

Tegral Building Products Ltd.

Annual Environmental Report (AER) 2015

In Relation To

Waste Disposal Facility

At

Ballylinan, Co. Laois

Waste Management License Reference 0046-01

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1. Introduction

1.1. Licensee

Tegral Building Products Ltd.
Athy,
Co. Kildare.

1.2. Register Number

W046-01

1.3. Reporting Period

1st January to 31st December 2015

1.4. Location

Ballylinan,
Co.Laois.

1.5. Environmental Policy

For the Environment Policy Statement refer to Appendix 1.

1.6. Summary of Compliance (1st January to 31st December 2015)

The landfill site at Ballylinan was not used for disposal of waste in 2015. Implementation of the agreed closure plan was completed in September 2007.

No non-compliance was notified by the Agency, in the period.

2. Site Description

2.1. Location

The landfill disposal site is located in the Ballylinan Townland approximately 1 km East of the village of Ballylinan, Co. Laois. The National Grid Reference for the site is:

2656 E, 1884 N.

The site comprises an area of 1.489 hectares of which approximately 0.755 hectares is a disused limestone quarry and the remaining 0.734 hectares is grass borders and site access road. The site has been in use since 1990, initially under Permit from Laois County Council and is licensed by the E.P.A. since 18th May 1999. The site was used exclusively for the disposal of wastes arising from the manufacture of fibre-cement products at the Athy factory.

3. Site Management Personnel

3.1. Board of Directors

The Board of Directors bears ultimate statutory responsibility for the actions of the company. Consequently, the ultimate authority within the company rests with the Board.

3.2. Works Manager

The Works Manager is **Mr. Stephen Gormalley** and his duties regarding Ballylinan Landfill Site include the following:

- Ensuring compliance with all relevant environmental legislative requirements;
- Ensuring that at all times competent staff and appropriate resources are available to meet the requirements of the Waste Management License.

3.3. Facility Manager

The Facility Manager is **Mr. Paul Loughman** who is responsible for the following;

- Ensuring compliance with all relevant environmental legislative requirements;

3.4. Deputy Facility Manager

The Deputy Facility Manager, when the site was active was **Mr. Paul Molloy** who is employed by Tegral as Relief Day Shift & Warehouse Manager.

3.5. Other Personnel

No other personnel were involved on the site in 2015.

4. Waste Acceptance and Handling

4.1. Waste Types

No wastes were deposited on the site in 2015.

4.2. Quantities

No waste was deposited on the site in 2015.

4.3. Deposition of Waste

No waste was deposited on the site in 2015.

4.3.1. Further Procedural Guidelines

Now not relevant

5. Landfill Monitoring

5.1 Groundwater Monitoring

In accordance with the requirements of the Waste Management License (W046-01) groundwater in the vicinity of the site is sampled four times per year at nine locations. Five of these locations are from monitoring wells installed in and around the landfill site and designated MW01-MW05. One sampling location, designated MW06 is a public hand pump located North of the site (although no samples could be obtained at this location), MW08 is located South East of the site. Samples were also taken at two additional wells not referenced in the waste management licence. These are MW09 located up gradient of the facility and MW10 located down gradient. These wells were installed following a hydro geological assessment of the site undertaken in December 2004.

O’Callaghan Moran & Associates (OCM) were contracted to do the sampling and analysis as required in the license. The following reports, produced by OCM were submitted to the Agency during the year.

1 st Quarter 2015	Report Submitted	22/04/2015
2 nd Quarter 2015	Report Submitted	17/07/2015
3 rd Quarter 2015	Report Submitted	09/09/2015
4 th Quarter 2015	Report Submitted	27/01/2016

5.2. Air Monitoring

No wastes were deposited on the site in 2015, however, one fibre in air measurement was undertaken.

5.3. Climatological Data

Data for rainfall and wind speed and direction is, as agreed with the Agency, obtained from Met Eireann. This data was obtained for the Oak Park station in Carlow. The daily figures for rainfall, mean wind speed are included in Appendix 2 and are summarized below.

Monthly Precipitation Data Oak Park

Month	Total Precipitation mm	Number of Days with No Precipitation	Daily Max. Precipitation mm
Jan	66	10	15.6
Feb	36.3	14	8
March	53.5	13	10.6
April	26.3	15	4.9
May	89.4	10	18.4
June	29.7	20	14
July	79.4	10	18.1
August	83	11	25.4
September	27.6	17	10.6
October	56.8	12	13
November	110	4	14.6
December	270.9	1	35.2
Annual Total	928.9	137	

Monthly Mean Wind Speeds – Knots *

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Carlow	10.3	7.7	9.2	6.8	8.84	7.85	7.8	6.81	6.09	5.75	9.8	12.06

Annual Mean Oakpark = 8.25

* Source Met Eireann, Oakpark, Carlow

6. Emission Impacts

6.1. Groundwater

6.1.1. Discharges to Groundwater

There are no direct discharges to groundwater from the facility. Indirect discharges are calculated based on the net precipitation over the area of the site enclosed by the quarry rock face, which is 0.755 hectares. The measured total precipitation at the Met Eireann Station in Oakpark during 2015 was 928.9 mm.

