BORD NA MÓNA

BORD NA MÓNA ENVIRONMENTAL LIMITED

Administration,
Office of Licensing & Guidance,
Environmental Protection Agency,
Headquarters,
P.O. Box 3000,
Johnstown Castle Estate,
Co. Wexford.

19th July 2005

Reg. No.: 131-1

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

Dear Mr. Byrne,

Please find attached an original and 2 no. copies and 16 digital copies of the Article 12 and Article 13 Compliance Information as requested by the Agency in accordance with the Article 14(2)(b)(ii) of the Waste Management (Licensing) Regulations. If you have any queries please do not hesitate to contact me.

Yours sincerely,

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

MAIN STREET, NEWBRIDGE, CO. KILDARE, IRELAND.
TELEPHONE: (045) 431201. INT: +353-45-431201. FAX: (045) 434207. INT: +353-45-434207.

REGISTERED OFFICE: MAIN STREET, NEWBRIDGE, CO. KILDARE.
REGISTERED IN IRELAND NUMBER: 303313

MIDLAND WASTE DISPOSAL COMPANY LTD.
REVIEW OF WASTE LICENCE (131-1)

CLONMAGADDAN,
PROUDSTOWN,
NAVAN,
COUNTY MEATH

ARTICLE 13 COMPLIANCE INFORMATION

A Submission by Bord na Móna Environmental Ltd.
on behalf of Midland Waste Disposal Company Ltd.

Bord na Móna Technical Services Ltd. *July 2005*

INTRODUCTION

The headings of the relevant sections of the Environmental Protection Agency's (EPA) letter of the 8th June 2005 are outlined below in ***Bold Italics*** followed by the response.

ARTICLE 13 COMPLIANCE REQUIREMENTS

1. ***Provide details in relation to the quantity of foul effluent generated, level and rate of emissions arising from the activity, source of the foul water and quality analysis, and where relevant the period or periods during which such emissions are made. Provide details of the foul water storage provided on-site.***

The sanitary authority to whom foul water is discharged is Meath County Council. Foul water is discharged into the Wastewater Treatment plant in Navan, Co. Meath. In the unlikely event that the Navan treatment plant cannot take the foul, water Trim Wastewater Treatment plant will be used as a back-up. Attached is correspondence form Meath County Council confirming the use of the treatment plants.

The quantities of foul effluent generated at the facility since the granting of the waste licence 131-1 is detailed below:

Volumes of Foul Water Discharged of Site				
Month	**C.mt**			
	2001	**2002**	**2003**	**2004**
January	-	22	104	76
February	-	59	72	62
March	-	-	48	38
April	8	27	38	40
May	8	44	72	22
June	8	74	64	48
July	-	56	80	32
August	16	24	34	168
September	8	16	26	40
October	16	56	32	120
November	8	160	40	72
December	8	64	88	104
Total	**80**	**602**	**698**	**822**

There are 2 no. storage tanks (900 gallon each) held on site for the temporary storage of foul waters. Currently the foul water is transported in a 1600 gallon tanker and removed off site an average of 2 times a week in the summer months and 4 times a week in the winter.

Foul water discharged into the foul water storage tanks include the following:

- Any waters generated within the Recycling Plant Building, the glass storage bays, and composting area, are directed through the foul water drainage system directly into the foul water storage tank.
- Wastewater from the toilet facilities at the site are directed through a small scale wastewater treatment plant and into the foul water storage tank.
- Dirty water from the wash bay area is directed through a siltration tank and into the foul water storage tank.

A sample of the leachate was collected and a copy of the quality results are detailed below.

Quality of Foul Water	
Paramater	**mg/l**
pH (pH units)	6.6
Conductivity (µS/cm)	2399
Ammonia (as N)	18.0
BOD	1100
COD	2550
TOC mg/l	510
Nitrate mg/l as N	<0.2
Nitrite mg/l as N	8.5
Calcium	433
Magnesium	34.9
Sodium	98.6
Potassium	89.5
Iron	44.4
Manganese	1.92
Cadmium	7.4
Chromium	<0.2
Copper	0.29
Nickel	0.3
Lead	451
Zinc	1.62
Mercury	3.0
Sulphate	763
Chloride	96.2
Non-Purgeable Organics	<0.5

2. ***Assess the impact of the foul water discharge to the Sanitary Authority Sewer.***

The foul water generated at the facility is discharged directly into the wastewater treatment plant at Navan, County Meath with the possibility of utilising Trim treatment plant as a back-up facility.

Meath County Council have agreed to accept the foul water generated at the facility and have the ability to treat the water. As such there is no impact envisage from any foul water discharge from the facility into the sanitary authority sewer.

3. ***Provide an estimation of the raw and ancillary materials, substances, preparations, fuels and energy that will be utilised in or produced by the activity at the throughput of 95,000 tonnes per annum, including operation of the generator.***

Details of the raw and ancillary materials, substances, preparations, fuels and energy that are will have been used in the previous four years are detailed below. Estimates on material usage on-site have been determined using the percentage rate per tonnage of waste accepted at the facility and that proposed.

MATERIAL USAGE ON-SITE					
Fuel Type	**2001**	**2002**	**2003**	**2004**	**Estimated***
White Diesel (litres)	210,864	268,216	262,395	274,961	475,000
Green Diesel (litres)	19,679	39,614	60,374	94,924	190,000
Kerosene (litres)	1,036	2,323	1,500	2,174	4,750
Electricity (kWh)	70,380	108,330	138,640	129,520	250,000

* based on current operations including the operation of the generator. The volumes of white diesel usage on-site will be significantly lower once the electricity supply is upgraded.

4. ***It is noted that it is predicted that noise level at the noise sensitive locations are 50dBA. Provide an assessment of the impact of extending the hours of operation and confirm compliance with the night time noise limit of 45dB(A).***

The predicted noise level at the noise sensitive locations of 50dB(A) is based on the accumulative noise from the trommel, shredder, and waste processing equipment (such as the bobcat, forklift, volvos and Hitachi & grab). These will be operating over the period from 8 am to 8 pm. Outside of these hours (i.e. during period of night time noise limit of 45dB(A)), activities on-site will be restricted to waste acceptance and vehicle movements only. These activities will result in intermitted low level noise and as such noise levels are not predicted to be higher than the limit at this time.

5. ***Present the data necessary to assess the main effects the development is likely to have on material assets, the likely significant effects and measures envisaged to avoid, reduce and if possible remedy significant effects on material assets.***

The main effects of the development on material assets are detailed through the following:

(1) The change effected on the urban structure/the change in the value of the property in the area;

(2) Effects to amenity areas and areas of natural beauty.

(3) Architectural and archaeological heritage

(1) <u>The change effected on the urban structure/the change in the value of property</u>

This Environmental Impact Assessment has been compiled in relation to an increase in tonnage of waste being handled at the facility. There will be no change to the infrastructure or operations at the facility and as such there will be no effect on the urban structure or change in value of property.

The site is situated within an industrial setting with a number of industrial units located along the roadway. The increase in tonnage of the facility will

not effect the roadways, existing telecommunications or electricity supplies to the area. In addition there is no foreseen increase in the water requirement for the site.

Environmental monitoring and working procedures currently in place at the facility will be maintained to ensure no nuisance on the surrounding environment occur as a result of activities on-site.

(2) Effects to Amenity Areas and Areas of Natural Beauty

The proposed development site and the immediate surroundings are not designated as a Natural Heritage Area or a proposed candidate Special Area of Conservation (pSAC), nor is it designated under any of the other nature conservation or landscape designations currently used in Ireland.

Activities at the facility will remain as that currently occurring at the site.

(3) Architectural and archaeological heritage

There were no extant or surface traces of sites of archaeological potential and/or interest identified on the site and as such there are no direct impacts predicted.

6. ***Provided estimated types and quantities of expected residues and emissions resulting from the proposed development including pollutants of surface water, groundwater, air, soil and substrata and noise.***

Surface Water

There are no surface water emissions from the facility.

