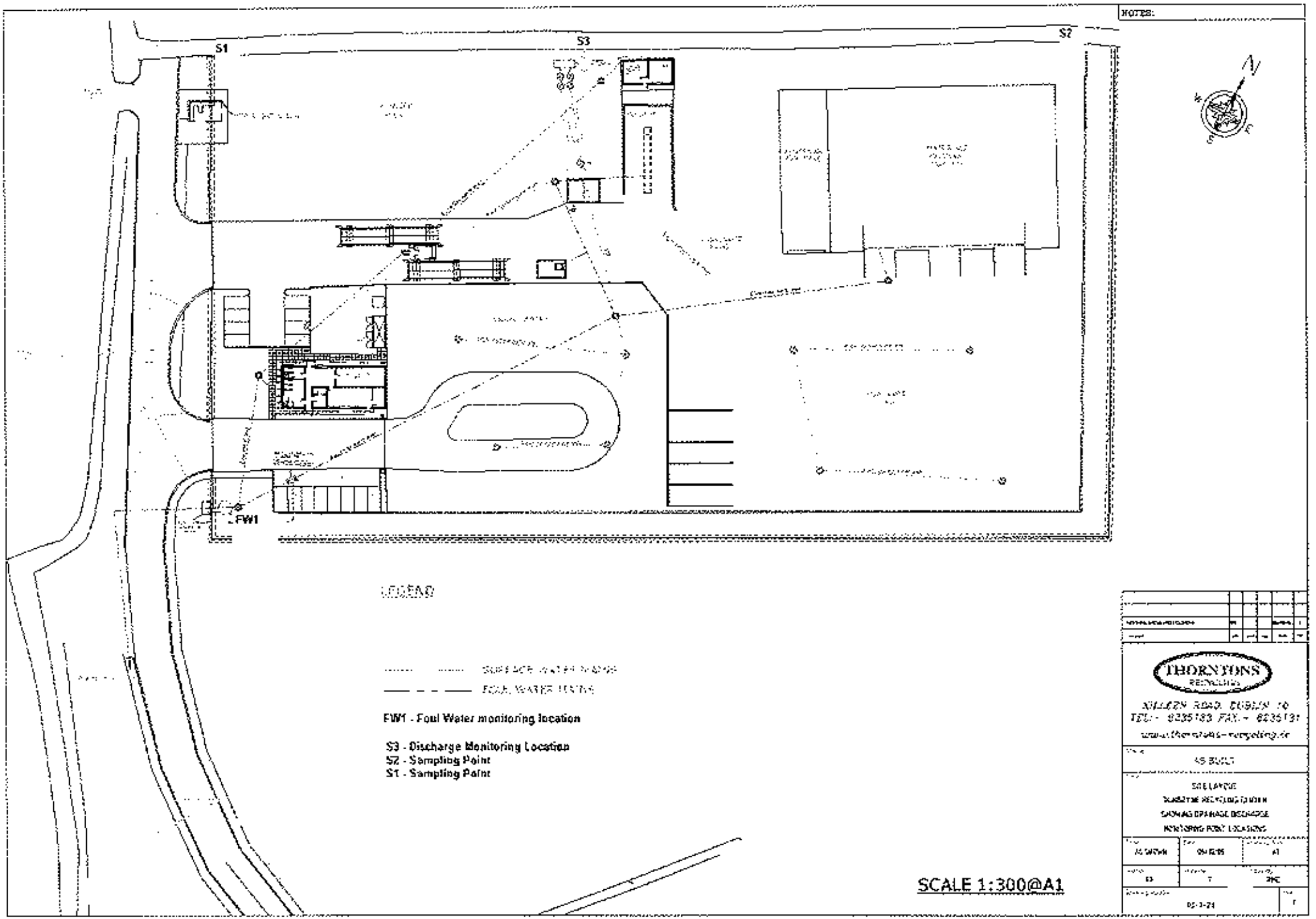
Atmospheric Pressure: 99.1 kPa
Temperature: 22 ° C
Relative Humidity: 54 %

Note: Manufacturers manual should be consulted when the calibrator is used with free field microphones which are normally supplied with sound level meters.

Checked By :

Appendix 6


NOTES:
S1
S2
S3
A1
N
LEGEND
S1 · UPSTREAM SURFACE MONITORING LOCATION - 301034.70, 242061.26
S2 · DOWNSTREAM SURFACE MONITORING LOCATION - 301186.45, 243139.55
S3 · DISCHARGE MONITORING LOCATION - 301395.48, 243083.10
SURFACE WATER MAINS
FOUL WATER MAINS
THORNTONS
RECYCLING
KILLEEN ROAD, DUBLIN 10
TEL.- 6235133 FAX.- 6235131
www.thorntons-recycling.ie
AS BUILT
SITE LAYOUT
BALLYFERMOT RECYCLING CENTER
SHOWING DRAINAGE DISCHARGE
MONITORING POINT LOCATIONS
AS SHOWN
A1
SCALE 1:300@A1



NOTES:

THORNTONS RECYCLING

KILLEEN ROAD, DUBLIN 10
TEL:- 8335183 FAX:- 8335131
www.thorntons-recycling.ie

AS BUILT

SITE LAYOUT
THORNTONS RECYCLING CENTRE
SHOWING DRAINAGE DISCHARGE
MONITORING POINT LOCATIONS

AS SHOWN	ON SIZE	A1
03	T	DMC
05-3-24		T

Appendix 7

SW Quarter 4 Results

ALcontrol Laboratories

Unit 18A
Rosemount Business Park
Ballycoolin
Dublin 11
Tel : (0035) 3188 29893

Thorntons Recycling
Killeen Road
Ballyfermot
Dublin
Dublin 10

Attention: Tommy Rogers

CERTIFICATE OF ANALYSIS

Date:	14 January 2010		
Job:	D_THORNRECY_DUB-24		
Sample Delivery Group (SDG):	091201-106	**Report No.:**	68174
Your Reference:	01/12/09		
Location:	SW Dunboyne		

A total of 3 samples was received on Tuesday December 01, 2009 and completed on Monday December 14, 2009. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

All chemical testing (unless subcontracted) is performed at ALcontrol Hawarden Laboratories.

Asbestos testing - we are not accredited for screening soil samples for asbestos fibres. We are only accredited to identify asbestos fibres in bulk material (ACM).

