131-1
Office

BORD NA MONA

BORD NA MÓNA ENVIRONMENTAL LIMITED

Mr. Patrick Byrne,
Inspector
Office of Licensing & Guidance
Regional Inspectorate,
McCumiskey House
Richview, Clonskeagh Road,
Dublin 14

24th August 2005 **Reg. No.: 131-1**

Re: Clarification of Response to the Article 14(2)(b)(ii) of the Waste Management (Licensing) Regulations

Dear Mr. Byrne,

Following your request for clarification please refer to the following:

1. Please find attached correspondence from Meath County Council confirming the use of the treatment plants.

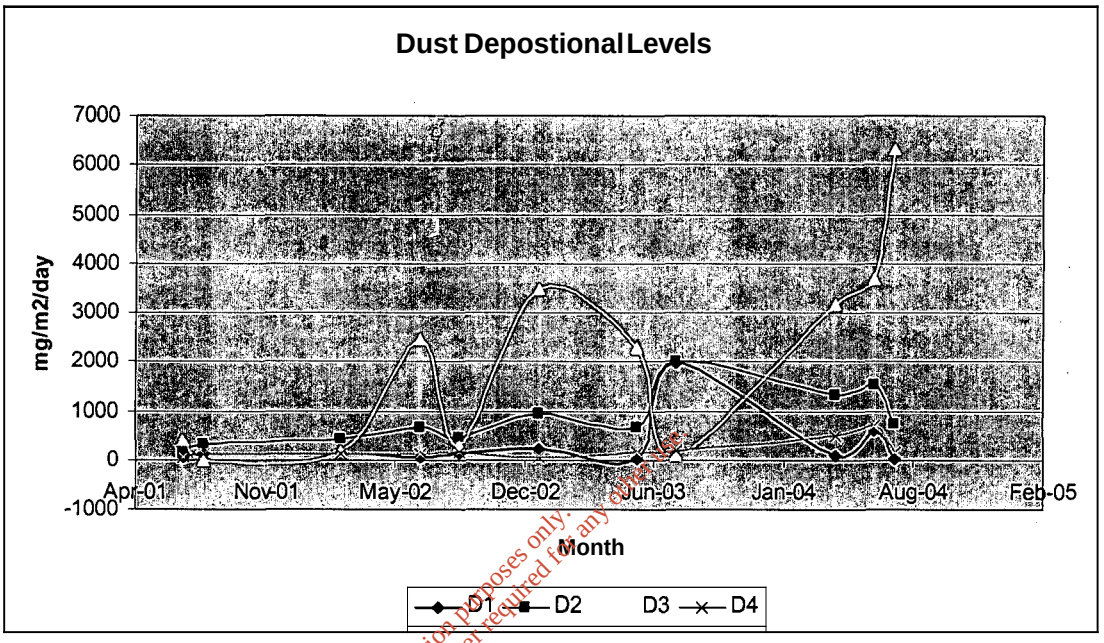
8. Provide a summary and interpretation of the results for dust, noise, surface water discharge, groundwater and gas monitoring results.

Dust, noise, surface water discharge and groundwater are monitored at the facility in compliance with midland waste disposal company ltds existing waste licence (131-1).

Dust

Dust levels are monitored at four locations around the perimeter of the facility. D1 is located at the back of the site, D2 & D3 are located along the roadway to the front of the site and D4 is located within the car park. A summary of the results to date are given in the table overleaf.

ID	Date/Dust Level mg/m^2/day										
	Jul-01	Aug-01	Mar-02	Jul-02	Sep-02	Jan-03	Jun-03	Aug-03	Apr-04	Jun-04	Jul-04
D1	61	114	135	73	119	224	17	1975	84	613	39
D2	153	331	450	679	477	948	685	1997	1334	1521	746
D3	408	<86	173	2452	306	3,485	2,293	78	3162	3673	6329
D4	51	124	135	123	175	56	156	212	505	. 709	151



In general, the results of the dust monitoring have shown higher levels of dust along the northern boundary of the facility (D2 & D3) in comparison to the southern (D1) and eastern (D4) sections, as illustrated below. D2 & D3 are located along the roadway, and close to an adjacent industrial site. The movement of traffic along the roadway is considered to be the predominant source of the dust detected along this boundary. Dust directional gauges at these monitoring stations predominantly indicate that dust is being generated fiom the east and west (traffic movement) and from the north (off-site activities), rather than fiom the working areas of Midland Waste Disposal Company Ltd.