The potential evaporation for Oak Park Carlow for the 2015 (Met Eireann) was 544.8 mm. This gives a net precipitation of 384.1 mm.

This yields a volume of 2,899m³ of which a maximum of 5% would have penetrated the cap and percolated through the waste. The maximum indirect discharge to groundwater is therefore estimated to be 145m³.

6.1.2. Groundwater Quality

All of the groundwater monitoring data is presented on the following tables. There are no standards prescribed in the waste management license for groundwater quality. It is important to note that there are no private wells in the immediate vicinity of the landfill site. The local residents are serviced by a public water supply scheme.

The groundwater monitoring programme, which has been ongoing since 1999 has identified the consistent presence of elevated levels of ammonia, pH and potassium in a number of the monitoring wells.

In general, however, the 2015 monitoring results are consistent with those of previous years. The presence of faecal organisms in some of the wells is a clear indication of an external source of contamination

Trace levels of Toluene, Benzene, ethylbenzene and Xylene were detected in MW9 in (Q4). Trace levels of VOC's were also detected MW01. These VOC results are consistent with results previously submitted to the agency.

Ballylynan Landfill Site
Groundwater Monitoring Results 2014
Monitoring Well No. MW-01

N 188424 E 265543		West of Centre			
Parameter	Units	Monitoring Dates			
		Q1	Q2	Q3	Q4
pH	pH Units	10.43	10.54	10.81	9.34
Conductivity	mS/cm	0.638	580	0.656	675
Ammonia - N	mg/l	20.42	16.99	26.31	19.88
Nitrate - N	mg/l	<0.2	<0.2	0.4	0.4
Nitrite - N	mg/l	<0.02	<0.02	<0.02	0.04
TOC	mg/l	58	61	76	19
TON	mg/l	<0.2	<0.2	<0.2	<0.2
Alkalinity (CaCO ₃)	mg/l		240		284
Fluoride	mg/l		<0.3		0.6
Chloride	mg/l	29.4	31.5	30.6	21.6
Sulphate	mg/l	0.56	1.36	1.16	22.02
Total Phosphorus	mg/l		0.207		0.168
Calcium	mg/l	3.1	3.3	3.9	3.5
Magnesium	mg/l		<0.1		<0.1
Sodium	mg/l	66.6	53	64.6	62.5
Potassium	mg/l	120	91.9	138.7	103.9
Iron	mg/l	0.106	0.089	0.085	0.056
Manganese	mg/l	<0.002	<0.002	<0.002	<0.002
Phenols	mg/l	0.166	0.061	0.048	0.056
Zinc	mg/l		0.004		0.006
Mercury	mg/l		<1		<1
Lead	mg/l		9		6
Cyanide	mg/l		<0.01		<0.01
Barium	mg/l	<0.003	<0.003	<0.003	<0.003
Boron	mg/l		29		43
Cadmium	mg/l		<0.5		0.5
Chromium	mg/l		<1.5		<1.5
Copper	mg/l		<7		<7
Total Coliforms	mpn/100ml		>2,419.6		>100
Faecal Coliforms	mpn/100ml		<1		>100
Total Solids	mg/l		474		400
Benzene	mg/l		2.9		<0.5
Toluene	mg/l		57.5		<0.5
Ethylbenzene	mg/l		17.9		<0.5
Xylene	mg/l		44.3		<1

Ballylynan Landfill Site
Groundwater Monitoring Results 2015
Monitoring Well No. MW-02

N 188464
E 265602

North of Centre

Parameter	Units	Monitoring Dates			
		Q1	Q2	Q3	Q4
pH	pH Units	7.67	7.98	8.65	6.58
Conductivity	mS/cm	0.622	631	0.55	594
Ammonia - N	mg/l	3.73	10.04	17.34	1.76
Nitrate - N	mg/l	3.4	<0.2	0.4	42.6
Nitrite - N	mg/l	0.06	<0.02	<0.02	0.15
TOC	mg/l	8	8	21	<2
TON	mg/l	0.8	<0.2	<0.2	9.7
Alkalinity (CaCO ₃)	mg/l		308		214
Fluoride	mg/l		<0.3		<0.3
Chloride	mg/l	17.2	23.7	31.5	27.3
Sulphate	mg/l	10.96	11.05	0.98	16.12
Total Phosphorus	mg/l		0.277		0.106
Calcium	mg/l	83.7	61.7	28.5	40.9
Magnesium	mg/l		3.3		1.8
Sodium	mg/l	13.8	20.1	27	25.1
Potassium	mg/l	35.1	50.7	74.3	67.8
Iron	mg/l	0.98	0.072	0.181	0.023
Manganese	mg/l	0.059	0.076	0.036	0.217
Phenols	mg/l	<0.006	<0.006	<0.006	<0.006
Zinc	mg/l		<0.003		0.007
Mercury	mg/l		<1		<1
Lead	mg/l		7		<5
Cyanide	mg/l		<0.01		<0.01
Barium	mg/l	0.034	0.026	0.011	0.02
Boron	mg/l		24		26
Cadmium	mg/l		<0.5		<0.5
Chromium	mg/l		<1.5		<1.5
Copper	mg/l		<7		11
Total Coliforms	mpn/100ml		866		3
Faecal Coliforms	mpn/100ml		17		3
Total Solids	mg/l		399		333
Benzene	mg/l		<0.5		<0.5
Toluene	mg/l		<0.5		<0.5
Ethylbenzene	mg/l		<0.5		<0.5
Xylene	mg/l		<1		<1