Groundwater

Emission to groundwater are limited to clean surface water run-off generated from hardstanding areas where there is no waste processing. The run-off is directed through a siltration trap and oil interceptor prior to discharge to ground. Emissions to groundwater are expected to increase as a result of increasing hardstand at the facility. Currently there is 9702 m^2 of hardstanding at the facility which equates to a maximum daily run-off of 24.25 m^3 per day. It is proposed to increase the hardstanding areas within

the southern sections of the site by 3500 m^2 resulting in an increased maximum daily run-off of 8.75 m^3.

Air

Emissions to the air are identified as dust, particulates, odour and generator emissions. It is not expected that these emissions will increase from current levels as a result of the proposed increase in tonnage. Environmental procedures and work instructions are currently in place at the facility and these will be maintained to ensure there are no increases in emissions to air.

All waste handling and processing will be carried out within the recycling plant building. The increased tonnages will increase the level of traffic movement on site which may potential increase the levels of dust generated on hardstanding areas. Speed limits on site, damping down of hardstanding areas during periods of dry weather and the weekly site cleaning will ensure there are no increases in emissions.

It is proposed to upgrade the electricity supply at the facility in December 2005 and as such the generator will no longer be in use.

Soil

There are no emissions to soil/substrata, other than clean surfacewater run-off (see groundwater above).

Noise

Noise at the facility is generated through the operation of equipment on-site and the movement of vehicles within the facility. It is not proposed to increase the level of processing equipment used on-site and as such noise levels at the facility are not predicted to increase however periods of intermittent noise may increase. Predictive noise measures for the facility were determined for a period when all equipment to be employed at the facility were at use. These included the waste processing equipment (trommel and conveyor belt) and waste handling equipment (bobcat, forklift, and grabs). The predictive noise levels were determined at 55 dB(A) and 50 dB(A) at the noise sensitive. This level of predicted noise is below the emission limit of 55 dB(A) for day time noise. There will be no processing of waste out side of day time noise periods of (08:00 – 22:00).

7. ***Identify significant likely direct effects on the environment resulting from use of natural resources (including generator).***

The direct use of natural resources at the facility includes the use of fuel in the generator and vehicles and water usage on-site. Water usage is limited to domestic usage and the damping down of hardstanding during dry periods. Rainfall is collected for use at the facility and surface water run-off is discharged to groundwater. It is therefore considered that there is no direct effect on the environment.

Fuel usage on-site and the use of the generate has the potential in directly effecting the environment through the use of fossil fuels and the emissions of CO_2, NO_X, SO_X and particular matter.

8. ***Identify any difficulties such as technical difficulties or lack of knowledge encountered in compiling required information.***

It is a requirement of the EIA Regulations (European Communications (Environmental Impact Assessment) (Amendment) Regulations, 1999 (S.I. No. 93 of 1999) Second schedule, 2(d)) to provide an indication of any difficulties (technical deficiencies or lack of know-how) encountered by the developer in compiling the required information. No significant technical difficulties were encountered in preparation of this report.

A Copy of the revised Non-Technical Summary is attached in Appendix 1.

Appendix 1:

Revised Non-Technology Summary

REVIEW OF WASTE LICENCE FOR MIDLAND WASTE DISPOSAL COMPANY LTD., PROUDSTOWN, NAVAN, COUNTY MEATH

- An Environmental Impact Statement -

NON-TECHNICAL SUMMARY

Date: July 2005

A Submission to the Environmental Protection Agency by Bord na Móna Environmental Limited on behalf of Midland Waste Disposal Company Ltd.

TABLE OF CONTENTS

1 INTRODUCTION

This Non-Technical Summary is a concise summation of the primary environmental aspects as outlined in the main Environmental Impact Statement.

Bord na Móna Environmental Limited was commissioned by Midland Waste Disposal Company Ltd., to complete an Environmental Impact Statement to accompany a Review of a Waste Licence (Reg. 131-1) to the Environmental Protection Agency (the Agency) concerning their facility at Clonmagaddan, Proudstown, Navan, County Meath. No significant technical difficulties were encountered in preparation of this report.

Midland Waste Disposal Company Ltd., operate a waste transfer station at Clonmagaddan, Proudstown, Navan, Co. Meath (grid reference: E2868 N2698). The facility currently operate under a Waste Licence Reg. No. 131-1.

The application for the review of the waste licence (WL131-1) is to seek approval from the EPA for the following:

- Increase the annual tonnages;
- Extent the hours of operation;
- Increase the number of waste containers held outside over night at the facility.
- Introduce Class II of the fourth schedule "Use of waste obtained from any activity referred to in a preceding paragraph of this schedule"

2 PROJECT DESCRIPTION

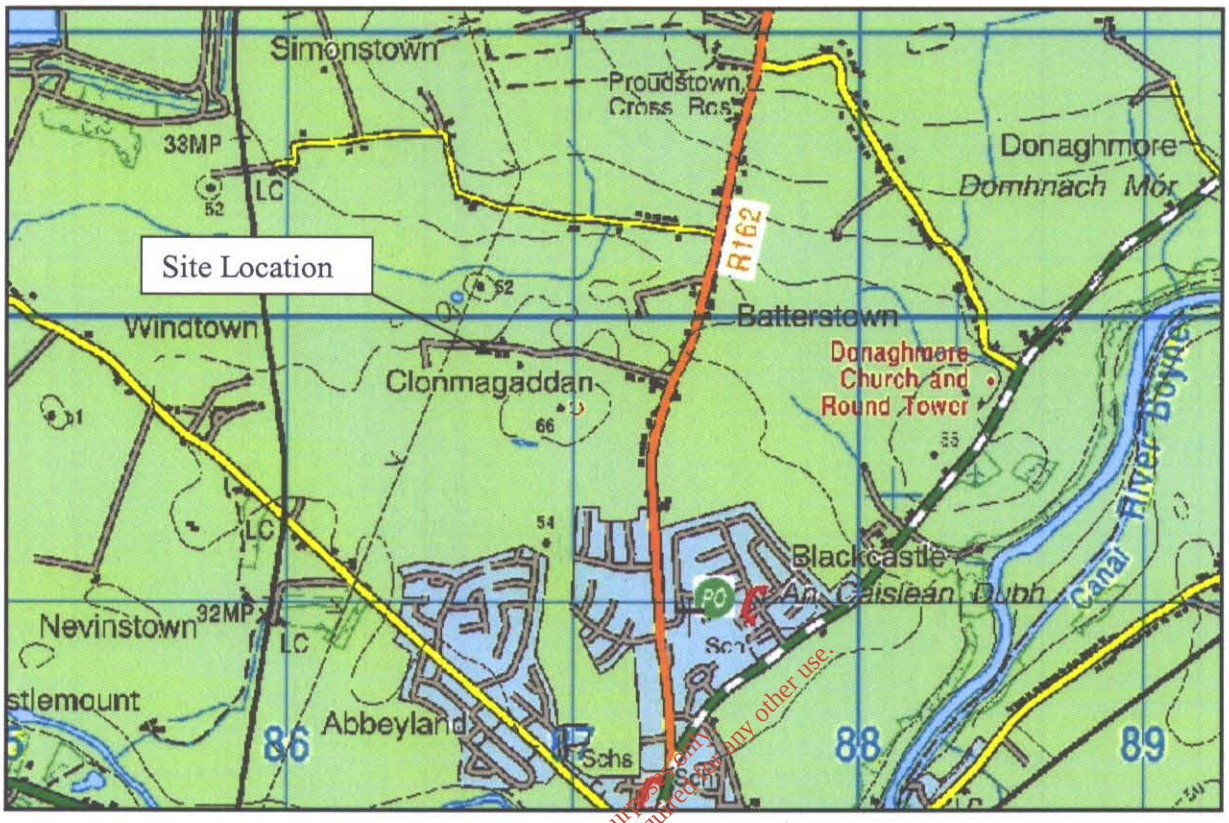
2.1 Site Description

Midland Waste Disposal Company Ltd., have operated at the facility since 1991 and became part of the Advanced Environmental Services (AES) group in 2000.

The facility is located in a former limestone quarry, located on the northern outskirts of the town of Navan in County Meath. The site is situated within an industrial area of the town with industrial premises located to the north of the facility. There are agricultural lands situated to the east and west of the facility. There is a residential area located ca. 300 m south of the facility. The site is located off a cul-de-sac from the main R162 Navan-Kingscourt Road with other industrial units of the roadway.