D1 is located to the south of the facility on the embankment. Dust levels have recorded generally low levels which have ranged from 17.4 mg/m^2/day in June 2003 to 613.3 mg/m^2/day in June 2004 and averaging since monitoring commenced in July 2001 at 148 mg/m^2/day[1]. The dust level recorded in August 2003 was highly elevated in comparison to previous and subsequent monitoring events at as such are not considered indicative of dust levels at this location. Dust directional monitoring carried out has indicated that any dust arising at this

[1] This excludes levels obtained in August 2003 which are not indicative of dust rates at this location.

location has predominantly originated from the south and west at as such are not a result of on-site activities.

D2 is located in the north-west region of the site along the northern boundary. This location is adjoining the roadway with the facility to the south. Dust levels have been high at this location with levels recorded above the emission limit of 350 mg/m^2/day on nine occasions. Levels range from 153 mg/m^2/day in July 2001 to 1997 mg/m^2/day in August 2003. Dust directional monitoring detected higher levels of dust originating from the north and the west indicating the source of the dust from off-site activities and the adjoining roadway.

D3 is located at the northern boundary close to the site entrance. The highest levels of dust have been recorded at this location with levels ranging from 78 mg/m^2/day in August 2003 up to 6329 mg/m^2/day in July 2004. Directional dust monitoring showed higher dust levels originating from predominantly from the east again indicating the source of the dust is the adjoining roadway.

D4 is located in the western section of the site. As with D1 levels at D4 have historically been much lower compared to D2 and D3. Levels have ranged from 51 in July 2001 to 709 in June 2004. Levels were recorded above the emission limit on only two occasions in April and June 2004.