Ballylunan Landfill Site
Groundwater Monitoring Results 2015
Monitoring Well No. MW-03

N 188411 E 265684

East of Centre

Parameter	Units	Monitoring Dates			
		Q1	Q2	Q3	Q4
pH	pH Units	7.51	7.46	7.65	7.2
Conductivity	mS/cm	0.692	744	0.691	693
Ammonia - N	mg/l	<0.03	0.04	1.27	<0.03
Nitrate - N	mg/l	9.2	1.2	6.7	5.9
Nitrite - N	mg/l	<0.02	<0.02	<0.02	<0.02
TOC	mg/l	2	<2	<2	<2
TON	mg/l	2.1	0.3	1.5	1.3
Alkalinity (CaCO ₃)	mg/l		334		312
Fluoride	mg/l		<0.3		<0.3
Chloride	mg/l	14.7	20.3	18.9	23.7
Sulphate	mg/l	30.77	34.73	30.64	26.49
Total Phosphorus	mg/l		0.15		0.101
Calcium	mg/l	121.2	121.7	126.3	117.8
Magnesium	mg/l		4.8		4.2
Sodium	mg/l	9.7	13.2	12.4	11.6
Potassium	mg/l	20.4	32.3	32.5	27.6
Iron	mg/l	<0.020	<0.020	<0.020	<0.020
Manganese	mg/l	<0.002	<0.002	<0.002	<0.002
Phenols	mg/l	<0.006	<0.006	<0.006	<0.006
Zinc	mg/l		<0.003		<0.003
Mercury	mg/l		<1		<1
Lead	mg/l		7		<5
Cyanide	mg/l		<0.01		<0.01
Barium	mg/l	0.031	0.039	0.042	0.033
Boron	mg/l		24		28
Cadmium	mg/l		<0.5		<0.5
Chromium	mg/l		<1.5		<1.5
Copper	mg/l		<7		<7
Total Coliforms	mpn/100ml		>2,419.6		>100
Faecal Coliforms	mpn/100ml		16		>100
Total Solids	mg/l		498		383
Benzene	mg/l		<0.5		<0.5
Toluene	mg/l		<0.5		<0.5
Ethylbenzene	mg/l		<0.5		<0.5
Xylene	mg/l		<1		<1

Ballylynan Landfill Site
Groundwater Monitoring Results 2015
Monitoring Well No. MW-04

N 188362 E 265618		South of Centre			
Parameter	Units	Monitoring Dates			
		Q1	Q2	Q3	Q4
pH	pH Units	7.36	7.2	7.5	7.01
Conductivity	mS/cm	0.754	752	0.731	647
Ammonia - N	mg/l	0.04	0.41	0.25	0.61
Nitrate - N	mg/l	13.5	0.7	7	1.6
Nitrite - N	mg/l	<0.02	0.07	0.12	0.03
TOC	mg/l	3	<2	4	<2
TON	mg/l	3	<0.2	1.6	0.4
Alkalinity (CaCO ₃)	mg/l		362		358
Fluoride	mg/l		<0.3		<0.3
Chloride	mg/l	16.4	17	17.8	16.8
Sulphate	mg/l	15.49	15.74	21.84	7.91
Total Phosphorus	mg/l		0.111		0.046
Calcium	mg/l	115.5	119.1	127.8	107.9
Magnesium	mg/l		4.7		4.1
Sodium	mg/l	30.6	29.6	29.4	30.1
Potassium	mg/l	16.5	16.5	18.7	19.1
Iron	mg/l	<0.020	<0.020	<0.020	0.035
Manganese	mg/l	0.166	0.047	0.033	0.594
Phenols	mg/l	<0.006	<0.006	<0.006	<0.006
Zinc	mg/l		0.003		0.004
Mercury	mg/l		<1		<1
Lead	mg/l		<5		<5
Cyanide	mg/l		<0.01		<0.01
Barium	mg/l	0.073	0.073	0.086	0.075
Boron	mg/l		15		24
Cadmium	mg/l		<0.5		<0.5
Chromium	mg/l		<1.5		<1.5
Copper	mg/l		<7		<7
Total Coliforms	mpn/100ml		5.20		>100
Faecal Coliforms	mpn/100ml		<1		>100
Total Solids	mg/l		483		351
Benzene	mg/l		<0.5		<0.5
Toluene	mg/l		<0.5		<0.5
Ethylbenzene	mg/l		<0.5		<0.5
Xylene	mg/l		<1		<1

Ballylynan Landfill Site
Groundwater Monitoring Results 2015
Monitoring Well No. MW-05