The site location is shown on Figure 1.1/1 overleaf.

Figure 1.3/1: Site Location



There is no surface water features located within the immediate vicinity of the facility, with the nearest water coarse located ca. 500m north of the site. This stream is a minor tributary of the River Blackwater.

2.2 Project Description

Midland Waste Disposal Company Ltd., Operate a waste transfer station at their facility in Clonmagaddan, Proudstown, Navan, County Meath. The nature of the waste is that of domestic household waste, industrial (non-hazardous), commercial and construction and demolition. It is proposed that when the facility is operating at full capacity that it will accept 95,000 tonnes of waste per annum.

The licenced waste disposal and waste recovery activities that take place at the site as per the Waste Management Act, 1996, are outlined as follows:

Third Schedule -Waste Disposal Activities

- Class 11: Blending or mixture prior to submission to any activity referred to in a preceding paragraph of this schedule.

- Class 12: Repackaging prior to submission to any activity referred to in a preceding paragraph of this 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 -Waste Recovery Activities

- Class 2: Recycling or reclamation of organic substances which are not used as solvents (including composting and other biological transformation processes).
- Class 3: Recycling or reclamation of metals and metal compounds
- Class 4: Recycling or reclamation of other inorganic materials
- Class 12: Exchange of waste for submission to any activity referred to in a preceding paragraph of this 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.
- In is proposed to include the Class 11 of the Fourth Schedule "Use of waste obtained from any activity referred to in a preceding paragraph of this schedule" as part of the licence review.

FACILITY DESIGN

The following infrastructure is existing at the facility:

- Site security at the facility consist of 810m of 8 ft continuous palisade fencing along the entire boundary; 3 no. entrance ways into the site
- Hardstanding area over all operational areas of the site;
- Site accommodation consists of office building, port-a-cabin for canteen facilities and a mobile home for site security
- Workshop
- Weighbridge connected to computerised system
- Recycling Plant Building with leachate collection system; Trommell with picking line, Composting unit, in-floor baling system, waste storage areas;
- Glass storage bay;
- Fuel storage areas
- Waste Segregation Area
- Silt-trap and oil interceptor;

It is proposed to install the following;

- Increase area of hardstanding to 3500m^2;
- Second composing unit.

Bulk fuel storage at the site consists a 6000 gallon main diesel tank, a 200 L kerosene storage tank, and 2 no. 300 gallon hydraulic oil/Engine oil tanks in workshop/diesel shed. These tanks are located within fully reinforced concrete bunded area that conform to the standard bunding specification (BS8007-1987) with the capacity of holding 110% of the tank capacity. Lubricating greases, gear oils, and steering oils are also used on-site and these are held within a bunded area within the workshop. All bunds have been integrity tested under the conditions of the existing waste licence. Minor quantities of cleaning agents, and paints are maintained on-site. Waste oil generated from plant is removed by an authorised contractor (Allied Waste Oil) on an annual basis.

Water used at the facility is sourced from Kilsaran Well and rainwater run-off from roofed areas. There are no meters on either of these supplies therefore calculation of water usage is not possible. Water usage is restricted to the canteen/sanitary requirements. Energy usage on site comprises of electricity, and diesel for the on-site plant equipment.

Surface water run-off from all hardstanding areas is directed into the surface water drainage system. Currently there is one surface water drainage systems at the facility which directs all water from the site towards the north-west corner of the site where the water is discharged to the ground through a soakpit via an oil interceptor. It is proposed to install a second drainage system at the facility to divert the surface water run-off from the southern section of the site towards the eastern boundary, where the water will be discharged to the ground through a soak pit (via an oil interceptor).

A small scale treatment system (Bord na Móna Puraflo™ system) is installed at the facility to services all domestic wastewaters emanating from the office buildings, canteen and site accommodation. The discharge from the treatment system discharges into the foul water holding tanks which are emptied on a regular basis and discharged into the local authority treatment plant.

ON-SITE OPERATIONS:

Currently, normal operational hours at the Midland Waste Disposal Ltd. facility are between the hours of 08:00 to 20:00 Monday to Saturday. It is proposed to extend the hours of operation within the facility from 06:00 to 20:00 Monday to Saturday.

Theses wastes are characterised as Domestic household waste; Commercial; Industrial; Construction and Demolition and Hazardous material limited to batteries, fluorescent tubes & tyres.

All wastes entering the site are forwarded to the weighbridge system which records the details and quantities of waste accepted on-site. After weighing, each waste load is brought to the enclosed Recycle Plant Building, where it is deposited on the floor for visual inspection to ensure that all wastes comply with the requirements of the existing Waste Licence, Register No. 131-1. The Waste Segregation Manager (Mr. Bernard Kelly) is responsible for carrying out the waste visual inspections and for maintaining a written record of all inspections. Written records of each inspection is recorded.

Within the Recycling Plant Building the waste is sorted according to its recycling potential and is either deemed suitable for recycling/recovery or compacted within one of the compactors on-site and transported off-site for final disposal (non-recoverable waste). The categories of waste deemed suitable for segregation and recycling is dependent on available markets for such materials. Materials commonly accepted for recycling include Steel/ Iron, Cardboard/Newsprint, Timber, Construction & Demolition waste, Green Waste, Plastic and Glass and on occasion empty gas cylinders and tyres. All waste not deemed suitable for recycling/recovery is loaded into designated Ro-Ro Bins, or a 40 foot injector trailer or is compacted within one of two compactors on-site. All compacted wastes are sealed within specialised containers and are subsequently transported for authorised disposal. All waste being transported from the facility by Midland Waste Disposal Company Ltd. is weighed on the weighbridge. An individual weigh docket is printed for each waste load.

Construction and Demolition waste is sorted through the trommel and sorting line. All recyclable material is forwarded to off-site licenced facilities for recovery. Stone & bricks is used for the construction of roadways and soils/subsoils are used in land reclamation. Industrial & commercial waste is directed either to the trommel where recyclable matter is recovered or directly to the in-floor baler for recovery off-site. Any residual material is forward to landfill for disposal. Household waste is directed through the trommel and sorting line. Recovered organic fines are directed to the VCU unit for composting. Dry mixed recyclables are directed to the in-floor baler for bulk load to be forwarded off site for recovery.

Plant used at the facility will include a weighbridge, 2 no. Industrial compactors, 2 x Shredders, 1 no. Baler, 1 no. Bobcat, 1 no. Forklift, 1 no. Samsung grab, 1 no. Volvo loading shovel, 2 x Hitachi & grabs, 2 x Trommell & conveyor system, 1 no. Blender unit, 1 no. VCU Composting unit

3 ENVIRONMENTAL IMPACT STATEMENT

The environmental impacts of the waste transfer facility are described within the Environmental Impact Statement under the following categories:

Human Beings	Ecology
Geology	Water
Air	Traffic
Noise	Landscape
Climatic Factors	Interactions of the above
Cultural Heritage	

In order to determine the impacts of the proposed facility on the its environs an assessment was undertaken using the following information:

- As part of the initial EIS undertaken at the facility, environmental monitoring was carried out by Bord na Móna Environmental Consultancy Services in November 1999.

- Since the granting of the Waste Licence 131-1 in November 2001, on-going environmental monitoring has taken place at the facility.

3.0 Impacts of the Proposed Facility

3.1 Air

In addition, to initial air monitoring at the facility, as part of the previous EIS, and on-going monitoring and odour assessment at the facility has been carried out to determine the potential impacts of the operation of the facility.

Potential air emissions were examined under two separate headings:

- Odour
- Dust

Odour: Due to the nature of the development the generation of odours may occur through the handling of waste, mainly the household municipal waste faction, at the facility. The generation of odours and the associated nuisance it can potential cause depends of the (i) dispersion of the odours, (ii) the prevailing wind and (iii) the distance to the nearest sensitive receptors i.e. nearest residential dwelling. An odour assessment at the facility concluded that the upwind and downwind odour concentrations were similar on the day of sampling and visual observations on the site indicated that the potential odorous emissions from the Midland Wastes Disposal Company Ltd's facility did not contribute to increased odour levels downwind of the site facility. On-going good operational practises at the site and inspections will ensure no odour nuisances are caused as a result of the activities at the facility.