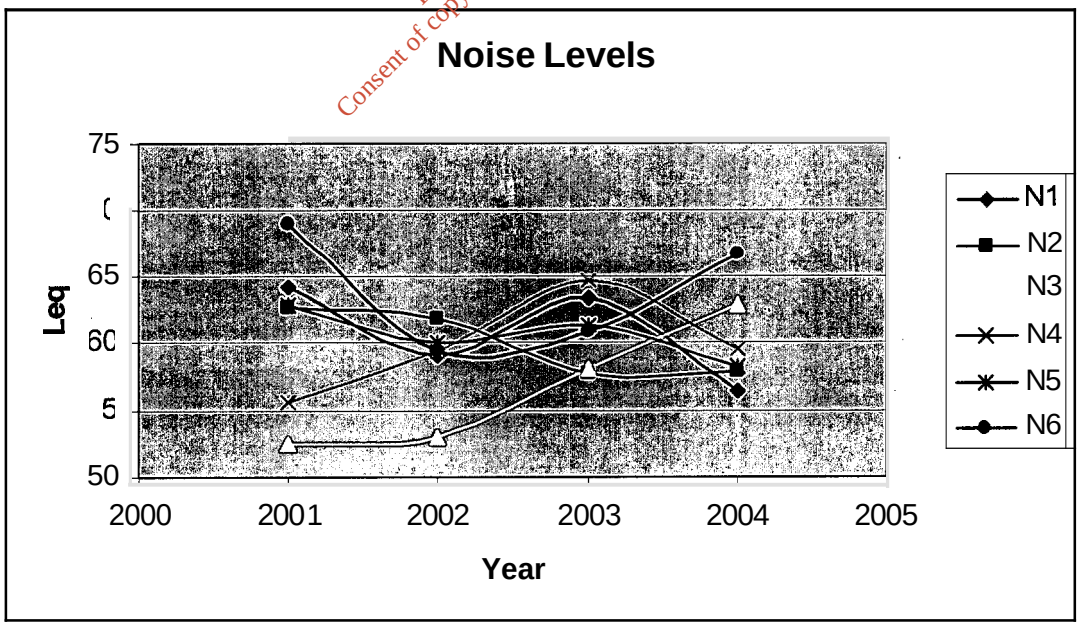
Noise

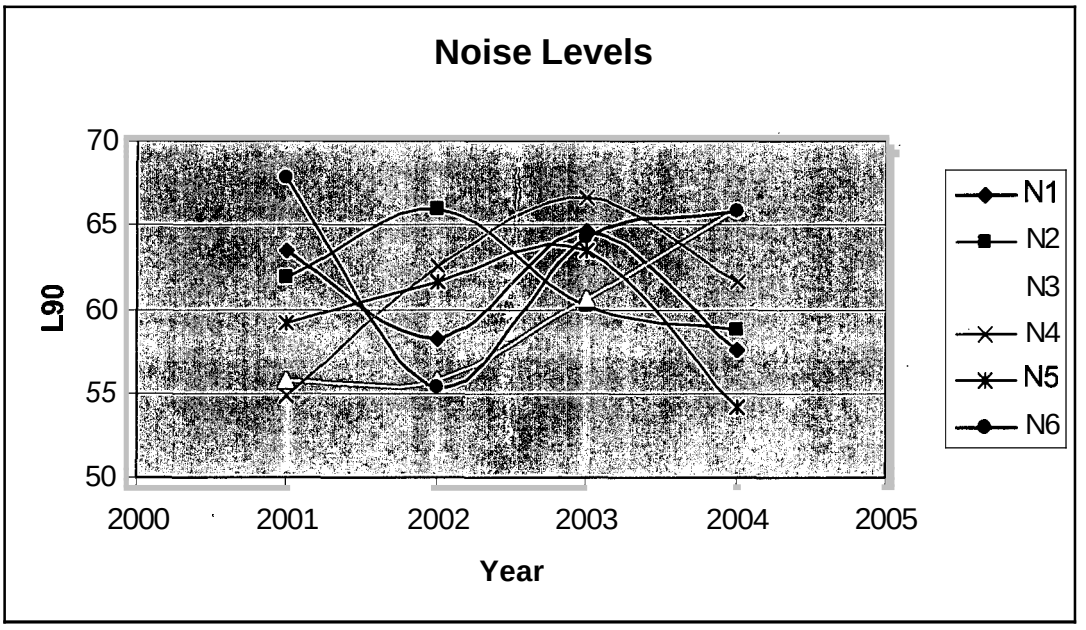
Noise monitoring is carried out at four locations around the perimeter of the facility and at two near by noise sensitive locations. Details of the results are given in the table overleaf and illustrated in graphs.

The noise levels of the site boundary Leq levels determined ranged from 52.5 to 64.7 which in most cases was attributed to passing road traffic. Levels of the L_{90} values (noise levels experienced for 90% of the monitoring period) ranges from 42.0 to 61.5, which is much lower than the Leq recording indicating that over much of the noise monitoring periods noise levels are quieter.

At the two noise sensitive receptors, the majority of the noise recorded was as a result of passing traffic.