N 188465 E 265657		North-East of Centre			
Parameter	Units	Monitoring Dates			
		Q1	Q2	Q3	Q4
pH	pH Units	7.29	7.22	7.31	6.92
Conductivity	mS/cm	0.814	812	0.727	726
Ammonia - N	mg/l	0.93	0.99	1.3	14.83
Nitrate - N	mg/l	<0.2	<0.2	0.6	14.4
Nitrite - N	mg/l	<0.02	<0.02	<0.02	<0.02
TOC	mg/l	4	<2	5	<2
TON	mg/l	<0.2	<0.2	<0.2	3.3
Alkalinity (CaCO ₃)	mg/l		392		390
Fluoride	mg/l		<0.3		<0.3
Chloride	mg/l	34.6	34.3	29.5	28.5
Sulphate	mg/l	16.35	15.27	17.56	18.76
Total Phosphorus	mg/l		0.154		0.513
Calcium	mg/l	142.2	140.7	141.2	129.3
Magnesium	mg/l		8.1		7.6
Sodium	mg/l	11.2	11.7	11.1	11.4
Potassium	mg/l	20.3	21.7	22.1	22.2
Iron	mg/l	<0.020	<0.020	<0.020	<0.020
Manganese	mg/l	2.178	2.463	2.164	0.002
Phenols	mg/l	<0.006	<0.006	<0.006	<0.006
Zinc	mg/l		0.006		0.004
Mercury	mg/l		<1		<1
Lead	mg/l		6		<5
Cyanide	mg/l		<0.01		<0.01
Barium	mg/l	0.216	0.218	0.22	0.119
Boron	mg/l		32		36
Cadmium	mg/l		<0.5		<0.5
Chromium	mg/l		<1.5		<1.5
Copper	mg/l		<7		<7
Total Coliforms	mpn/100ml		>2,419.6		>100
Faecal Coliforms	mpn/100ml		220		>100
Total Solids	mg/l		579		455
Benzene	mg/l		<0.5		<0.5
Toluene	mg/l		<0.5		<0.5
Ethylbenzene	mg/l		<0.5		<0.5
Xylene	mg/l		<1		<1

Ballylynan Landfill Site
Groundwater Monitoring Results 2015
Monitoring Well No. MW-08

N 188359
E 265781

Murphy's Well
East-South-East of Centre

Parameter	Units	Monitoring Dates			
		Q1	Q2	Q3	Q4
pH	pH Units	7.56	7.52	7.84	7.76
Conductivity	mS/cm	0.638	636	0.593	592
Ammonia - N	mg/l	<0.03	<0.03	<0.03	<0.03
Nitrate - N	mg/l	17.5	6.1	16.7	14.6
Nitrite - N	mg/l	<0.02	<0.02	<0.02	<0.02
TOC	mg/l	<2	<2	2	<2
TON	mg/l	3.9	1.4	3.8	3.3
Alkalinity (CaCO ₃)	mg/l		304		302
Fluoride	mg/l		<0.3		<0.3
Chloride	mg/l	17.3	17.3	16.6	16.3
Sulphate	mg/l	10.55	11.28	12.91	10.79
Total Phosphorus	mg/l		0.045		0.039
Calcium	mg/l	115.7	115.6	116.4	108.2
Magnesium	mg/l		10.2		10.8
Sodium	mg/l	7.7	8.1	8	8.4
Potassium	mg/l	1.7	1.5	1.5	1.4
Iron	mg/l	<0.020	<0.020	<0.020	<0.020
Manganese	mg/l	<0.002	<0.002	<0.002	<0.002
Phenols	mg/l	<0.006	<0.006	<0.006	<0.006
Zinc	mg/l		0.009		0.013
Mercury	mg/l		<1		<1
Lead	mg/l		<5		<5
Cyanide	mg/l		<0.01		0.02
Barium	mg/l	0.028	0.028	0.026	0.024
Boron	mg/l		12		13
Cadmium	mg/l		<0.5		<0.5
Chromium	mg/l		<1.5		5.8
Copper	mg/l		<7		<7
Total Coliforms	mpn/100ml		<1		0
Faecal Coliforms	mpn/100ml		<1		0
Total Solids	mg/l		392		298
Benzene	mg/l		<0.5		<0.5
Toluene	mg/l		<0.5		<0.5
Ethylbenzene	mg/l		<0.5		<0.5
Xylene	mg/l		<1		<1

Ballylynan Landfill Site
Groundwater Monitoring Results 2015
Monitoring Well No. MW-09