Dust: Dust may be generated at the facility through the movement of HGV's within the site boundary and the movement of friable material within the site. The results of the dust monitoring at the facility indicate that levels of dust are higher along the northern boundary along the roadway, and close to an adjacent industrial site. Dust directional gauges at these monitoring stations predominantly indicate that dust is being generated from the east and west (traffic movement) and from the north (off-site activities), rather than from the working areas of Midland Waste Disposal Company Ltd. On-going good operational practises at the site and inspections will ensure no dust nuisances are caused as a result of the activities at the facility.

Generator Emissions: The generator is maintained regularly to ensure there are no impacts on the environmental from the emissions emitted from the generator. It is proposed that the generator will be replaced by an upgrade in the electricity supply.

Mitigation Measures

1. Odour: In order to reduce the generation of odours at the facility all waste acceptance and handling procedures are carried out to ensure the waste is sorted as quickly as

possible to reduce the generation of odours, all wastes are sorted within the Recycling Plant Building, all wastes are held within covered/sealed containers and nuisance inspections are carried out at the facility.

2. Dust: In order to minimise the generation of dust speed restrictions are in place at the facility, all waste acceptance and handling procedures are carried out to ensure the waste is sorted as quickly as possible to reduce the generation of odours, all wastes are sorted within the Recycling Plant Building, road sweeping is carried out and nuisance inspections are carried out at the facility

3.2 Soil & Geology

The operational areas of the site are overlain by an impervious hardstanding and as such there is no soil covering.

Quaternary sediments underlying the site are glacial in nature and originate from the Midlandian glaciation. This geological period span from about 14,000 to 10,000 years before present (BP)). These sediments are referred to as the Dublin Till. They consist of firm to stiff sandy gravely clays with clast (varying in size from cobbles to boulders) present.

According to published literature the bedrock geology in the vicinity of the site is documented as being dominated by Lower Palaeozoic Metasedimentary and Metavolcanic Bedrock units. Immediately to the south of the site, the surrounding area is indicated to be underlain by bedrock associated with the Navan Group Basal Lower Carboniferous Formations.

Mitigation Measures

All wastes will be stored in areas within the leachate catchment areas in accordance with relevant environmental guidelines and recognised standards. All bunds will be tested in accordance with the waste licence conditions. In addition, oil absorbent materials will be kept on site in close proximity to any fuel storage tanks or bowsers during site development works.

As there are no geological features of any significance present at or beneath the site, the proposed development will have no impact on local geology.

3.3 Hydrogeology

Midland Waste Disposal Co. Ltd., is located on the outskirts of Navan in County Meath. There is no surface water features located within the immediate vicinity of the facility, with the nearest water coarse located ca. 500m north of the site. This stream is a minor tributary of the River Blackwater.

Any surface water run-off from hardstanding areas at the facility, is currently directed towards the front of the site, where it is collected in the surface water drainage system. This collected water is discharged through a soakaway (via a siltration trap and oil interceptor) to ground.

There are no discharges to surface water and no surface water bodies within the vicinity of the site, as a consequent of this there is no impact to surface waters at the facility, and as such is not dealt with in this EIS.

Desk-based information on the underlying hydrogeological conditions beneath the proposed development site was obtained through the Geological Survey of Ireland (GSI) and from information held on files within Bord na Móna Environmental Consultancy Services. There were no intrusive ground investigations undertaken as part of this study.

Aquifer Classification

The majority bedrock units underlying the site and surrounding area are classed by the Geological Survey of Ireland as poor aquifers except in localised zones (**Pl**) with locally important aquifers which are moderately productive only in local zones to the south (**Ll**).

Groundwater Vulnerability

Using the criteria as established by the GSI and based on current assessment data the groundwater resources in the vicinity of the Site may be classified as Extremely vulnerable (E). This is based on bedrock located at the surface.

Groundwater Quality

The results to date 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.

Potential Impacts of the Proposed Development/ Mitigation Measures

The proposed development will entail the construction of a hardstand cover over a large area of the site and as such allows for the protection of groundwaters.

1. Groundwater Discharges: Surface water run-off from the hardstanding areas is directed through a soakaway via a siltration trap and oil interceptor, for discharges to ground. The monitoring of groundwater emissions from the facility is carried out on a quarterly basis in compliance with Schedule (E) the existing Waste Licence (Reg. No. 131-1).

All waters are directed through a siltration trap and oil interceptor prior to discharge to groundwater. As a result of the mitigation measures currently in place at the facility, it is considered that there is no impacts to groundwaters from discharges to ground. Emissions to groundwater are expected to increase as a result of increasing hardstand at the facility. Currently there is 9702 m^2 of hardstanding at the facility which equates to a maximum daily run-off of 24.25 m^3 per day. It is proposed to increase the hardstanding areas within the southern sections of the site by 3500 m^2 resulting in an increased maximum daily run-off of 8.75 m^3.

2. Sewage: Sewage emanating from the office and site toilet facility (13 people at a hydraulic loading of 50 1 per person per day = 0.65 m3/d) is directed into a wastewater treatment system (PurafloTM) for treatment. The final effluent is directed into the foul water storage tank which is emptied on a regular basis.

(3) Leachate Generation

A leachate collection system is in place in order to collect leachate emanating from the recycling plant. Leachate is conveyed via dedicated drains to the foul water storage tank. The foul waters are temporarily stored within the tank for subsequent collection when required by tanker. In 2004 822 m^3 of foul water was discharged into the treatment plant. Final disposal is through Navan wastewater treatment plant. There is no impact envisaged of the discharge of foul waters to the wastewater sewer. The foul water storage tank is fitted with an automatic level alarm to ensure the tank does not overflow.

(4) Storage of Fuels: The major diesel storage tank is located within bunded structure. The integrity of existing bunds is not known. Midland Waste Disposal Company Ltd. propose to install new oil interceptor units for the diesel tank/dispensing unit and absorbent kits for placement at various strategic locations across the site.

3.4 NOISE

Noise emissions from the facility are generated through the operation of equipment on-site and the movement of vehicles within the facility. Noise predictions on the impact of the facility at the nearest sensitive receptor has been carried out and these indicate that the noise will remain below the emission limits as stipulated in the existing waste licence. The results of the on-going monitoring at the facility indicate that noise within the area is resulting

predominantly traffic noise. The levels of noise coming from the facility at the noise sensitive receptor were insignificant in comparison to traffic noise and these locations. Good operational practises at the facility will be maintained to ensure no noise nuisances are caused as a result of the workings of the facility. These will include Proper maintenance of vehicles and equipment, waste handling operations carried out indoors and on-going monitoring of site noise levels.

Potential Impacts of the proposed development

The main source of noise on-site will be from the delivery vehicles and the operational units.

Mitigation Measures

Not withstanding good operational practises at the facility, the following will be undertaken: Proper maintenance of vehicles and equipment, including the conveyors, screening equipment, shovel loaders and compacting machinery; All operations concerning sorting / recycling of material will take place indoors; Monitoring of site noise levels to ensure compliance and implementation of cost effective control measures; The control of on-site activities through the implementation of good management practices will combine to ensure that the noise generated at the site will not have any undesirable effects on the existing neighbouring environment; Selection of plant with low inherent potential for generation of noise and / or vibration

3.5 Human Beings

Noise

Noise is an identified form of air pollution and uncontrolled it can cause nuisance or a deterioration of amenities and the quality of human life. The potential impact of the waste transfer facility on noise levels within the area is associated with the noise generated through on-site activities. It was concluded that the noise levels from on-site activities associated with the operational phase of the facility site will not pose a significantly impact on the ambient noise levels. Specifically, it is concluded that noise levels at the nearest sensitive locations (occupied residential premises & GAA pitch) will not significantly deviation above background daytime noise levels and no clear audible tonal noise emissions will emanate from the facility.