Approved By:

Chris Crutchley
Operations Director - Land UK & Ireland

1291
GROUP

Validated

ALcontrol Laboratories Analytical Services

SDG:	091201-106	**Customer:**	Thorntons Recycling
Job:	D_THORNRECY_DUB-24	**Attention:**	Tommy Rogers
Client Reference:	01/12/09	**Order No.:**	26356
Location:	SW Dunboyne	**Report No:**	68174

LIQUID

Results Legend

X Test

No Determination Possible

Sample ID		SW 01			SW 02			SW 03			Total
Depth (m)											
Container		1l glass bottle (G)	H2SO4 (Dublin)	PLAS SOT (D)	1l glass bottle (G)	H2SO4 (Dublin)	PLAS SOT (D)	1l glass bottle (G)	H2SO4 (Dublin)	PLAS SOT (D)	
Ammonium	All		X			X			X		003
Anions by Kone (w)	All			X			X			X	003
BOD Unfiltered	All			X			X			X	003
COD Unfiltered	All			X			X			X	003
Colour Test*	All									X	001
Dissolved Metals by ICP-MS	All			X			X			X	003
Mercury Dissolved	All	X			X			X			003
Methylene blue active substances	All									X	001
Mineral Oil C10-40 Aqueous (W)	All							X			001
pH Value	All			X			X			X	003
Phenols by HPLC (W)	All							X			001
Vol, Non Vol and Total Sus Solids	All			X			X			X	003

Validated

ALcontrol Laboratories Analytical Services

SDG:	091201-106	**Customer:**	Thorntons Recycling
Job:	D_THORNRECY_DUB-24	**Attention:**	Tommy Rogers
Client Reference:	01/12/09	**Order No.:**	26356
Location:	SW Dunboyne	**Report No:**	68174

Test Completion dates

SDG reference: 091201-106

Sample ID	Depth	Type	Ammonium	Anions by Kone (W)	BOD Unseeded	COD Unfiltered	Colour Test	Extracted Metals by ICP-MS	Mercury Dissolved	Methylene blue active substances	Mineral Oil C10-C40 (aliphatic) (W)	pH Value	Phenols by HPLC (W)	Total Non Volatile Total Dissolved Solids
SW 01		LIQUID	02/12/2009	03/12/2009	07/12/2009	02/12/2009		14/12/2009	08/12/2009			02/12/2009		01/12/2009
SW 02		LIQUID	02/12/2009	03/12/2009	07/12/2009	02/12/2009		10/12/2009	09/12/2009			02/12/2009		01/12/2009
SW 03		LIQUID	02/12/2009	03/12/2009	07/12/2009	02/12/2009	07/12/2009	14/12/2009	08/12/2009	03/12/2009	04/12/2009	02/12/2009	03/12/2009	01/12/2009

Validated

ALcontrol Laboratories Analytical Services

SDG	091201-106	**Customer:**	Thorntons Recycling
Job:	D_THORNRECY_DUB-24	**Attention:**	Tommy Rogers
Client Reference:	01/12/09	**Order No.:**	26356
Location:	SW Dunboyne	**Report No:**	68174

Results Legend
ISO17025 accredited
M mCERTS accredited
* subcontracted test
** This result relates to the % recovery of the surrogate standard added to the sample to check on the efficiency of the method. Acceptable limits for most organic methods are 70 - 130 %. The results of the individual compounds within the sample are not corrected for this recovery

Component	LOD/Units	Method	Sample Identity		SW 01		SW 02		SW 03	
			Depth (m)							
			Sample Type		Water(GW/SW)		Water(GW/SW)		Water(GW/SW)	
			Date Sampled							
			Date Received		01/12/2009		01/12/2009		01/12/2009	
			SDG Ref		091201-106		091201-106		091201-106	
			Lab Sample No.(s)		574286		574295		574315	
Colour Test*	-	SUB							6.3	
Total Suspended Solids	<6 mg/l	TM225			13		29		7	
BOD	<1 mg/l O	TM045			3.31	#	1.89	#	2.21	#
Total Monohydric Phenols (W)	<0.015 mg/l	TM262							<0.015	#
Ammoniacal Nitrogen as N	<0.2 mg/l as N	TM099			<0.2	#	<0.2	#	<0.2	#
COD	7 mg/l O	TM107			10.9	#	18.4	#	13.1	#
Arsenic Dissolved	<0.75 µg/l	TM152			<0.75	#	<0.75	#	<0.75	#
Cadmium Dissolved	<0.22 µg/l	TM152			<0.22	#	<0.22	#	<0.22	#
Chromium Dissolved	<0.7 µg/l	TM152			8.90	#	7.77	#	8.20	#
Copper Dissolved	<1.6 µg/l	TM152			3.74	#	3.08	#	2.26	#
Lead Dissolved	<0.4 µg/l	TM152			0.455	#	0.544	#	0.478	#
Nickel Dissolved	<1.5 µg/l	TM152			3.05	#	3.72	#	3.31	#
Selenium Dissolved	<1 µg/l	TM152			2.73	#	2.33	#	3.56	#
Zinc Dissolved	<5 µg/l	TM152			25.9	#	22.4	#	25.1	#
Mineral Oil (Aqueous)	<10 µg/l	TM172							078	
Mercury Dissolved	<0.01 µg/l	TM183			<0.01	#	<0.01	#	<0.01	#
Sulphate (soluble)	3 mg/l	TM184							45.6	#
Chloride	<2 mg/l	TM184							20.7	#
Nitrate as N	<0.0677 mg/l	TM184			1.88	#	1.95	#	1.69	#
Phosphate (Ortho as P)	<0.03 mg/l	TM184			<0.03	#	<0.03	#	<0.03	#
MBAS	<0.05 mg/l	TM249							<0.05	
pH value	<1 pH Units	TM256			8.25	#	7.93	#	8.15	#

Table of Results - Appendix

SDG Number : 091201-106 Client : Thorntons Recycling Client Ref : 01/12/09

REPORT KEY

NDP	No Determination Possible	ISO	ISO 17025 Accredited	S	Subcontracted Test	M	MCERTS Accredited
NFD	No Fibres Detected	PFD	Possible Fibres Detected	R	Result previously reported (incremental reports only)	EC	Equivalent Carbon (Aromatics C8-C35)

Note: Method detection limits are not always achievable due to various circumstances beyond our control

Method No	Reference	Description	Status
SUB		Subcontracted Test	
TM079	Method 2540G, AWWA/APHA, 20th Ed., 1999	Determination of non volatile solids in waters	
TM045	MEWAM BOD5 2nd Ed.HMSO 1988 / Method 5210B, AWWA/APHA, 20th Ed., 1999; SCA Blue Book 136	Determination of BOD (ATU) Filtered by Oxygen Meter on liquids	
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)	
TM062	MEWAM BOOK 124 1988.HMSO/ Method 17.7, Second Site property, March 2003	Determination of Phenolic compounds by HPLC with electro-chemical detection	
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Konic Analyser	
TM107	ISO 6060-1989	Determination of Chemical Oxygen Demand using COD Dr Lange Kit	
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS	
TM172	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	EPH in Waters	
TM183	BS EN 13506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry	
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Konic Spectrophotometric Analysers	
TM249	Standard Methods for the Examination of Water and Wastewater. 20th Edition. 1998	The Determination of Methylene Blue Active Substances in Waters	
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter	

* Applies to Solid samples only. DRY indicates samples have been dried at 35°C NA = not applicable.