	ID	Period (mins)	L_{eq} dB(A)	L_{10} dB(A)	L_{90} dB(A)	Max. P dB(A)
2001	N1	30	64.2	63.5	46.5	88.1
	N2	30	62.7	61.9	54.8	87.7
	N3	30	52.5	55.7	42.0	75.9
	N4	30	55.6	54.9	44.1	80.8
	N5	30	62.9	59.1	44.0	85.4
	N6	30	69.1	67.8	43.9	89.6
2002	N1	30	59.0	58.3	42.5	90.9
	N2	30	61.9	65.9	53.3	102.1
	N3	30	52.9	55.8	49.1	89.4
	N4	30	59.4	62.5	50.5	91.4
	N5	30	60.1	61.6	45.5	94.6
	N6	30	59.4	55.3	47.5	95.4
2003	N1	30	63.3	64.7	56.9	82.4
	N2	30	57.7	60.2	54.4	75.8
	N3	30	58.0	60.6	55.0	70.4
	N4	30	64.7	66.6	61.5	80.4
	N5	30	61.4	63.4	46.2	85.8
	N6	30	60.8	64.2	41.6	81.6
2004	N1	30	56.4	57.6	51.4	82.3
	N2	30	57.9	58.8	54.8	84.8
	N3	30	62.9	66.0	47.0	80.0
	N4	30	59.6	61.6	53.4	80.6
	N5	30	58.3	54.2	39.0	81.8
	N6	30	66.8	65.8	42.6	90.9





N1 is located at the back of the site. Levels of Leq recorded at this location ranged from 64.2 in 2001 down to 56.4 in 2004. During these monitoring periods the L_{90} levels recorded were significantly lower at 46.5 and 51.4 respectively.

N2 and N3 are located along the northern boundary of the facility, adjoining a roadway. Levels of Leq recorded at N2 ranged from 61.9 in 2001 down to 55.7 in 2004 while N3 recorded the highest levels in 2004 (66.0) and the lowest in 2001 (58.8). As with N1, levels of L90 recorded during the monitoring period were significantly lower indicating short periods of louder noise (i.e. passing traffic) were increasing the average noise levels recorded over the 30 minute monitoring period. It should be noted that on average the level of noise recorded at N3 is lower that than of the other monitoring stations.

N4 is located within the eastern region of the site. The lowest levels were recorded in were in 2001 (55.6) while the highest was recorded in 2003 **(64.7).** L_{90} levels recorded over these periods were 44.1 and 61.5 respectively.

The average noise levels recorded at the noise sensitive locations are generally similar to that recorded at the facility while the L90 appear to be slightly higher. Both of these locations are situated on roadways and the increased L90 accounts for an increase in passing traffic.

Surface Water Discharge

Surface water discharge is monitored on a quarterly basis at the facility. **A** visual inspection is undertaken on the clean roof water collected at the north-east comer of the Recycling Plant Building prior to discharge into the ground. In summary all inspections have reported the water to be clear and free of suspended solids. There has been no odour or evidence of iridescent reported.

Groundwater

The results of the on-going groundwater results to-date are detailed below.

Date PARAMETERS	Feb-02	Jul-02	Dec-02	Apr-03	Nov-03	Dec-04	Dec-04
pH	7.6	7.4	7.4	7.3	7.4	7.4	7.7
Conductivity uS/cm	813	809	821	722	849	822	796
TON mg/l N	-	0.304	<0.04	0.42	0.27	-	-
Chloride mg/l	24.9	23	24.9	23	28.4	30	27
Sulphate mg/l	48.5	48	45.5	48	52.3	44.5	48.3
Ammonia as N mg/l	<0.2	-	<0.2	0.01	<0.02	<0.02	<0.02
Total Phosphorus mg/l	-	-	<0.05	-	<0.05	0.05	<0.05
TOC mg/l	<5	-	42	-	42	<5	6
Nitrate as N mg/l	0.2	-	<0.03	-	0.27	0.2	<0.2
Nitrite as N mg/l	<0.03	-	<0.04	-	<0.03	<0.02	<0.02
Phosphate	-	-	-	<5	<0.16	<0.02	<0.02
Sodium mg/l	17	17	15	17	16	21	21
Potassium mg/l	2.3	2.6	2.3	2.4	1.7	1.6	6.2
Calcium mg/l	111	70	106	133	161	172	172
Boron mg/l	14	<0.5	-	<0.05	37	20	21
Chromium mg/l	<2	<0.01	<2	0.018	<2	<2	<2
Iron mg/l	<0.1	<0.5	0.3	<0.001	0.3	0.3	0.2
Nickel mg/l	<2	<0.01	<2	0.022	3	<2	<2
Manganese mg/l	24	0.169	104	-	26	4	4
Copper mg/l	<2	0.014	<2	-	3		
Zinc mg/l	4	<0.04	8	0.0008	<2	10	10
Arsenic mg/l	-	<0.01	-	<0.001	<2	-	-
Selenium mg/l	-	<0.01	-	<0.001	<2	-	-
Silver mg/l	-	<0.5	-	<0.05		-	-
Cadmium mg/l	<2	<0.001	<2	<0.0001	<2	<2	<2
Barium mg/l	24	<0.5	300	0.236	178	264	262
Lead mg/l	<2	<0.01	<2	<.001	<2	<2	<2
USEPA micro g/l	<10	-	<10	<0.5	<0.5	<0.5	-
Total coliforms MPN/100ml	<10	-	<1	-	11	<10	-
Faecal Coliforms MPN/100ml	<10	-	<1	-	<1	<1	-