Traffic

The Midland Waste Recycling plant is situated on the northern outskirts of Navan town. The site is accessed via the R162 Navan - Kingscourt Road and is situated approximately 500m down a cul-de-sac to the townland of Clonmagaddan. The facility is situated adjacent to the

southern side of this cul-de-sac and is accessed via one of 3 No. entrance ways (Office complex, weighbridge and general entrance).

It was considered that the road is of good design and state of repair and is maintained by Midland Waste Disposal Company Ltd. Traffic management on-site is satisfactory and the hardstanding area on-site is of sufficient size to accommodate present and future volumes of traffic.

Human Health

A number of air pollutants have known or suspected harmful effects on human health and the environment. In many areas these pollutants are principally the products of combustion from space heating, power generation or from motor vehicle traffic. The air pollutants derived from the development is considered to be from particular dust emissions.

Dust emissions from the operations of the facility will be minimised by careful on site management. This will ensure that potential problems with fugitive dust emissions from the site will be negligible.

Site Structure / Land Use

Any potential impacts of the facility on the existing structural and land usage of the area are considered insignificant. The area is being developed for industrial usage with a number of industrial units being development along the roadway over the past four years. There will be no change to the operation of the site as a waste transfer station. This site is located within a disused quarry, with the old quarry walls acting as protective berms around the east, west and south. Views for the northern boundary are protected by existing line of mature trees.

Material Assets

The main effects of the development on material assets are detailed through the following:

(1) The change effected on the urban structure/the change in the value of the property in the area;

(2) Effects to amenity areas and areas of natural beauty.

(3) Architectural and archaeological heritage

(1) The change effected on the urban structure/the change in the value of property

This Environmental Impact Assessment has been compiled in relation to an increase in tonnage of waste being handled at the facility. There will be no change

to the infrastructure or operations at the facility and as such there will be no effect on the urban structure or change in value of property.

The site is situated within an industrial setting with a number of industrial units located along the roadway. The increase in tonnage of the facility will not effect the roadways, existing telecommunications or electricity supplies to the area. In addition there is no foreseen increase in the water requirement for the site.

Environmental monitoring and working procedures currently in place at the facility will be maintained to ensure no nuisance on the surrounding environment occur as a result of activities on-site.

(2) Effects to Amenity Areas and Areas of Natural Beauty

The proposed development site and the immediate surroundings are not designated as a Natural Heritage Area or a proposed candidate Special Area of Conservation (pSAC), nor is it designated under any of the other nature conservation or landscape designations currently used in Ireland.

Activities at the facility will remain as that currently occurring at the site.

(3) Architectural and archaeological heritage

There were no extant or surface traces of sites of archaeological potential and/or interest identified on the site and as such there are no direct impacts predicted.

Nuisances

In compliance with condition 6.2 of the existing waste licence (re. No. 131-1), weekly environmental nuisance inspections are carried out at the facility. These inspections are carried out and recorded on the "*Weekly Environmental Nuisance Inspection Form EWF 1.3*". Inspections are carried out for any nuisances caused by the presence of vermin, birds, flies, mud, litter, dust and odours.

3.6 Flora & Fauna

A baseline ecological survey was conducted at the site. All the species identified within the site are common throughout the Irish countryside and neither the site nor its surrounds are designated as a conservation area, it is deemed that the site is of low conservation value. Hedgerows are located along the site boundary. Species composition in the area are relatively

common and as such on-site activities would not be expected to impact in any way on current habitat conditions. The existing environment is not designated as a Natural Heritage Area or a Special Protection Area under the Birds Directive or as a Special Conservation Area in accordance with the Habitats Directive, nor, is it designated under any of the other nature conservation designations currently used.

Mitigation Measures

There are no mitigation measures planned due to the nature of the site.

3.7 Landscape and Visual Impacts

The Midland Waste Recycling plant is situated on the northern outskirts of the town of Navan in County Meath. The site is situated within an Industrial area with the nearest residential area located approximately 300m south of the facility. The site is accessed via the R162 Navan - Kingscourt Road and is situated approximately 500m down a cul-de-sac to the townland of Clonmagaddan. The facility is situated adjacent to the southern side of this cul-de-sac and is accessed via one of 3 No. entrance ways.

It is considered that the proposed waste handling procedures will not visually impact on the surrounding areas. Visibility of the site (from the south, east, & west) is prevented by a local topography and the northern boundary is planted with trees which prevents a view of the facility.

3.8 Traffic

The Midland Waste Recycling plant is situated on the northern outskirts of the town of Navan in County Meath. The site is situated within an Industrial area with the nearest residential area located approximately 300m south of the facility. The site is accessed via the R162 Navan - Kingscourt Road and is situated approximately 500m down a cul-de-sac to the townland of Clonmagaddan. The facility is situated adjacent to the southern side of this cul-de-sac and is accessed via one of 3 No. entrance ways.

The roadway to the facility is of good design and state of repair and is maintained by Midland Waste Disposal Company Ltd with association with the other industrial units utilising the roadway. Vehicles arrive on-site every 30 minutes approximately. Traffic management on-site is satisfactory and the hardstanding area on-site is of sufficient size to accommodate present and future volumes of traffic.

As part of the proposed increase of waste handling, it is anticipated that traffic movements will increase from 60 traffic movements to approximately 80 traffic movements per day.

Based on the existing industrialised nature of surrounding area it is contended that such a small increase in traffic movements will have a negligible effect on the surrounding road network or the environment.

3.9 Climatic Factors

It is not considered that the development will have any impact on the climate in this area.

3.10 Cultural Heritage

An archaeological assessment of the proposed development site and its environs was undertaken by a specialist. The assessment included a desk based study and a site walkover survey.

A preliminary investigation of the Cultural Heritage of the site and surrounding environs was carried out. There are no historically important sites within the immediate vicinity of the facility. It is anticipated that the operation of the waste transfer facility will not impact on the Cultural Heritage of the area.

The cultural heritage assessment did not identify the presence of any areas of archaeological or cultural interest within the site boundaries that would be impacted either directly or indirectly by the site development or operations.

4.0 CONCLUSIONS

In summary, it is contended that the negative impacts of the facility will be minimised or eliminated by adherence to the mitigation measures. The Environmental Impact Statement, therefore, shows that no significant adverse effect on the environment should occur as a result of the operation of the facility

MIDLAND WASTE DISPOSAL COMPANY LTD.
REVIEW OF WASTE LICENCE (131-1)

CLONMAGADDAN,
PROUDSTOWN,
NAVAN,
COUNTY MEATH

ARTICLE 12 COMPLIANCE INFORMATION

A Submission by Bord na Móna Environmental Ltd.
on behalf of Midland Waste Disposal Company Ltd.

Bord na Móna Technical Services Ltd. *July 2005*

INTRODUCTION

The headings of the relevant sections of the Environmental Protection Agency's (EPA) letter of the 8th June 2005 are outlined below in ***Bold Italics*** followed by the response.

ARTICLE 12 COMPLIANCE REQUIREMENTS

1. ***Confirm the name of the Sanitary Authority to whom foul water is discharged. Provide details in relation to the quantity of foul effluent generated, level and rate of emissions arising from the activity, source of the foul water and quality analysis, and where relevant the period or periods during which such emissions are made. Provide details of the foul water storage provided on-site.***

The sanitary authority to whom foul water is discharged is Meath County Council. Foul water is discharged into the Wastewater Treatment plant in Navan, Co. Meath. In the unlikely event that the Navan treatment plant cannot take the foul, water Trim Wastewater Treatment plant will be used as a back-up. Attached is correspondence form Meath County Council confirming the use of the treatment plants.

The quantities of foul effluent generated at the facility since the granting of the waste licence 131-1 is detailed below:

Volumes of Foul Water Discharged of Site				
Month	**C.mt**			
	2001	**2002**	**2003**	**2004**
January	-	22	104	76
February	-	59	72	62
March	-	-	48	38
April	8	27	38	40
May	8	44	72	22
June	8	74	64	48
July	-	56	80	32
August	16	24	34	168
September	8	16	26	40
October	16	56	32	120
November	8	160	40	72
December	8	64	88	104
Total	**80**	**602**	**698**	**822**

There are 2 no. storage tanks (900 gallon each) held on site for the temporary storage of foul waters. Currently the foul water is transported in a 1600 gallon tanker and removed off site an average of 2 times a week in the summer months and 4 times a week in the winter.