NORTHUMBRIAN WATER
Scientific Services

Northumberland Dock Road, Wallsend, Tyne & Wear, NE28 0QD
Tel: 0191 2968500 Fax: 0191 2968560 www.nw-ss.co.uk

Analytical Report

1181

Client: Dianne Whittlestone
Alcontrol

Address:

Contract Ref.: ALCONTROL-4025
Contract Description: Colour Analysis
Project Manager: Jeffrey Stubbs

Postcode:

Lab No.: 2010174
Date & Time Taken: 01/12/09 00:00
SDG 091201-106
Collected From:

Sample Name: 678490
Date Received: 03/12/09
Date Started: 03/12/09

PARAMETER	RESULT	METHOD	SITE
colour	6.3 mg/l Pt/Co scale	HY-201	HY

Authorised by: Richard Stott
Team Leader

Under the authority of Ian Barnabas:
Laboratory Manager

This report was compiled by the Laboratory Optimisation Department
In the event of a query please contact them on the above telephone number.

Date: 07/12/09

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation

Results relate only to the items tested

Tests marked * in this report are NOT included in the UKAS accreditation schedule for this laboratory.

Tests marked HN analysed at Howdon Laboratory, Northumberland Dock Road, Wallsend, Tyne & Wear, NE28 0QD
Tests marked HY analysed at Horsley Laboratory, Horsley, Newcastle upon Tyne NE15 0PE
Tests marked CD analysed at Chelmsford Laboratory, Middlemead,South Hanningfield,Chelmsford,Essex CM3 8HS

APPENDIX

APPENDIX

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA Leach tests, flash point, ammonium as NH_4 by the BRE method, VOC TICS, SVOC TICS, TOF-MS SCAN/SEARCH and TOF-MS TICS.
2. Samples will be run in duplicate upon request, but an additional charge may be incurred
3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for both soil jars, tubs and volatile jars. All waters and vials will be discarded 10 days after the analysis is completed (e-mailed). All material removed during an asbestos containing material screen and analysed for the presence of asbestos will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received and stored but not analysed.
4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.
5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.
6. When requested, the individual sub sample scheduled will be screened in house for the presence of large asbestos containing material fragments/pieces. If no asbestos containing material is found this will be reported as 'no asbestos containing material detected' If asbestos containing material is detected it will be removed and analysed by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If asbestos containing material is present no further analyses will be undertaken. At no point is the fibre content of the soil sample determined.
7. If no separate volatile sample is supplied by the client, the integrity of the data may be compromised if the laboratory is required to create a sub-sample from the bulk sample – similarly, if a headspace or sediment is present in the volatile sample. This will be flagged up as an Invalid VOC on the test schedule or recorded on the log sheet.
8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.
9. NDP – No determination possible due to insufficient/unsuitable sample.
10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals – total metals must be requested separately.
11. A table containing the date of analysis for each parameter is not routinely included with the report, but is available upon request.
12. **Surrogate recoveries** – Most of our organic methods include surrogates, the recovery of which is monitored and reported. For EPH, MO, PAH, GRO and VOCs on soils the result is not surrogate corrected, but a percentage recovery is quoted.
13. **Product analyses** – Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.
14. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethylphenol, 3,5 Dimethylphenol)
15. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 14).
16. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.
17. Our MCERTS accreditation for PAHs by GCMS applies to all product types apart from Kerosene, where naphthalene only is not accredited.
18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.
19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.
20. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.
21. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.
22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials – whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.
23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C4 – C10 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

LIQUID MATRICES EXTRACTION SUMMARY

ANALYSIS	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
PAH MS	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC MS
EPH	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FID
EPH CWG	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FID
MINERAL OIL	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FID
PCB 7 CONGENERS	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC MS
PCB TOTAL	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GS MS
SVOC	DCM	LIQUID/LIQUID SHAKEN SVOC	GC MS
FREE SULPHUR	DCM	SOLID PHASE EXTRACTION	HPLC
PEST OCP/OPP	DCM/EA	SOLID PHASE EXTRACTION	GC MS
TRIAZINE HERBS	DCM/EA	SOLID PHASE EXTRACTION	GC MS
PHENOLS MS	DCM	SOLID PHASE EXTRACTION	GC MS
TPH by INFRA RED (IR)	TCE	LIQUID/LIQUID EXTRACTION	HPLC
MINERAL OIL by IR	TCE	LIQUID/LIQUID EXTRACTION	HPLC
SAPONIFIABLE	TCE	LIQUID/LIQUID EXTRACTION	HPLC
UNSAPONIFIABLE	TCE	LIQUID/LIQUID EXTRACTION	HPLC
GLYCOLS	DCM	LIQUID/LIQUID EXTRACTION	EZ FLASH

SOLID MATRICES EXTRACTION SUMMARY

ANALYSIS	D/C OR WET	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
Solvent Extractable Matter	D&C	DCM	SOXTHERM	GRAVIMETRIC
Cyclohexane Ext. Matter	D&C	CYCLOHEXANE	SOXTHERM	GRAVIMETRIC
Thin Layer Chromatography	D&C	DCM	SOXTHERM	IATROSCAN
Elemental Sulphur	D&C	DCM	SOXTHERM	HPLC
Phenols by GCMS	WET	DCM	SOXTHERM	GC-MS
Herbicides	D&C	HEXANE:ACETONE	SOXTHERM	GC-MS
Pesticides	D&C	HEXANE:ACETONE	SOXTHERM	GC-MS
EPH (DRO)	D&C	HEXANE:ACETONE	END OVER END	GC-FID
EPH (Min oil)	D&C	HEXANE:ACETONE	END OVER END	GC-FID
EPH (Cleaned up)	D&C	HEXANE:ACETONE	END OVER END	GC-FID
EPH CWG by GC	D&C	HEXANE:ACETONE	END OVER END	GC-FID
PCB tot / PCB con	D&C	HEXANE:ACETONE	END OVER END	GC-MS
Polyaromatic Hydrocarbons (MS)	WET	HEXANE:ACETONE	Microwave TM216	GC-MS
C8-C40 (C6-C40)EZ Flash	WET	HEXANE:ACETONE	SHAKER	GC-EZ
Polyaromatic Hydrocarbons Rapid GC	WET	HEXANE:ACETONE	SHAKER	GC-EZ
Semi Volatile Organic Compounds	WET	DCM:ACETONE	SONICATE	GC-MS

Identification of Asbestos in Bulk Materials

The results for asbestos identification for soil samples are obtained from possible Asbestos Containing Material, removed during the 'Screening of soils for Asbestos Containing Materials', which have been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Visual Estimation Of Fibre Content.

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: -

Trace – Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in MDHS 100.

The identification of asbestos containing materials falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

FW Quarter 4 Results

ALcontrol Laboratories

Unit 18A
Rosemount Business Park
Ballycoolin
Dublin 11
Tel : (0035) 3188 29893

Thorntons Recycling
Kilbeen Road
Ballyfermot
Dublin
Dublin 10

Attention: David Duff

CERTIFICATE OF ANALYSIS

Date:	14 December 2009		
Job:	D_THORNRECY_DUB-6		
Sample Delivery Group (SDG):	091201-94	**Report No.:**	67418
Your Reference:	FW2		
Location:			

One sample was received on Tuesday December 01, 2009 and completed on Thursday December 10, 2009. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

All chemical testing (unless subcontracted) is performed at ALcontrol Hawarden Laboratories

Asbestos testing - we are not accredited for screening soil samples for asbestos fibres We are only accredited to identify asbestos fibres in bulk material (ACM).