In summary, the results of the groundwater monitoring to date have indicate that the quality of the groundwater beneath the site is clean and free from contamination. The majority of the parameters have remained constant since monitoring commenced in February 2002.

pH levels indicate that the water is neutral to slightly alkaline, ranging from 7.3 to 7.7. Levels of nutrients in the water are very low. Ammonia was detected only in the April 2003 sampling round and levels were low recorded at 0.01mg/l as N. Similarly, nitrate levels have been absent in a number of sampling rounds and when detected levels remain low (<0.27 mg/l-N). There have been no levels of nitrite or phosphates detected in any of the samples taken.

Levels of anions and cations have not varied and are generally present in low concentrations. Levels of Sodium, chloride, calcium and sulphate average at concentrations of ca. 17 mg/l, 26 mg/l, 132 mg/l, and 48 mg/l respectively.

In general levels of the heavy metals present were low. Levels of boron, iron, manganese and barium detected at higher concentrations in comparison to other metals with averages reported at 15 mg/l, 0.15 mg/l, 23 mg/l and 146 mg/l respectively. It should be noted that these parameters are common in Irish groundwaters. Trace levels of nickel, copper and zinc were detected (concentrations <10 µg/l) have been. There were **no** levels of chromium, arsenic, selenium, silver, cadmium, or lead detected in any of the samples.

No levels of volatile organic compounds have been detected in any of the samples taken to date.

Total coliforms were detected in low (11 no. per 100ml) concentrations in the November 2003 sampling round. These levels are not considered significant and may be a result of sampling technique rather than the groundwater itself. No level of faecal coliforms have been detected in the sample.

Gas

Gas monitoring was carried out at the facility, at the request of the agency, over a three month basis within an area to the south of the facility. Gas monitoring is not included in the schedule of works.

In *summary,* the landfill gas monitoring detected levels of methane in one gas probe only, GP-6, which is located within the subject area itself. These levels indicate the presence of some biodegradable matter (e.g. timbers, wood etc) present within the subject area. There were no levels of methane detected in any of the perimeter gas probes (GP-2 to GP-5) and as such landfill gas did not appear to be migrating off-site.

9. ***Clarify the results and interpretation of the odour survey (December 2004) which indicates odour concentrations of up to 185 ou/m^3.***

The odour assessment carried out at the facility detected odour levels of <20 to 185 ou_E/m^3. During the monitoring period the wind was blowing from a southerly direction and as such monitoring locations OD3 and OD4 were classified as upwind stations. The measured concentrations at these locations were 185ou_E/m^3 and 100ou_E/m^3 respectively. Downwind of the facility (OD1 & OD2) recorded concentrations of <20 ou_E/m^3 and 133 ou_E/m^3. As stated in the report, on the day of sampling there was no measured increase in odour levels downwind of the facility. At present there are no ambient odour guideline or limit values for Waste Transfer station operation. However comparison can be made to ambient odour levels recorded in a larger project carried out by Bord na Mona at Arthurstown Landfill Facility in Kill, Co. Kildare on behalf of South Dublin County Council as part of an Environmental Impact Statement (Bord na Mona Report BO51). These ambient odour measurements ranged from <12 to 143 ou_E/m^3. Significant odour levels were measured during this study which were subjectively described as background levels (ie no landfill gas odour detected during the sampling period). Over 150 odour measurements were taken at upwind, downwind and at number of sensitive receptors' locations over a six week period. The measured levels at the Midland Waste Facility are comparable to the range of values recorded during the Arthurstown landfill study.