Foul water discharged into the foul water storage tanks include the following:

- Any waters generated within the Recycling Plant Building, the glass storage bays, and composting area, are directed through the foul water drainage system directly into the foul water storage tank.
- Wastewater from the toilet facilities at the site are directed through a small scale wastewater treatment plant and into the foul water storage tank.
- Dirty water from the wash bay area is directed through a siltration tank and into the foul water storage tank.

A sample of the leachate was collected and a copy of the quality results are detailed below.

Quality of Foul Water	
Paramater	**mg/l**
pH (pH units)	6.6
Conductivity (µS/cm)	2399
Ammonia (as N)	18.0
BOD	1100
COD	2550
TOC mg/l	510
Nitrate mg/l as N	<0.2
Nitrite mg/l as N	8.5
Calcium	433
Magnesium	34.9
Sodium	98.6
Potassium	89.5
Iron	44.4
Manganese	1.92
Cadmium	7.4
Chromium	<0.2
Copper	0.29
Nickel	0.3
Lead	451
Zinc	1.62
Mercury	3.0
Sulphate	763
Chloride	96.2
Non-Purgeable Organics	<0.5

2. Provide the following further information in relation to the VCU Composting Unit:

The procedures outlined below describe the operation of the VCU and answers the questions raised by the Agency as part of the Article 12 compliance.

The following is a description of the path material will take through the VCU facility.

1. Greenwaste and wood waste arrives on site in a vehicle with a known weight of material.

2. Greenwaste and wood waste is dropped from the vehicle into the storage area near to the shredding unit.

3. An operator will use a bucket loader to move the greenwaste into the shredding unit and to take out any large contaminants at this stage e.g. metal, trees, stumps etc.

4. Once through the shredding unit shredded greenwaste is taken by the bucket loader to the shredded greenwaste storage area in the blending hall.

5. Clean catering waste will be delivered direct into the blending unit and dropped from the trailer into a covered storage area.

6. This material is shredded and screened to ensure compliance with size requirements and to minimise the non-putrescible content in the feedstock.

7. The material for processing is fed into the blender using the loader in a pre-determined ratio of greenwaste to screened catering waste.

8. Before feeding each chamber must have its daily discharge. This is PLC operated to set levels based on the volume the site is operating to.

9. As material is removed from the base of the chamber, at the set level for the processing cycle, material will travel down the chamber under gravity to form a cavity at the top for filling.

10. Exit rollers activated for discharge drop material from the base of the unit onto a chain drive exit conveyor which removes material from under the chambers.
11. The feed system is PLC operated and will start to feed chamber 1. This will only occur once the PLC operated pre-determined daily discharge has completed.

12. Once chamber 1 is full the PLC system will stop the filling of chamber 1 and move onto the filling of chamber 2. Again this will only occur on completion of its discharge. There would be no delay as the discharge process would take a maximum of 10-15 minutes per chamber with feeding taking up to 45-60 minutes per chamber.

13. Feeding and exiting progresses through the chambers consecutively.

14. Once material exits from under the line of chambers it will pass along the chain discharge to a conveyor after which it is again screened using a finer mesh trommell.

15. Material from clean streams can be used in application as per the Department of Agriculture's guideline for compost and with the prior agreement of the Agency.

16. After 1 weeks material is removed via front end loader for screening and removal from site.

Operational Labour Requirement

1 full time operator would be capable of running the VCU plant. To manage all other aspects of the composting it is likely that a further operator would be required.

The following is an example of activities carried out:

- At the start of each day the operator would check that the exit conveyors are free moving with no blockages and check that the discharge conveyor is clear and clean. He can then be sure that exiting can start to allow feeding to follow.

- He would move the shredded greenwaste by bucket to the storage bay and manage drop off of screened catering waste into the feed bay.

- He would fill the blender unit with greenwaste and catering waste as well as operate the blending and feeding process. Blending and feeding the units would be at an estimated 5-6/hrs, allowing for normal operations.

- He would manage the exiting of processed material from the units, the screening of that material and any discharges from the unit.

- ***Clarify the feedstock material to the Unit and identify the appropriate categories of waste under EWC***

Waste to be composted at the facility will include the fines generated during the trommelling of household black bins (20 03 01), green waste (20 02 01) accepted at the facility (household sundry skips) and shredded timber (17 02 01), Catering Waste – 200101, 200108, Food factory waste – 020301/04, 020501,020601, 020701/04, Cereals - 020103, 200107 and Green/garden (wood) waste – 200201.

- ***Outline the cleaning procedures relating to the composting unit.***

As part of the Environmental Procedure for the Waste Acceptance and Handling of Composting daily checks are carried out at the end of each working day a complete check/inspection of the composting unit and the compost handling area. As part of this the following is carried out:

- working area is cleaned of any waste material,
- any material is removed from within the blender,
- the conveyor belt is opened and the area from the blender to the composting unit is cleaned,
- the outside of the composting unit is cleaned of any material present;
- All material is cleaned from the harvesting area;
- Any non-organic waste removed during the process is disposed off.
- Any Leachate is cleaned from under the unit.

- ***Clarify the particle size of the feed material.***

Midland Waste Disposal Company Ltd are currently engaging with the Department of Agriculture & Food regarding maximum particle size in accordance with the provisions outlined in the Department's *Conditions for Treatment of Animal By-Products in Approved Composting or Biogas Plants in Ireland* in particular condition 5.3 "*In the case of a plant where catering waste is the only animal by-product to be used as a feedstock, other equivalent operating parameters may be accepted. The manufacturer/ manager of a facility must produce documented evidence/ research to guarantee an equivalent effect regarding the reduction of pathogens, unless the method employed is otherwise approved as an acceptable alternative treatment method on the basis of scientific and technical progress by the EU Standing Veterinary Committee (Standing Committee on the Food Chain and Animal Health).*"

- ***Describe the procedure for removal and storage of processed material.***
  As detailed previously

- ***Describe the practices to be undertaken to avoid cross contamination of raw and processed material.***

The prevention of cross contamination of raw & processed material at the VCU plant is of the utmost importance, however there are a number of other possible hazards associated with the VCU composting unit; in order to evaluation and minimise the potential impact from these hazards, Midland Waste Disposal Company Ltd., have prepared a full HACCP analysis of the proposed activity – this is detailed overleaf.

VCU HACCP ANALYSIS TABLE FOR ABP/CATERING WASTE AT VCU Midland Waste Disposal Company Ltd

Process Step	Hazards	Control Measures	CCP Question	Critical Limit	Monitoring Procedures	Corrective Action	Record	Verification / Comment
			1 2 3 4 CCP					
Shredding / Maceration	Catering Waste material shredded to suitable size	Macerate in shredder for predetermined period of time to ensure all Catering Waste material meets size requirements.	Y Y Yes	Catering Waste material must meet size requirements	Visual and physical inspection after predetermined length of maceration. Refer to table of possible Catering Waste materials being taken onto site and minimum length of time macerator should be operated. If material to large then re-macerate prior to rechecking the size	Increase length of time of maceration of Catering Waste material to ensure suitable particle size reached. Also re-macerate Catering Waste material.	Record failure and corrective measure actioned and alter operational procedure accordingly	Crucial part of site training is ensuring that the Catering Waste material is macerated to as small a size as possible to increase the efficiency of the composting process in the VCU.
	Suitable particle size of greenwaste / wood waste	Always ensure adequate stockpile of green/wood waste		Matrix material shredded to less than 120mm	Visual inspection of material prior to delivery to VCU blender	Ensure suitable shredder is being used to shred matrix material to appropriate size	Record oversized material and alter shredding procedure as appropriate	
	Odour from site	Action swift repair or hire in replacement		Complaints from locals	Operators on site notice increased odour and act to reduce it	Macerate with matrix added to suppress odour	Record odour and alter operation accordingly	
	Shredder / blender break down	Action swift repair or hire in replacement						
	Loader broken down					Other equipment available at the site		