Approved By:

Chris Crutchley
Operations Director - Land UK & Ireland

1291
GROUP

Validated

ALcontrol Laboratories Analytical Services

SDG:	091201-94	**Customer:**	Thorntons Recycling
Job:	D_THORNRECY_DUB-6	**Attention:**	David Duff
Client Reference:	FW2	**Order No.:**	
Location:		**Report No:**	67418

LIQUID

Results Legend

X Test

No Determination Possible

Sample ID		FW01			Totals
Depth (m)					
Container		1l glass bottle (D)	H2SO4 (Dein)	PLAS BOT (D)	
Ammonium	All		X		0 1
Anions by Kone (w)	All			X	0 1
BOD Unfiltered	All			X	0 1
COD Unfiltered	All			X	0 1
Colour Test*	All			X	0 1
Dissolved Metals by ICP-MS	All			X	0 1
EPH (DRO) (C10-C40) Aqueous (W)	All	X			0 1
Mercury Dissolved	All	X			0 1
Methylene blue active substances	All			X	0 1
pH Value	All			X	0 1
Phenols by HPLC (W)	All	X			0 1
Total Metals by ICP-MS	All			X	0 1
Vol, Non Vol and Total Sus Solids	All			X	0 1

14/12/2009, 16:31:21

Validated

ALcontrol Laboratories Analytical Services

SDG:	091201-94	**Customer:**	Thorntons Recycling
Job:	D_THORNRECY_DUB-6	**Attention:**	David Duff
Client Reference:	FW2	**Order No.:**	
Location:		**Report No:**	67418

Test Completion dates

SDG reference: 091201-94

Sample ID	Depth	Type	Ammonium	Anions by Kone (w)	BOD Unfiltered	COD Unfiltered	Colour Test*	Dissolved Metals by ICP-MS	EPH (SRO) (C10-C40) Aqueous (W)	Mercury Dissolved	Methylene blue active substances	pH Value	Phenols by HPLC (W)	Total Metals by ICP-MS	Vol, Non Vol and Total Sus Solids
FW 01		LIQUID	03/12/2009	02/12/2009	07/12/2009	02/12/2009	07/12/2009	10/12/2009	10/12/2009	10/12/2009	07/12/2009	02/12/2009	03/12/2009	04/12/2009	05/12/2009

Validated

ALcontrol Laboratories Analytical Services

SDG	091201-94	**Customer:**	Thorntons Recycling
Job:	D_THORNRECY_DUB-6	**Attention:**	David Duff
Client Reference:	FW2	**Order No.:**	
Location:		**Report No:**	67416

Results Legend
ISO17025 accredited
M mCERTS accredited
' subcontracted test.
** The result relates to the % recovery of the surrogate standard added to the sample to check on the efficiency of the method. Acceptable limits for most organic methods are 70 - 130 %. The results of the individual compounds within the samples are not corrected for this recovery.

Component	LOD/Units	Method	Sample Identity	FW01	
			Depth (m)		
			Sample Type	Water(GW/SW)	
			Date Sampled		
			Date Received	01/12/2009	
			SDG Ref	091201-94	
			Lab Sample No.(s)	673075	
Colour Test'	-	SUB		7.2	
Total Suspended Solids	<6 mg/l	TM029		9 00	
BOD	<1 mg/l O	TM045		8 97	#
Total Monohydric Phenols (W	<0 015 mg/l	TM062		<0 0150	#
Ammoniacal Nitrogen as N	<0 2 mg/l as N	TM099		0 627	#
COD	7 mg/l O	TM107		57 5	#
Arsenic Dissolved	<0 75 µg/l	TM152		29 3	#
Cadmium Dissolved	<0 22 µg/l	TM152		<0 220	#
Chromium Dissolved	<0.7 µg/l	TM152		6 19	#
Copper Dissolved	<1.6 µg/l	TM152		4 78	#
Lead Dissolved	<0 4 µg/l	TM152		2 26	#
Nickel Dissolved	<1 5 µg/l	TM152		3 68	#
Phosphorus Dissolved	<105 µg/l	TM152		153	#
Selenium Dissolved	<1 µg/l	TM152		4 76	#
Zinc Dissolved	<5 µg/l	TM152		98 5	#
EPH Range Organics (C10 - C40) (Aqueous)	<10 µg/l	TM172		362	#
Mercury Dissolved	<0 01 µg/l	TM183		<0 0100	#
Sulphate (soluble)	3 mg/l	TM184		211	#
Chloride	<2 mg/l	TM184		217	#
Nitrite	<0.05 mg/l	TM184		0 0690	#
Phosphorus (Unfiltered)	<15 3 µg/l	TM191		420	
MDAS	<0 05 mg/l	TM249		0.0947	
pH value	<1.00 pH Units	TM256		8 03	#

NORTHUMBRIAN WATER
Scientific Services

Northumberland Dock Road, Wallsend, Tyne & Wear, NE28 0QD
Tel: 0191 2968500 Fax: 0191 2968560 www.nw-ss.co.uk

Analytical Report

1181

Client: Dianne Whittlestone
Alcontrol

Address:

Contract Ref.: ALCONTROL-4025
Contract Description: Colour Analysis
Project Manager: Jeffrey Stubbs

Postcode:

Lab No.: 2010175
Date & Time Taken: 01/12/09 00:00
SDG 091201-94
Collected From:

Sample Name: 676791
Date Received: 03/12/09
Date Started: 03/12/09

PARAMETER	RESULT	METHOD	SITE
colour	7.2 mg/l Pt/Co scale	HY-201	HY

Authorised by: Richard Stott
Team Leader

Under the authority of Ian Barnabas:
Laboratory Manager

This report was compiled by the Laboratory Optimisation Department
In the event of a query please contact them on the above telephone number.

Date: 07/12/09

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation

Results relate only to the items tested

Tests marked * in this report are NOT included in the UKAS accreditation schedule for this laboratory.

Tests marked HN analysed at Howdon Laboratory, Northumberland Dock Road, Wallsend, Tyne & Wear, NE28 0QD
Tests marked HY analysed at Horsley Laboratory, Horsley, Newcastle upon Tyne NE15 0PE
Tests marked CD analysed at Chelmsford Laboratory, Middlemead,South Hanningfield,Chelmsford,Essex CM3 8HS

APPENDIX

APPENDIX

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following. NRA Leach tests, flash point, ammonium as NH_4 by the BRE method, VOC TICS, SVOC TICS, TOF-MS SCAN/SEARCH and TOF-MS TICS.
2. Samples will be run in duplicate upon request, but an additional charge may be incurred.
3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for both soil jars, tubs and volatile jars. All waters and vials will be discarded 10 days after the analysis is completed (e-mailed). All material removed during an asbestos containing material screen and analysed for the presence of asbestos will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received and stored but not analysed.
4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.
5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.
6. When requested, the individual sub sample scheduled will be screened in house for the presence of large asbestos containing material fragments/pieces. If no asbestos containing material is found this will be reported as 'no asbestos containing material detected'. If asbestos containing material is detected it will be removed and analysed by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If asbestos containing material is present no further analysis will be undertaken. At no point is the fibre content of the soil sample determined.
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8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.
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11. A table containing the date of analysis for each parameter is not routinely included with the report, but is available upon request.
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13. **Product analyses** – Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.
14. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethylphenol, 3,5 Dimethylphenol).
15. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 14).
16. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.
17. Our MCERTS accreditation for PAHs by GCMS applies to all product types apart from Kerosene, where naphthalene only is not accredited.
18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.
19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.
20. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.
21. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.
22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials – whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.
23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C4 – C10 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