Parameter	Units	Monitoring Dates			
		Q1	Q2	Q3	Q4
pH	pH Units	11.75	12	12.05	11.56
Conductivity	mS/cm	1.903	2178	2.104	1505
Ammonia - N	mg/l	26.15	27.71	36.04	28.47
Nitrate - N	mg/l	<0.2	<0.2	0.4	<0.2
Nitrite - N	mg/l	<0.02	<0.02	0.05	0.05
TOC	mg/l	51	67	103	62
TON	mg/l	<0.2	<0.2	<0.2	<0.2
Alkalinity (CaCO ₃)	mg/l		720		688
Fluoride	mg/l		0.4		<0.3
Chloride	mg/l	26.8	33.6	27.4	26.5
Sulphate	mg/l	11.58	87.7	30.57	7.46
Total Phosphorus	mg/l		0.991		0.327
Calcium	mg/l	1	3.8	28.8	0.9
Magnesium	mg/l		<0.1		<0.1
Sodium	mg/l	116.1	118.7	112.4	111.4
Potassium	mg/l	359.6	305.1	297.3	278.4
Iron	mg/l	0.098	0.138	0.108	0.105
Manganese	mg/l	0.002	0.003	<0.002	<0.002
Phenols	mg/l	0.048	0.02	0.032	0.012
Zinc	mg/l		0.004		0.004
Mercury	mg/l		<1		<1
Lead	mg/l		8		7
Cyanide	mg/l		<0.01		<0.01
Barium	mg/l	0.011	0.015	0.043	0.009
Boron	mg/l		21		25
Cadmium	mg/l		<0.5		0.5
Chromium	mg/l		<1.5		<1.5
Copper	mg/l		23		<7
Total Coliforms	mpn/100ml		<1		0
Faecal Coliforms	mpn/100ml		<1		0
Total Solids	mg/l		1342		908
Benzene	mg/l		5		4.2
Toluene	mg/l		77.5		59
Ethylbenzene	mg/l		11.8		9.6
Xylene	mg/l		40		25.2

Ballylynan Landfill Site
Groundwater Monitoring Results 2015
Monitoring Well No. MW-10



Parameter	Units	Monitoring Dates			
		Q1	Q2	Q3	Q4
pH	pH Units	7.35	7.25	7.47	7.11
Conductivity	mS/cm	0.7	696	0.653	571
Ammonia - N	mg/l	<0.03	<0.03	0.04	<0.03
Nitrate - N	mg/l	19.4	20.2	21.5	17.2
Nitrite - N	mg/l	<0.02	<0.02	<0.02	<0.02
TOC	mg/l	<2	<2	<2	<2
TON	mg/l	4.4	4.6	4.9	3.9
Alkalinity (CaCO ₃)	mg/l		470		386
Fluoride	mg/l		<0.3		<0.3
Chloride	mg/l	19.4	20.1	20.5	19.2
Sulphate	mg/l	15.3	16.44	15.37	15.2
Total Phosphorus	mg/l		0.89		0.505
Calcium	mg/l	131.8	128.5	136.9	124
Magnesium	mg/l		8		8.3
Sodium	mg/l	9.3	10	10.1	10.1
Potassium	mg/l	2.7	2.7	3.3	2.7
Iron	mg/l	<0.020	0.042	<0.020	<0.020
Manganese	mg/l	<0.002	<0.002	<0.002	<0.002
Phenols	mg/l	<0.006	<0.006	<0.006	<0.006
Zinc	mg/l		<0.003		<0.003
Mercury	mg/l		<1		<1
Lead	mg/l		<5		<5
Cyanide	mg/l		<0.01		0.03
Barium	mg/l	0.033	0.033	0.037	0.034
Boron	mg/l		41		38
Cadmium	mg/l		<0.5		<0.5
Chromium	mg/l		<1.5		<1.5
Copper	mg/l		<7		<7
Total Coliforms	mpn/100ml		<1		>100
Faecal Coliforms	mpn/100ml		1		>100
Total Solids	mg/l		786		873
Benzene	mg/l		<0.5		<0.5
Toluene	mg/l		<0.5		<0.5
Ethylbenzene	mg/l		<0.5		<0.5
Xylene	mg/l		<1		<1

6.2. Air Quality

6.2.1. Fibres in Air

One fibre in air monitoring sample was taken in 2015. All results were <0.01f/ml and comply with the required standard.

6.2.2. Dust Deposition

Dust deposition monitoring has ceased as agreed with the agency.

7. Site Design / Development

7.1. Security

Security is ensured by the provision of fencing with secure and lockable gates. The access road to the site is private; therefore the landfill is not adjoining a public road.

There are two gates between the public road and the landfill site. The external gate is used for access to the site inner gate, along the private access road, which is also used by the farmer from whom the land is leased to access his other property. The internal gate is used exclusively for site entry, and is open to allow free movement of sheep who graze the property as agreed with the agency.

7.2. Site Inspections

No waste was deposited on the site in 2015 and there was no need for the routine inspections undertaken during the operational phase of the site. The site was inspected by O'Callaghan Moran Consultants to ensure there were no indications of settlement, surface ponding, leachate outbreaks, etc.

7.3. Site Roads

When the site was active the private site access road was inspected on a regular basis. The site owner also uses this as a means of access to a portion of his land.

7.4. Electricity Supply

The electrical supply to the site was disconnected by the ESB in 2008 as there is now no need to maintain such a supply.

7.5. Other Infrastructure

There is no other infrastructure on the site.

7.6. Restoration

The implementation of the restoration plan agreed with the Agency was completed in September 2007.

7.7. Site Development Works

There were no such works.

7.8. Topographical Survey

The finished site levels are shown on the drawings with the Construction Validation reported prepared by O'Callaghan Moran / Capita Simmons.