Process Step	Hazards	Control Measures	CCP Question	Critical Limit	Monitoring Procedures	Corrective Action	Record	Verification / Comment
			1 2 3 4 CCP					
Blending stage	Ensure suitable blend of Catering Waste and matrix material is fed to the VCU	Staff training to ensure suitable blend is created for feeding to VCU	Y Y Yes	Suitable level of matrix added for successful composting	Visual inspection prior to feeding	Increase matrix content in the blend	Record mix levels on daily basis	Main part of VCU training is ensuring site staff have an appropriate understanding of the composting process, the mix required and moisture content level
	Ensure feed mixture is of suitable moisture content	Visual inspection prior to feed for moisture level		Suitable moisture content for successful composting	Visual inspection prior to feeding	Add water to the mix or increase level of matrix material within the mix	Record if moisture addition / reduction has had to be carried out	

Process Step	Hazards	Control Measures	CCP Question 1 2 3 4 CCP	Critical Limit	Monitoring Procedures	Corrective Action	Record	Verification / Comment
VCU Composting Process	Temperature / time profile	Ensure temperature has been recorded at 70°C+ for over an hour for all material going through the VCU facility. This includes any catering waste taken onto site	Y Y Yes	Ensure data logger has 70°C registered for an hour. At appropriate point in chamber	Check meter readings each day.		Download daily temperatures and ensure that they are backed up and recorded for min of 2 years and shown relevant agencies	Analysis of temperatures and end product.
		Temperature time profile not reached		70°C not reached in the unit at the probe point	Check records of the data logger; Take separate hand held readings to see what temperature is throughout the top of the chamber	Check fan speed and porosity. Mark batch and feed the next days feed and check readouts to see whether material has reached appropriate temperature. If not remove, re-blend and re-feed. If necessary empty chamber and refill in order material removed from chamber and ensure temperature achieved	Record failure if material hasn't reached temperature re-process material	Check data from reprocessed material to check it has reached appropriate temperature
	Power failure may prevent weighbridge functioning	Use estimated weight from historical data						
	VCU mechanical breakdown	Feed into other units, contact OrrTec or Scott's for immediate repair				Repair staff on site to fix problem as soon as possible		If single unit down then other units fed excess material

Process Step	Hazards	Control Measures	CCP Question 1 2 3 4 CCP	Critical Limit	Monitoring Procedures	Corrective Action	Record	Verification / Comment
VCU Composting Process	Odour from VCU	Ensure feedstocks are appropriate for composting			Staff trained to report unsuitable odour levels	Review feed materials and alter feedstock as appropriate	Record odour, cause and corrective action	
	Dripping chamber	Excess water in the lower reaches of the column due to blended mix not being correct		Dripping from base of VCU	Record if dripping and start appropriate corrective action	Ensure fan is operational; Ensure blending is at appropriate mixes; Stop application of water to the blend; Ensure correct particle size of wood waste is being used; Ensure condensate tube is clear and not blocked by contamination; Reblend and reprocess dripping material through the VCU.	Record dripping and value of quantity of drip	

Process Step	Hazards	Control Measures	CCP Question	Critical Limit	Monitoring Procedures	Corrective Action	Record	Verification / Comment
			1 2 3 4 CCP					
VCU Discharge	Pathogen	Temperature time parameters have been met	Y Y Yes	Temperature reaches 70°C for an hour; Sample passes pathogen testing	Monitor data from data logger and sample testing	Batch of material shall be taken round to the dirty side and mixed into the feedstock for reprocessing through the VCU or dispose of according to legislation	Record failure and reprocess material	

Process Step	Hazards	Control Measures	CCP Question	Critical Limit	Monitoring Procedures	Corrective Action	Record	Verification / Comment
			1 2 3 4 CCP					
End Product Maturation*	Re-infection of end product Unsuitable maturation conditions	Ensure clean and dirty areas maintained Product stored in recommended form	Y Y Yes	No traces of pathogen in end product End product not reaching satisfactory end product levels	End product testing Monitor maturation pile	Modify site operation to ensure clean / dirty separation being maintained Alter maturation storage	Record failure and re-blend and mature product Record monitoring of maturation pile	

*In the event that end product maturation occurs at the facility, the HACCP analysis has been completed.

Process Step	Hazards	Control Measures	CCP Question	Critical Limit	Monitoring Procedures	Corrective Action	Record	Verification / Comment
Site Control	Cross contamination	Ensure clean and dirty areas are kept separated	Y Y Yes		Visual operation of the site			
	Wood/green waste being brought round to dirty area from clean area	Ensure loader bucket and wheels and rims are cleaned prior to each wood/green waste collection journey		No cross contamination	Visual and monitored clean down of loader prior to each movement from dirty to clean area	Retrain staff over clean and dirty area operational procedures	Record failure	
		Contamination occurs		Visual realisation of contamination and after processing contamination the presence of pathogen in end product	Record any contamination events and trace end product testing results for pathogen	Retrain staff over clean and dirty area operational procedures	Record failure and reprocess material	
	Rodent and rat infestation	Vermin and rodent extermination plan		Signs of infestation	Visual signs	Check and refill traps	Log rodent presence	

- ***Outline proposals for sampling of composted material.***

➢ *Name and Address of Laboratory to be used*
Bord na Mona Environmental, Main Street, Newbridge
FBA Laboratories, Carrigreen Industrial Estate, Cappoquin, Waterford

➢ *Sampling procedure to be followed*
A representative sample is obtained using best practice methodologies and delivered to the analytical laboratory on the day of sampling. A full chain of custody is recorded.

➢ *Proposed frequency of sampling (all batches to be sampled initially)*
Midland Waste Disposal Company Ltd have already sampled loads from the VCU composting which have return a zero reading for Salmonella. Samples will be taken on a quarterly basis.

- ***Identify the proposed use of composted material.***

The finished compost will be used for the following:
Topping for close mines
Topping and growing media for the rehabilitation of tailing ponds
Forestry
Daily cover for landfill
Possible spreading on arable land, as per Department of Agriculture guidelines and regulations EC 1774/2002
Parkland
Private and Public gardens
Depleted bog lands
Golf courses/ Racecourses
Motorway verges/ sound barriers
Football pitches, GAA pitches, etc
Land remediation
Urban areas - parks, raised beds and hanging baskets

Clarify if you proposed to pass the composted material through the trommel also used for municipal waste prior to dispatch of compost off site.

It is proposed for quality purposes to trommel the finished compost on a dedicated trommel specific to this material – please note there is currently two trommels on site in Navan – one employed to screen the incoming raw material and the second to screen the finished compost exiting the VCU.

3. ***Describe the current processing of mixed municipal waste undertaken on-site and the proposed processing to be undertaken which the VCU composting unit is operational.***

Mixed household municipal waste is currently directed to the on-site compactor and disposed at landfill. Once the VCU composting unit is operational it is proposed to process the household waste through a bag opener and the trommelling system. Upon acceptance to the facility, waste will be directed into the Recycling Plant Building (RPB) via the weighbridge. Within the RBP the waste will be directed (once opened) via a conveyor belt into the trommel. The trommel allows for the removal of the fines from the waste and the bulk dry waste is passed through the conveyor system and into an ejector trailer for disposal within an authorised landfill off site. It is proposed to direct the fines generated from the trommel into the VCU unit via the blender.

4. ***Clarify that the Best Available Techniques for a waste transfer station will be used to prevent or eliminate, or where that is not practicable, to limit, abate or reduce an emission from the activity.***

Operations at the facility and all proposed development have been and will be carried out with reference to with the Draft EPA document "*BAT Guidance Notes for the Waste Sector Transfer Activities*" dated April 2003 and also Annex IV of Council Directive 96/61/EC concerning integrated pollution prevention and control.

Waste Activities

The facility operates a waste transfer station and such as the potential emissions have been identified as air (dust, odour, litter, and vehicle emissions), noise (operational noise) and emissions to groundwater (surface water run-off, leachate generation and fuel storage). As detailed in the accompanying Environmental Impact Assessment, mitigation measures have been developed to prevent any potential negative impacts of the facility on the surrounding environmental media. An Environmental Management System (EMS) has been established at the facility which entails a number of environmental procedures in the operation of the facility and environmental work instructions to ensure no adverse impacts from the facility. Any emission from the activity will be kept within the emission limits as specified in the Waste Licence. In addition, waste handling and processing at the facility will be carried out in compliance with the Waste Licence (131-1).