LIQUID MATRICES EXTRACTION SUMMARY

ANALYSIS	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
PAH MS	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC MS
EPH	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FID
EPH CWG	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FID
MINERAL OIL	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FID
PCB 7 CONGENERS	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC MS
PCB TOTAL	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GS MS
SVOC	DCM	LIQUID/LIQUID SHAKEN SVOC	GC MS
FREE SULPHUR	DCM	SOLID PHASE EXTRACTION	HPLC
PEST OCP/OPP	DCM/EA	SOLID PHASE EXTRACTION	GC MS
TRIAZINE HERBS	DCM/EA	SOLID PHASE EXTRACTION	GC MS
PHENOLS MS	DCM	SOLID PHASE EXTRACTION	GC MS
TPH by INFRA RED (IR)	TCE	LIQUID/LIQUID EXTRACTION	HPLC
MINERAL OIL by IR	TCE	LIQUID/LIQUID EXTRACTION	HPLC
SAPONIFIABLE	TCE	LIQUID/LIQUID EXTRACTION	HPLC
UNSAPONIFIABLE	TCE	LIQUID/LIQUID EXTRACTION	HPLC
GLYCOLS	DCM	LIQUID/LIQUID EXTRACTION	EZ FLASH

SOLID MATRICES EXTRACTION SUMMARY

ANALYSIS	D/C OR WET	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
Solvent Extractable Matter	D&C	DCM	SOXTHERM	GRAVIMETRIC
Cyclohexane Ext. Matter	D&C	CYCLOHEXANE	SOXTHERM	GRAVIMETRIC
Thin Layer Chromatography	D&C	DCM	SOXTHERM	IATROSCAN
Elemental Sulphur	D&C	DCM	SOXTHERM	HPLC
Phenols by GCMS	WET	DCM	SOXTHERM	GC-MS
Herbicides	D&C	HEXANE:ACETONE	SOXTHERM	GC-MS
Pesticides	D&C	HEXANE:ACETONE	SOXTHERM	GC-MS
EPH (DRO)	D&C	HEXANE:ACETONE	END OVER END	GC-FID
EPH (Min oil)	D&C	HEXANE:ACETONE	END OVER END	GC-FID
EPH (Cleaned up)	D&C	HEXANE:ACETONE	END OVER END	GC-FID
EPH CWG by GC	D&C	HEXANE:ACETONE	END OVER END	GC-FID
PCB tot / PCB con	D&C	HEXANE:ACETONE	END OVER END	GC-MS
Polyaromatic Hydrocarbons (MS)	WET	HEXANE:ACETONE	Microwave TM218.	GC-MS
C8-C40 (C6-C40)EZ Flash	WET	HEXANE:ACETONE	SHAKER	GC-EZ
Polyaromatic Hydrocarbons Rapid GC	WET	HEXANE:ACETONE	SHAKER	GC-EZ
Semi Volatile Organic Compounds	WET	DCM:ACETONE	SONICATE	GC-MS

Identification of Asbestos in Bulk Materials

The results for asbestos identification for soil samples are obtained from possible Asbestos Containing Material, removed during the 'Screening of soils for Asbestos Containing Materials', which have been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Visual Estimation Of Fibre Content.

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: -

Trace – Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in MDHS 100.

The identification of asbestos containing materials falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Appendix 8

PM03- F01 Management Programme 2009

COMPLETED	DELAYED CARRY FORWARD TO 2010	ON HOLD

Ref Number	Date	Type	Objective and Target	Location	Responsibility	Method	Time Frame	Status
ENVIRONMENTAL								
EP 01	Jan '09	Environmental	Site Expansion to 40,000 tonnes	Kilmainham	TMCD/MT	1 Meeting with EPA 2 Meeting with MCC re planning 3 Appoint consultants 4 Lodge with EPA and MCC	Planning - 01/07/2009 Licence - TBC after RFI MCC	Carry forward 2010
EP 02	Jan-09	Environmental	Landscape Plan to be completed at Kilmainhamwood Compost re conditions of the licence	Kilmainham	TMCD	1 Kilmainhamwood landscape plan to be completed as part of the new expansion	Dec-09	Carry forward 2010
EP 03	Jan '09	Environmental	Upgrade of odour system - investigate possibility of scrubber etc	Kilmainham	TMCD	1 Quotes for consultants and assess same 2 Appoint Consultant 3 Tender out the installation of technology 4 Assess options available 5. Installation	Dec-09	Carry forward 2010
EP 04	Feb-09	Environmental	Production report for Eve Sq recycling line	Killeen road	DD	1 Assess inputs 2 Design spreadsheet for operators to feed in to 3 Output will be an accurate processing cost per tonne	Mar-09	Completed - JS /TMCD inputting data, DD monitoring ongoing
EP 05	Mar-09	Environmental	Yard scraper for the dry recycling recyclates storage area	Killeen road	DD	1 Design scraper for the system Approve design with operations and maintenance dept 3 Build scraper 4 Implement scraper, test run check & amend if necessary	Mar-09	Completed, working and no amendments required - Closed
EP 06	Mar-09	Environmental	ESB Energy monitoring system	Killeen road	DD	1 Liaise with Software company to install system and give demonstration 2 Review system after week one and amend if necessary 4 Change the system to record the data over 24 hours 5 Set up a monthly template for logging the daily data for ease of comparison 6. Insert the daily data into the Production reports for the three buildings	Mar-09	Completed, System working and currently being tracked ongoing
EP 07	Apr-09	Environmental	Energy Report for Killeen Road- regarding the ESB usage	Killeen road	DD	1 Walk the site and record light fixtures and their daily usage 2 Prepare electrical maps to show which lights are connected to which switches 3 Review the past ESB bills and compare usage with the on Site energy monitoring system 4 Create a report detailing current energy usage and propose changes to save energy Review system after one year	Dec-09	Carried forward as new energy monitoring project in place for 2010
EP 08	Apr-09	Environmental	Review recycling building operation and see whether to invest in new equipment	Killeen road	DD/JS	1 Review current plant equipment and capacity 2. Outline areas for new equipment to be located 3. Identify other equipment that would segregate recyclates 4. Determine costs benefits of new equipment vs stay with the same system	Nov-09	Production report first step to assess feasibility of current equipment for processing stock. Completed
EP 09	Feb-09	Environmental	Repak Revenue - waste characterisation on MDR	Company	MF/DD	1 Contact repak to confirm details for characterisation survey 2. Obtain 3 quotes from consultants 3. Carry out survey's 4. Finalise reports and distribute	Jun-09	Completed - Reports submitted to Repak and new claim figures being used