7.8.1. Area Covered by Waste

0.755 hectares has been covered with waste.

8. Objective and Targets

8.1.

The objective set for 2015 was to continue to implement the monitoring and other relevant requirements of the licence.

This was achieved.

8.2. Objectives for 2016

The objective for 2016 is to continue to implement the monitoring and other relevant requirements of the licence.

9. Resources and Energy Consumption

9.1. Cover Material

Disposal activities at the site ceased in May 2005. No cover material was used in 2015.

9.2. Diesel Fuel

Not relevant as site not in use for disposal of waste in 2015.

9.3. Electricity

Not relevant as site not in sue for disposal of waste in 2015.

10. Non-Compliance with License Conditions

No non-compliances with the Waste Management License were notified during the year.

11. Complaints

No complaints were received during 2015.

12. Incidents

There were no incidents during the year.

13. Financial Provisions

In accordance with the requirements of Condition 11.2 of the license Tegral contracted Bord na Mona to undertake an environmental liabilities and risk assessment of the activity. Their report was submitted to the Agency in February 2000. According to their findings the worst-case scenario would be a targeted groundwater clean-up programme. Tegral Building Products Limited have made a provision of 127,000 Euro in the accounts to cover such an eventuality. On the basis of the monitoring results generated during 2015 and the risk assessment undertaken by O'Callaghan Moran & Associates, it is considered that this provision is adequate.

APPENDIX 1

ENVIRONMENTAL

POLICY

Tegral Buildings Products Annual Environmental Report 2015

Environmental Policy Statement

Tegral Building Products Limited is committed to complying with all relevant current licensing regulations with regard to operations carried out at its manufacturing plant in Athy, County Kildare and associated activities at its licensed landfill site at Ballylinan, County Laois.

In order to re-enforce this policy, Tegral is committed to the continued implementation of an Environmental Management System in compliance with the ISO 14001 International Standard. Certification to this standard was achieved in December 2001 and upgraded in 2005 to ISO14001:2004

The company undertakes to provide the necessary resources, including manpower and related training to achieve and demonstrate sound environmental performance and foster environmental protection by controlling the impact of its operational activities on the environment at large.

All employees shall be made aware of the commitment necessary to support environmental protection in the performance of their duties.

PATRICK KELLY
Managing Director

PAUL LOUGHMAN
Quality & Environment Manager

APPENDIX 2

MET EIREANN

DATA

Date	Rainfall(mm)	Mean Wind Speed(knots)
01/01/2015	6.9	16.4
02/01/2015	0	10
03/01/2015	14	5
04/01/2015	0	4.9
05/01/2015	1.3	9.2
06/01/2015	1.9	8.9
07/01/2015	4.3	15.8
08/01/2015	3	11.6
09/01/2015	0.2	17
10/01/2015	2.7	17
11/01/2015	0	11.2
12/01/2015	3.2	14.1
13/01/2015	1.7	10.8
14/01/2015	15.6	14.7
15/01/2015	1.5	17.1
16/01/2015	0	8.6
17/01/2015	0	7.2
18/01/2015	0.1	6.8
19/01/2015	0	4.1
20/01/2015	2.3	4.7
21/01/2015	0	5.4
22/01/2015	0	3.1
23/01/2015	1.3	7.9
24/01/2015	0.1	7.2
25/01/2015	1.1	8.6
26/01/2015	0.2	7.4
27/01/2015	0	7.1
28/01/2015	2.4	16.9
29/01/2015	2	15.9
30/01/2015	0.2	12.9
31/01/2015	0	13.2
01/02/2015	0	6.6
02/02/2015	0	2.2
03/02/2015	0	4.2
04/02/2015	0	5.7
05/02/2015	0.6	3.5
06/02/2015	0.1	4.1
07/02/2015	0	7.2
08/02/2015	0	3.0
09/02/2015	0	4.0
10/02/2015	0	3.5
11/02/2015	0	2.4
12/02/2015	0.8	5.6
13/02/2015	5.2	9.5
14/02/2015	0	4.0
15/02/2015	5.9	8.7
16/02/2015	0.1	8.3

17/02/2015	0	7.2
18/02/2015	0.8	13.1
19/02/2015	4.9	8.0
20/02/2015	0	5.9
21/02/2015	0	8.7
22/02/2015	8	14.1
23/02/2015	6.1	19.7
24/02/2015	1.7	12.8
25/02/2015	1	7.3
26/02/2015	0.6	12.3
27/02/2015	0	10.1
28/02/2015	0.5	14.5
01/03/2015	3.8	12.5
02/03/2015	1.6	14.4
03/03/2015	1.2	12.9
04/03/2015	0	9.1
05/03/2015	0	10.3
06/03/2015	0	16.2
07/03/2015	0	16
08/03/2015	2	8.4
09/03/2015	3.9	14.2
10/03/2015	0	6.5
11/03/2015	7.8	11
12/03/2015	10.6	10
13/03/2015	0	4.4
14/03/2015	0	3.2
15/03/2015	0	3.5
16/03/2015	0.2	3.4
17/03/2015	0.9	2.3
18/03/2015	0	2.1
19/03/2015	0	2.1
20/03/2015	0.2	4.7
21/03/2015	0	5.1
22/03/2015	0	6.1
23/03/2015	0.4	7.3
24/03/2015	1.7	7.7
25/03/2015	8.3	8.2
26/03/2015	0.1	10.9
27/03/2015	0	6.1
28/03/2015	1.2	16.6
29/03/2015	4.9	15.7
30/03/2015	3.8	15.5
31/03/2015	0.9	19.9
01/04/2015	0.1	13.3
02/04/2015	4.9	7.2
03/04/2015	1.6	11.5
04/04/2015	0	5.5
05/04/2015	0	3
06/04/2015	0.3	2.6
07/04/2015	0	2.7