It is important to note that ambient odour levels are dependent on a large number of factors. The most important of these are meteorological conditions, on-site activities and off site activities. On the day of sampling the odour measurements reflected the local conditions around each sampling location. In conclusion, the ambient odour study carried out in Arthurstown demonstrated that significant odour levels may be recorded for background odour.

10. ***Complete the relevant tables E.1(i) to E.1(v) as relevant from the Integrated Pollution Prevention and Control Licensing Application Form (available on ww.epa.ie) in respect of the on-site generator and any other air emissions from the facility.***

The generator is used to supply energy to the waste processing equipment at the facility.' During typical working operations the generator will be operation for ca. 5 hours daily and has an output of 500 kva /420 KW.
It is proposed to upgrade the existing electricity supply at the facility and negotiations are currently taking place with the ESB. It is anticipated that this upgrade will take place in early 2006.

11. Provide details of the quantity and quality of material to be excavated from the site to facilitate expansion of the yard area. Provide details of your proposals for the disposal/recovery of this excavated material and proposed examination and classification of this material prior to removal off-site.

The material to be excavated from the facility to allow for the expansion of the yard area is located within the southern portion of the facility and covers an area of ca. 1300m^2 (4% of the overall facility area). It consists of an embankment, which was backfilled with Construction & Demolition material (blocks of concrete, bricks, rubble clays etc), which has been in place within the facility since ca. 1993 The material originated from the site and is material which was pushed back from the northern section of the site during the construction of the Recycling Plant Building and hardstanding areas.

During intrusive excavations on the embankment, the underlying material was recorded as light brown stiff clay material (subsoil) with some weathered/broken concrete encountered (grey material). Small pieces of timber, broken bricks, cobbles and boulders were encountered. There was no biological material (other than wood & timber), plastics or other foreign material encountered.

The material (ca. 2000 m^3) will be removed using on-site machinery and will be processed through the recycling plant building as per the handling of waste procedure (Environmental Procedure EP2.0). The waste will be inspected and any unacceptable waste will be held within the quarantine area and removed off site to suitability licence facilities for final disposal.

I trust you find this in order.

Yours sincerely,

Ms. Sarah Casey
Bord na Móna Environmental Ltd.
On behalf of Midland Waste Disposal Company Ltd.

Comhairle Chontae na Mí
Halla an Chontae, An Uaimh, Contae na Mí
Fón: 046-21581
Cuirtear Fáilte Roimh Chomhfhreagras i nGaeilge

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Our Ref BF/bf3'02

Environment Section

22nd March, **2002.**

Mr. Francis Flynn
Midland **Waste** Disposal Ltd
Proudstown **Road**
Navan
Co. Meath

Re: Disposal of soiled water from your facility at Proudstown
EPA Waste Licence NO. 131-1

Dear **Sir,**

I refer to OUT letter of 23* **August,** 2000 with **regard** to the above.

I wish to advise that as a contingency arrangement the **use** of Trim Wastewater Treatment Plant is acceptable for disposal of **soiled** water from your **Waste** Facility at Clonmagaddam Proudstown Road, Navan, in the event **of** non-availability of Navan Wastewater Treatment Plant subject to the same pre-notification arrangements as **apply** in the **case** of **use** of the Navan Wastewater Treatment Plant.

Yours sincerely,

Brendan Fulham
Administrative Officer.