EP 10	Feb-09	Environmental	Glass collection service - develop business plan	Company	MF	1. Analyse the sources of glass from commercial and domestic markets. 2. Quantify potential tonnages for collection. 3. Source an end destination for collected material. 4. Source a location for bulking collected materia 5. Investigate the purchase of a specifically designed collection vehicle. 6. Create a P or L for all aspects		Aug-09	Completed
EP 11	Feb/09	Environmental	RDF - Business plan and potential outlets	Company	MF	1. Sample current proposed RDF material and get it analysed. 2. Shred proposed RDF and get it analysed. 4 Source potential outlets for RDF and provide with samples of RDF material and Analytical results. 5. Project tonnages of material per annum and secure outlets		Dec-09	Completed - A number of potential outlets have being sourced and are in negotiations, shredder in place and contract with Lagan Cement. Closed early August 2009
EP 12	Jul/09	Environmental	RDF - Waste Characterisation Study so can claim repak subsidy	Company	MF	1. Quote from Consultants 2. Discuss with Repak how best to do as study involves 90 tonnes of material to be sampled and processed 3. Organise dates and get certificates of Lagan to enable us to claim subsidy		Sep-09	Completed claim with Repak Commenced September 2009
EP 13	Apr/09	Environmental	Create a template for producing the quarterly type reports for the ELV	ELV	DD	1. Review the legislation. 2. Review the procedure used in 2008 and amend to make it simple and more efficient		Apr-09	Reports sent to DCC template now in place on Y Drive ELV Folder Closed
EP 14	Jan-09	Environmental	Covering of new diesel bund	[illegible] Road	DD	1. Cover with appropriate material diesel bund on CID 1 to which holds the generator		Dec-09	WIP Quotes being obtained, DD to review aspects and determine alternative methods of achieving same goal. Not an issue on site not raised by EPA
EP 15	Mar/09	Environmental	Review ELV permit	ELV	DD	1. Carry out a review. 2. Submit to council		May 09	Review submitted 50 days before current permit expires. Received new permit 31-03-09
EP 16	Feb/09	Environmental	Install height restriction barrier in civic amenity site to avoid commercial activity, area unmanned	Dunboyne	TR	1. Carry out a feasibility study on the of a height restriction barrier to control the entrance of commercial customers to use the civic amenity 2. Install barrier		Mar-09	Completed
EP 17	Mar/09	Environmental	Environmental Procedures for waste acceptance for the shredding facility	Shredding	MF	1. Arrange meeting with shredding facility manager to draw up flow and design procedures in relation to operations.		Apr 09	Completed - Adequate Environmental procedures now in place based on external security consultants advice
EP 18	June/09	Environmental	Security Acceptance form to be designed re advice of security consultant	Shredding	MF	1. MF & NG to assess how new form will work. 2. Draft forwarded to security consultant 3. New proof send for printing		Sept 09	Completed new forms now in use based on advice from security consultant
EP 19	Mar/09	Environmental	Office Revamp - Rearrange all environmental folders. Archive old files	PDM	MF	1. Site visit check folders 2. Revamp office layout to include site maps		Jun-09	Completed May 2009, new noticeboard, folders amalgamated etc - Closed
EP 20	Mar/09	Environmental	WEEE/ Oil Drums in CA Site - Storage study	Dunboyne	TR	1. Investigate storage solutions for WEEE i.e. Canopy/container etc. 2. Oil drums remove to maintenance and minimise in CA 3. Cost Analysis		Dec-09	Completed WEEE not an issue in last EPA audit. Oil drums removed from CA site
EP 21	Aug '09	Environmental	Inspection/Sampling Chamber to be created on Surface Water discharge as S3	Dunboyne	TR	1. TR to investigate best sampling method to ensure we obtain a representative sample 2. Purchase additional pipe/supplies 3. Test and ensure works		Nov-09	Carried forward 2010

EP 22	July '09	Environmental	Unmanned Weighbridge barrier system in Dunboyne	Dunboyne	DD	1. DD to obtain quotes and pick suitable supplier 2. DD to liase with WMS and pursue fitment on complete on 3. DD to train staff and handover to transport 4. Handover	Oct '09	Completed - Training Manual completed and passed to transport
EP 23		Environmental	Lighting in Kilmainhamwood / Head Office	Kilmainhamwood / Head Office	TMCD/MF/TR	1. Kilmainhamwood clean all lights internally and any bulbs to be replaced 2. Head Office - Remove sensors re around the atrium and adjust lighting switches	Dec '09	Completed Kilmainhamwood - Head Office in progress. Completed before ISO audit in Nov
EP 24	Aug '09	Environmental	Mixed Papers - Waste Characterisation Study to claim from repak subsidy for cardboard content greater than current claim of 9%	Killeen road	MF	1. Obtain from FTCO 2. Do study of 25 bales over 5 days and a one tonne study 3. Ascertain how much cardboard in the representative sample 4. Report to Repak and claim	Nov 09	Completed
EP 25	Aug '09	Environmental	Dunboyne site procedures to be reviewed in light of the installation of the new unmanned weighbridge system	Dunboyne	MF	1. MF to review waste acceptance procedure on site and make amends to suit new system on site	Nov-09	Completed and circulated by e-mail to management required
EP 26	May '09	Environmental	Shredding - Monitor Resource Efficiency on Sites	All Sites	DD	1. Get Bills and log monthly resource consumption 2. Identify trends and plot graphs 3. Ensure we are covered in the aspects register for shredding facility 4. Track fuel usage on all sites and compare with tonnages	Nov-09	Completed. DD compiled and statistics are located within the KPI folder in the IMS. Resource information tracked against Tonnage where possible

EHS GENERIC

Mreps	Jan-09	All	Update all EHS documents to include shredding facility	All Sites	Mreps	1. Each mrep to identify procedures which need to be amended and forms to be updated	May-09	Completed - MF
TR/MF	June '09	EHS	Review the skills analysis Matrix re comments from last GE audit	All Sites	TR and MF	1. Assess possibility of incorporating all training into TMS 2. Input all training completed form Matrix into TMS 3. Agree a flagging system with TMS to highlight competences of different jobs	Dec-09	Completed - transfer all of Skills Matrix into TMS, each individual personnel file being assessed for completion