08/04/2015	0	5.6
09/04/2015	0	5.6
10/04/2015	1.5	9.6
11/04/2015	1.3	11.1
12/04/2015	4.5	9.2
13/04/2015	0.1	9.9
14/04/2015	0	8.9
15/04/2015	0.1	4.6
16/04/2015	0	3.9
17/04/2015	0	4.4
18/04/2015	0	6.7
19/04/2015	0	5.1
20/04/2015	0	3.4
21/04/2015	0	3.7
22/04/2015	0	4.5
23/04/2015	0	4.3
24/04/2015	0.7	8
25/04/2015	3.2	7.1
26/04/2015	0.2	5.3
27/04/2015	1.2	9.4
28/04/2015	1.9	11.2
29/04/2015	4.7	10.4
30/04/2015	0	5.2
01/05/2015	1.4	6.7
02/05/2015	18.4	11
03/05/2015	9.6	9.6
04/05/2015	1.5	9.4
05/05/2015	13	9
06/05/2015	4.7	13.1
07/05/2015	1.3	3.7
08/05/2015	13.4	5.2
09/05/2015	0.5	7.8
10/05/2015	3.1	15.6
11/05/2015	0	15
12/05/2015	0	12
13/05/2015	0	5.1
14/05/2015	0.5	7.3
15/05/2015	0.2	7.8
16/05/2015	0	11.5
17/05/2015	1.2	8.9
18/05/2015	5.3	12.5
19/05/2015	5.2	11.4
20/05/2015	0	7.6
21/05/2015	0	6
22/05/2015	0	6.8
23/05/2015	0	4.5
24/05/2015	0.2	7.6
25/05/2015	0	6.6
26/05/2015	0	5.9
27/05/2015	1.9	7.8

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28/05/2015	0.3	10.7
29/05/2015	3.2	8.5
30/05/2015	3.5	7.8
31/05/2015	1	11.5
01/06/2015	14	12.6
02/06/2015	1.1	11.8
03/06/2015	0	7
04/06/2015	0	7.2
05/06/2015	5.8	10.2
06/06/2015	0	12.2
07/06/2015	0	4.4
08/06/2015	0	6
09/06/2015	0	3.4
10/06/2015	0	5.1
11/06/2015	0.2	4
12/06/2015	0	6.2
13/06/2015	0	6.6
14/06/2015	0	5.8
15/06/2015	0	5.3
16/06/2015	0	6
17/06/2015	0	9.7
18/06/2015	0	6.3
19/06/2015	0	6.9
20/06/2015	0	9.2
21/06/2015	0	10.5
22/06/2015	0	6.5
23/06/2015	0	5.5
24/06/2015	0	7.3
25/06/2015	0.3	9.3
26/06/2015	3.9	9.5
27/06/2015	2.5	10.3
28/06/2015	1.7	10.3
29/06/2015	0.1	9.4
30/06/2015	0.1	10.9
01/07/2015	0	5
02/07/2015	0	8.1
03/07/2015	6.9	7.5
04/07/2015	3.5	9.9
05/07/2015	1.3	7.3
06/07/2015	18.1	9.9
07/07/2015	2.1	10.9
08/07/2015	0.1	8.9
09/07/2015	0	6.5
10/07/2015	0	10.4
11/07/2015	0.5	8.7
12/07/2015	0	6.3
13/07/2015	4.3	7.1
14/07/2015	0.6	3
15/07/2015	0	4.2

16/07/2015	14.6	6.8
17/07/2015	0	12.8
18/07/2015	5	11.5
19/07/2015	1.2	7
20/07/2015	2	9.3
21/07/2015	0.2	8.2
22/07/2015	0.7	7.1
23/07/2015	0	5.8
24/07/2015	2.8	4.2
25/07/2015	0	5.1
26/07/2015	12.8	9.6
27/07/2015	0.5	11.7
28/07/2015	1.6	9.1
29/07/2015	0.1	7.8
30/07/2015	0	4.9
31/07/2015	0.5	8.5
01/08/2015	0	6.5
02/08/2015	8.6	10.6
03/08/2015	1.1	10.9
04/08/2015	0.5	11.9
05/08/2015	10	8.6
06/08/2015	0.4	4.9
07/08/2015	0	3.2
08/08/2015	0.4	8.6
09/08/2015	0	8.3
10/08/2015	0.1	9.3
11/08/2015	0	4.5
12/08/2015	0	3
13/08/2015	0	5.1
14/08/2015	0.7	5.8
15/08/2015	0	4.9
16/08/2015	0	5.3
17/08/2015	0	4.1
18/08/2015	0	4.8
19/08/2015	5.2	7.1
20/08/2015	0.1	9.6
21/08/2015	0.6	10.4
22/08/2015	6	4
23/08/2015	11.1	5.1
24/08/2015	0	5.7
25/08/2015	25.4	5.9
26/08/2015	4.6	9.3
27/08/2015	3.9	8.7
28/08/2015	1.1	10.3
29/08/2015	2.7	7.7
30/08/2015	0.1	1.9
31/08/2015	0.4	5.1
01/09/2015	0.2	6.8
02/09/2015	0.4	6.1
03/09/2015	0	8.2