PM03- F01 Management Programme 2010

COMPLETED | CARRY FORWARD FROM 2009 | ON HOLD

Ref Number	Date	Type	Objective and Target	Location	Responsibility	Method	Time Frame	Status
ENVIRONMENTAL								
EP 01	Jan '09	Environmental	Site Expansion to 40,000 tonnes	Kilmainham	TMCD/MF	1. Meeting with EPA 2. Meeting with MCC re planning 3. Appoint consultants 4. Lodge with EPA and MCC	Dec-10	Started - Work in Progress. Planning received Feb '10. ABP appeal to be completed. Licence lodge end May '10.
EP 02	Jan-09	Environmental	Landscape Plan to be completed at Kilmainhamwood Compost re conditions of the planning	Kilmainham	TMCD	1. Kilmainhamwood landscape plan to be completed as part of the new expansion	Dec-10	Not Started - Plans previously drawn up from inital planning, awaiting new planning conditions from Meath CC before commence the landscape plan
EP 03	Jan '09	Environmental	Upgrade of odour system - Investigate possibility of scrubber etc	Kilmainham	TMCD	1. Quotes for consultants and assess same 2. Appoint Consultant 3. Tender out the installation of technology 4. Assess options available 5. Installation	Jul-10	Smeadeam appointed work to commence end May '10 Works to complete Quarter 3.
EP 04	Jan '10	Environmental	PDM - Permit renewal due in August 2010, council to be informed by May 2010 on intention to renew. Feasibility study to be carried out	PDM	MK	1. Complete feasibility study on PDM 2. Look at alternatives	May '10	Started
EP 05	Jan '10	Environmental	Anerobic Digestion Study	Kilmainhamwd	MK/TMCD	1. Obtain Quotes 2. Carry out Feasibility Study	Dec'10	Started. TMCD project Manager Team internally appointed. Final report end April '10
EP 06	Jan '10	Environmental	Energy Systems	All Sites	MK/DD	1. Energy study to see if we can reduce resource consumption on all sites	Quarterly Review	Started Kilmainhamwood, Head Office and Killeen Road. Team appointed internally Jan 10. DD appointed as Project Manager
EP 07	Mar-10	Environmental	Energy Alternative	All Sites	MK	1. SRF use 2. Organic fines use power production	Jul-10	WIP
EP 08	Jan '10	Environmental	SRF Quality Development - New waste additions. SRF Additional Outlet Feasibility on Pelletising	Killeen road	MK/DD	1. Asses developments of additional material to the line and new additions monitor quality and report. Chloride to be monitored closely on material	Dec'10	Started - Training to be carried out on quality with ground staff. Review local and European Markets for outlets
EP 09	Jan '10	Environmental	SRF Storage Facility - COR/Permit	New Facility	MK/DD	1. Apply to SDCC for COR/Permit for storage building when found 2. Storage for SRF materials in event of breakdowns, contingency plan	May'10	Lodged with SDCC awaiting permit from SDCC
EP 10	Jan '10	Environmental	Waste Acceptance Procedures - Training Refresher for office staff	All Sites	MK/DD Killeen Road	1. Organise groups for tours of Killeen Road 2. Training to incoporate the importance of attention to detail, show staff how errors affect business and end up as credit notes	Dec'10	Draft presentation started
EP 11	Jan '10	Environmental	ELV Expansion on Permit	ELV	DD/MK	1 Await decision from Garda contract	Dec'10	WIP
EP 12	Jan '10	Environmental	Fleet audit	All Sites	DD/MK	1 Review paperwork in trucks in line with new national permit, received on the 29th March 2010	Jan-10	WIP

EP 13	Jan '10	Environmental	Environmental Drawings - Update all required	All Sites	Team	1. Hire in Draughtsperson to update all drawings	May-10	Started 29th March 2010
EP 14	Jan '10	Environmental	EHS Newsletter	All Sites	Team	1 New newsletter to be developed for website, generic	Dec-10	WIP
EP 15	Apr-10	Environmental	Food Regs Newsletter	All Sites	Team	1 Specific mailshot to food producing customers e-mail	Apr-10	WIP
EP 16	Jan '10	Environmental	Repak Studies	Killeen road	MK/DD	1 Repak refresher Studies required later end of 2010	Dec'10	Not Started
EP 17	Aug '09	Environmental	Inspection/Sampling Chamber to be created on Surface Water discharge at S3	Dunboyne	TR	1. TR to investigate best sampling method to ensure we obtain a representative sample 2. Purchase additional pots/supplies 3. Test and ensure works	Mar-10	Completed
HEALTH AND SAFETY								
H&S 01	Dec-08	H&S	Ongoing site training for all Thorntons Recycling Personnel (Induction Training,Manual Handling, etc)	All Sites	H&S Manager	1. Draft list & agree training dates for all sites 2. Schedule dates for same 3. Update and review quarterly	Dec'10	WIP
H&S 02	Jan'09	H&S	Annual H & S Review submit report to management	All Sites	H&S Manager	1. Report to be completed summarising all aspects of H & S system for 2009	Mar-10	Completed 26/03/10
H&S 03	April'09	H&S	Occupational Noise Monitoring All sites	All Sites	H&S Manager	1. Determine Sites to be carried out 2. Carried out TR 3. Results forwarded to Directors at managment meeting	Dec'10	All sites
H&S 04	April'09	H&S	Occupational Dust Monitoring All sites	All Sites	H&S Manager	1. Determine Sites to be carried out 2. Carried out TR 3. Results forwarded to Directors at managment meeting	Dec'10	All sites
H&S 05	May '09	H&S	Accident and Incident reporting forms to be reviewed and redesigned due to too much information which may not be necessary for HR application statistic	All Sites	H&S Manager	1. Template to be designed. 2. Quote off stationary for printing	Apr-10	All sites
H&S 06	July '09	H&S	Contractors list extensive and alot not being used. To review and update	All Sites	H&S Manager	1. TR to review the PM16 procedure and existing approved and unapproved contractors to see if still valid for use by TR	Dec'10	Started feb 2010, letters sent to contractors Feb 2010. 15 reponses by end of March 2010.
H&S 07	Oct'09	H&S	Investigate the possibility of Thermal imaging / electrical testing on all possible heat sources	All Sites	H&S Manager	Liase with Maintenance Manager 1. Identify & List all items. 2. Record & log all factual information	31st Oct'10	Consultants quotation finalised in November 09 and approval by Maintenance Manager
H&S 08	Aug '09	H&S	Design SOP's in conjuction with operations, maintenance and transport	All Sites	H & S Manager with other managers	1. Meetings to discuss to identify areas in need of SOP's 2. List same 3. Review 4. Roll out in suitable stages to all concerned	2009/2010	All sites WIP Started . Meetings held head office with GS/TM/JS/CS/PT/TR. Ops to implement SOPs 1 - 11 before any further
H&S 09	Mar-10	H&S	Update TMS system - Employee Files - with Toolbox talks given in 2009	All Sites	H & S Manager with other managers	List of attendees identified - Update system with Terry	Apr-10	Started end March 2010

Appendix 9

FBD Brokers

Corporate Insurance Brokers
& Risk Management Consultancy

FBD House
Blackhall
Dublin 12
Ireland

T: +353 1 409 3201
F: +353 1 478 3108 / 450 7246
www.fbdbrokers.ie

Re: ***Padraig Thornton Waste Disposal Ltd and Thornton Recycling Centre Ltd***

To Whom It May Concern:

This is to confirm that we act as Insurance Brokers for the above client and that we currently hold the following covers in place on their behalf:-

Employers Liability:
Covering the legal liability of the Insured to employees for death or bodily injury or disease arising out of and in the course of their employment by the Insured in the business **(Waste Collection, Recycling and Disposal including Electrical Waste and End of Life Vehicles, Composting, Maintenance of Own Vehicles and Contractor's Vehicles Used on the Business of the Insured, Bin Repair and Property Owners)** during the period of Insurance.

Insurers: FBD plc
Policy No.: 00433053/04/01
Renewal Date: 1st July 2010

Limit of Indemnity:
€13,000,000 any one occurrence inclusive of all costs and expenses.

Public / Products Liability:
Covering the legal liability of the Insured for accidental bodily injury to third party persons or accidental damage to third party material property arising in connection with the business and subject to the limit of indemnity specified. Including legal liability arising out of goods sold or supplied.

Insurers: FBD plc
Policy No.: 00433053/04/01
Renewal Date: 1st July 2010

Limit of Indemnity:
Public Liability €2,600,000 any one accident
Products Liability €2,600,000 any one period

Motor Insurance:
Covers the Insured's Liability to Third Parties for vehicles being used in connection with the insured's business. Personal Injury cover is unlimited and Third Party Property Damage limit is €1,300,000 and €30,000,000 for private cars.

Insurers: FBD plc
Policy No.: 00433053/22/01
Renewal Date: 1st July 2010

Excess Covers: Public/Products Liability, Motor TPPD and Employer's Liability
Insurers: AIG
Policy No.: EXL03924 & EXL03925 & LXE40787
Renewal Date: 1st July 2010

Limit of Indemnity:
Increases the underlying limits up to a maximum of €6.5m, €6.5m and €20m respectively
Indemnity to principals clause applies to all policies
Cover is subject to Insurers policy terms and conditions. We trust that this is in order but if you require further details, please do not hesitate to contact the undersigned.

Yours sincerely

Fergal Britton
Service Executive
(01) 409 3296

BUTLERH

ROAD TRAFFIC ACT 1961

CERTIFICATE OF INSURANCE

Policy and Certificate Number: 00433053/22/01

1. Name and Address of Person to whom the policy of Insurance has been issued:
PADRAIG THORNTON WASTE DISPOSAL LIMITED
KILLEEN ROAD
DUBLIN 10

2. Period of Cover:
From 01/07/2009 To 30/06/2010

3. Limitations as to use:
Use in connection with the Insured's business. While the vehicle is being so used the carriage of passengers is permitted.
Use for social, domestic and pleasure purposes.
Use while drawing (other than for reward) any one disabled mechanically propelled vehicle.
Use while drawing trailers but in no event while drawing a greater number of trailers in all than is permitted by law.
The policy does not cover:
Use for hire or reward.
Use for any purpose in connection with the Motor Trade other than use necessitated by the overhaul, upkeep and/or repair of the vehicle for the Insured.
Use for racing, pacemaking, speed testing, competitions, rallies or trials.

4. Persons or classes of persons whose liability is covered:
The Insured.
Any person whose driving is covered except a person in the Motor Trade driving the vehicle for purposes necessitated by it's overhaul, upkeep and/or repair for the Insured.

5. Vehicles or classes of vehicles the use of which is covered:
Any PRIVATE CAR, COMMERCIAL VEHICLE, the property of the Insured or in the Insured's custody or control excluding ALL STEAM DRIVEN VEHICLES.

6. Drivers or classes of drivers whose driving is covered:
(a) Any person who is driving on the Insured's order or with the Insured's consent.

Provided that the person driving holds a licence to drive such a vehicle, or having held such a licence, is not disqualified from holding such a licence by order of a Court of Law or deemed to have been made under the Road Traffic Act 1961.

I HEREBY CERTIFY that an approved policy of insurance has been issued by me to the person named above, that the particulars stated above are correct, and that, within such particulars and subject to the provision of the Road Traffic Act 1961, the policy of insurance covers all liabilities which are required by the said Act to be the subject of an approved policy of insurance.

Signature or Seal of Vehicle Insurer

INSURANCE DIRECTOR
FBD Insurance plc,
FBD House,
Bluebell, Dublin 12.

FBD Insurance

Date of Authentication 01/07/2009

Any termination or suspension of the insurance to which the Company may on request agree, will operate only from the return of this Certificate.

Road Traffic Act 1961
Certificate of Insurance

ZURICH

Particulars

Number of Certificate and number of the Policy of Insurance: 59.PMV.5901863

1. Name and address of person to whom the Policy of Insurance has been issued:

Padraig Thornton Waste Disposal Ltd t/a Thornton Tanker Services,
Unit S3B Parkwest Business Park,
Dublin 10.

2. Period of cover From: 00.01hrs 01/07/2009 To: 30/06/2010

3. Limitations as to use:

Use necessitated by the overhaul, upkeep and/or repair of the vehicle for the Insured.
Use for social domestic and pleasure purposes
Use in connection with the Insured's business.
While the vehicle is being so used the carriage of passengers other than for hire or reward is permitted.
The Policy does not cover:
Use for reliability trial or Use while drawing a greater number of trailers in all than is permitted by Law.

4. Persons, or classes of persons, whose liability is covered:

Any person driving whose driving is covered except a person in the Motor Trade driving the vehicle for purposes necessitated by its overhaul, upkeep and/or repair for the Insured.

5. Vehicles, or classes of vehicles, the use of which is covered:

Any Motor Vehicle the property of, or on hire or loan or leased to the Insured.

6. Drivers, or classes of drivers, whose driving is covered:

Any person twenty-five years of age or over who is driving on the Insured's order or with their consent the vehicle described in Section 5 on the Certificate

Provided that the person driving holds a licence to drive such vehicle, or, having held such a licence, is not disqualified from holding such a licence

WE HEREBY CERTIFY that an approved policy of insurance has been issued by us to the person named above, that the particulars stated above are correct, and that, within such particulars and subject to the provisions of the Road Traffic Act, 1961, the policy of insurance covers all liabilities which are required by the said Act to be the subject of an approved policy of insurance.

Zurich Insurance Company Ltd, Patrick Manley, Branch Manager for Ireland

Signature of Person authenticating on behalf of Vehicle Insurer:

Date of Authentication: 01/07/2009

This Policy applies in respect of events occurring in all member countries of the European Union and Czech Republic, Slovak Republic, Hungary, Iceland, Liechtenstein, Norway and Switzerland.

Cette police s'applique aux événements survenants dans tous les pays membres de l'Union Européenne, dans la République Tchèque, la République Slovaque, l'Hongrie, l'Islande, le Liechtenstein, la Norvège et la Suisse.

Die Versicherung ist gültig für Schäden, die sich in den Mitgliedstaaten der Europäischen Union sowie in der Tschechischen Republik, der Slowakischen Republik, Ungarn, Island, Liechtenstein, Norwegen und der Schweiz ereignen.

Esta Poliza se aplica en eventos ocurridos en la Communidad Europea, República Checa, República Eslovaca, Hungria, Islandia, Liechtenstein, Noruega y Suiza.

Questa polizza si applica agli eventi accaduti nell' Repubblica Ceca, Repubblica Slovacca, Ungheria, Islanda, Liechtenstein, Norvegia, Svizzera, ed in tutte le nazioni membre dell'Unione Europea.