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04/09/2015	0.3	8.2
05/09/2015	0	7.3
06/09/2015	0	3.8
07/09/2015	0	2.9
08/09/2015	0	5.6
09/09/2015	0	6.4
10/09/2015	0	8.1
11/09/2015	10.6	8.7
12/09/2015	0.7	8.5
13/09/2015	4	5.1
14/09/2015	1.7	4.9
15/09/2015	0	4.5
16/09/2015	0	5.4
17/09/2015	1.4	4.2
18/09/2015	0	4.6
19/09/2015	0	4
20/09/2015	3.4	8.7
21/09/2015	4.5	6.4
22/09/2015	0	6.1
23/09/2015	0	7.7
24/09/2015	0	9.6
25/09/2015	0	4.6
26/09/2015	0	4.9
27/09/2015	0.1	5.5
28/09/2015	0.1	7.6
29/09/2015	0	5.3
30/09/2015	0.2	3.1
01/10/2015	0.2	2.6
02/10/2015	0.2	3.4
03/10/2015	0	3.2
04/10/2015	0	5.5
05/10/2015	3.1	8
06/10/2015	2.2	6
07/10/2015	0	5.2
08/10/2015	0	4.8
09/10/2015	1.1	4.9
10/10/2015	0	3.2
11/10/2015	0	2.2
12/10/2015	0	5.7
13/10/2015	0	3.4
14/10/2015	0	4.3
15/10/2015	0	2.1
16/10/2015	0.1	2.9
17/10/2015	0.2	4.4
18/10/2015	0.9	3.8
19/10/2015	0	2.7
20/10/2015	8.5	5.4
21/10/2015	0.1	9.4
22/10/2015	0	8.6
23/10/2015	0.3	9.9

24/10/2015	5.6	8.4
25/10/2015	0.4	9.1
26/10/2015	5.4	13.2
27/10/2015	13	4.8
28/10/2015	0.8	7.3
29/10/2015	8.2	7.9
30/10/2015	6.3	10.1
31/10/2015	0.2	6
01/11/2015	0.1	3.3
02/11/2015	0.1	5.2
03/11/2015	0	3
04/11/2015	0.2	3.2
05/11/2015	8.8	4.5
06/11/2015	0.8	8.5
07/11/2015	7.1	6.2
08/11/2015	14.6	12.4
09/11/2015	2.6	15.1
10/11/2015	0	13.3
11/11/2015	7.9	9.6
12/11/2015	5.2	14
13/11/2015	5.8	14.7
14/11/2015	14.2	10.7
15/11/2015	1.5	17.1
16/11/2015	0.4	8.1
17/11/2015	5.3	14.5
18/11/2015	11.8	16.4
19/11/2015	0	7.5
20/11/2015	1.5	10
21/11/2015	0.1	9
22/11/2015	0	5
23/11/2015	1.8	5.5
24/11/2015	0.3	10.2
25/11/2015	0.7	9
26/11/2015	0.1	6.5
27/11/2015	1.4	10.7
28/11/2015	3.6	13.8
29/11/2015	3.7	17.6
30/11/2015	10.4	9.4
01/12/2015	1.7	12.3
02/12/2015	3.5	9.7
03/12/2015	35.2	6.1
04/12/2015	3.5	14.9
05/12/2015	19.3	22.5
06/12/2015	2.2	9.1
07/12/2015	9.2	17.4
08/12/2015	1.5	12.1
09/12/2015	11.6	15.9
10/12/2015	0.1	9.8
11/12/2015	0.2	8.4
12/12/2015	24.7	8.1

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13/12/2015	4.1	4.8
14/12/2015	7	7.8
15/12/2015	10.3	11.3
16/12/2015	0.3	11.6
17/12/2015	5.5	12
18/12/2015	2.5	13.5
19/12/2015	7.2	15.7
20/12/2015	0.3	11.6
21/12/2015	5.1	12.6
22/12/2015	8.6	14.9
23/12/2015	3.6	18
24/12/2015	11.8	13.9
25/12/2015	16.8	6.6
26/12/2015	22.7	7
27/12/2015	0	7.6
28/12/2015	11.2	16.5
29/12/2015	15.9	16.8
30/12/2015	20.4	16.2
31/12/2015	4.9	9.5