As part of the EMS in place at the facility, objectives and targets have been established to ensure on-going improvement at the facility and to incorporate any

technological advances. These objectives and targets are reviewed and up-dated on an annual basis.

A monitoring programme has been established as per the conditions of the waste licence. The results of the monitoring will be used to assess the impacts of the activities on the surrounding environment and to identify areas of potential improvements.

Composting

The VCU is described as an in-vessel composting unit which was recently approved by DEFRA in the UK for the composting of catering/municipal waste containing animal by-products. The design of the unit is such so as to minimise the emission of odour and bio-aerosols, independent reports, *vide infra*, highlight how successful this technology is at minimising fugitive emissions.

5. *Clarify that the activity is consistent with the objectives of the relevant waste management plan.*

The facility is under the waste management plan for the North-East Region 1999-2004. The main policies of the plan are to:

- Diversion of 50% of household waste from landfill;
- Diversion of 65% of biodegradable waste from landfill;
- Development of waste recovery facilities, including the development of compositing;
- Increased recycling rates of Municipal waste and Construction & Demolition waste

Midland Waste Disposal Ltd have been commitment to improving their rates of diversion of household waste, biodegradable wastes, and C&D waste from landfill at their facility. This has been accomplish through the utilisation (with agreement of the agency) of a number of a new procedures in the handling of waste at the facility and the established of new outlets of the handling of recovered waste. Since the granting of the waste licence in 2001, Midland Waste Disposal Ltd., have developed a number of new outlets for the receipt of timber, steel, biodegradable waste, plastics and paper etc. Large scale investments in the purchasing of the up-to-date technology have been made over the last 4 years. These have included the purchase of a trommel and conveyor system which allows for increased recovery rates of C&D wastes and Municipal wastes accepted at the facility. In addition, a VCU composting unit has been obtained which allows for the composting of the organic fraction of municipal

wastes. In addition Midland Waste Disposal Company Ltd established a blue bin curb side recycling scheme in 2003 which presently services excess of 11,000 households.

To ensure the continual improvement of recovery and recyclable rates at the facility (and as such the diversion of waste from landfill) Midland Waste Disposal Company Ltd., will continue to source new facilities for recycling both in Ireland and the UK and invest in up-to-date technologies.

6. ***Clarify that energy will be used efficiently in carrying on of the activity.***

As part of the EMS an energy management programme has been established at the facility, to ensure energy is efficiently used on site in the carrying out the waste processing and handling activities.

This includes the following:

- Completion of energy and natural resource audits on a biannual basis which indicates the consumption of resources on site. This will identify areas where resources are potential increase and thus improvements may be made.
- Training and awareness programmes have been developed to increase awareness of energy usage on-site and potential areas of energy wastefulness
- Research of new technologies for energy saving methods applicable to the facility
- Implementation of energy conservation programmes to minimise power consumption.
- Monitoring programmes to quantity the effectiveness of mitigation measures.
- Replace any in-efficient equipment to more energy friendly appliances.

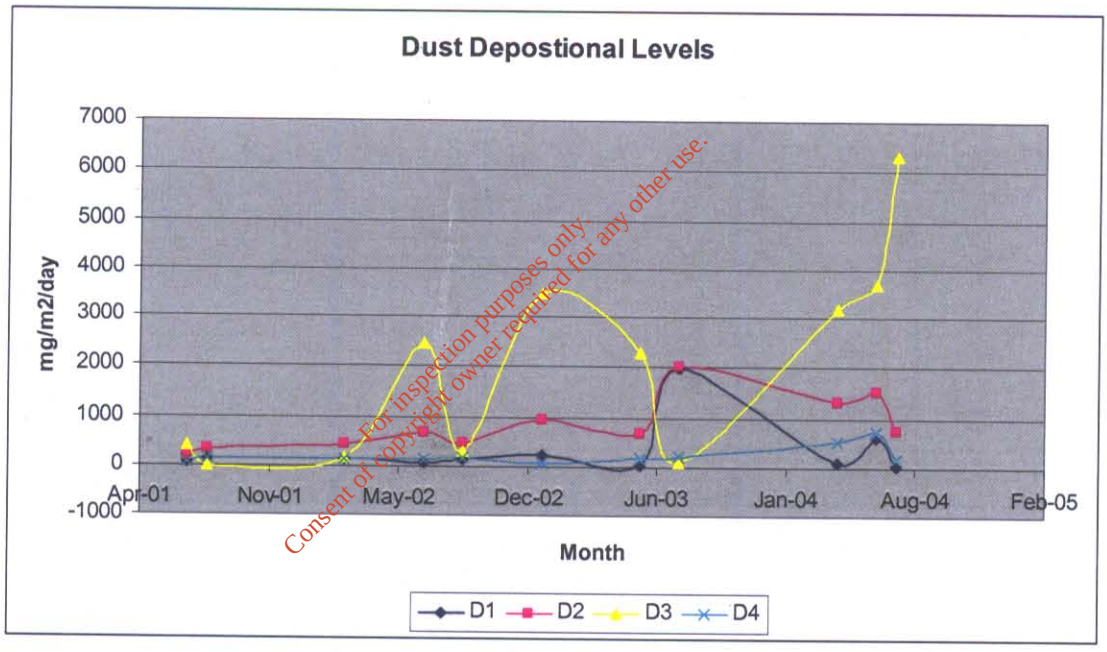
7. ***Identify on a suitable scaled map (A3 Maximum) the proposed monitoring point for the surface water collection system and provide a detailed scale map (A3 maximum) showing the separation of clean and dirty water at the northern end of the Recycling Plant.***

Please find attached in Appendix 1 the drawings showing the monitoring point for the surface water collection system and the drainage system within the northern end of the Recycling Plant.

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

Dust

In general, the results 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 from the east and west (traffic movement) and from the north (off-site activities), rather than from 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]. 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 averaged at higher levels of dust than normal were encountered in April and June 2004, however these higher levels were attributed to activities off-site.

Noise

A copy of the noise results to-date are included in the Environmental Impact Statement.

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

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.

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 corner 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

A copy of the groundwater results to-date are included in the Environmental Impact Statement.

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.

Levels of heavy metals are low, levels of boron, iron, manganese and barium detected at higher concentrations in comparison to other metals. 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). 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. ***Describe any proposed arrangements for the prevention, minimisation and recovery of waste arising from the activity.***

Operations activities occurring at the facility entail the acceptance of municipal, industrial, commercial and C&D wastes. These wastes are processed at the facility and the recyclable fractions of the waste are recovered. As such there are no waste arising from the activity itself. Any waste generated in the offices are made up of paper and cardboard which is forwarded to facilities for recycling.

10. ***Clarify in relation to emission to the aquifer if they give rise or could give rise to an emission containing the List I and II substances specified in the Annex to Council Directive 80/68/EEC of 17 December 1979, describe the existing or proposed arrangements necessary to give effect to Articles 3,4,5,6,7,8,9, and 10 of the aforementioned Council Directive.***

Discharge to groundwater is off waters generated from the (i) clean roof water and (ii) water generated from hardstanding areas. These waters will be collected within a drainage system and discharged to groundwater via a siltration trap and oil interceptor. Any waters generated in areas where wastes are handled will be directed into the foul water collection system. There will be no dirty waters discharged to ground and as such there will be no emissions of waters containing any List I and II substances.

On-going groundwater monitoring since 2001 has not detected any elevated levels of parameters which would indicate any impacts on groundwater underlying the facility.

11. Provide on a suitable scaled map (maximum size A3) the location of the groundwater supply well on the Kilsaran site

Please find attached in Appendix 2 the drawings showing the location of the Kilsaran Well.

12. 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.

Please find attached in Appendix 3 the revised tables E.1(i) to E1(v) in details of the on-site generator. It is proposed that the generator will be replaced by an upgrade in the electricity supply.

13. Clarify the number of waste containers (full) which you are seeking to park on site overnight prior to movement to waste disposal/recovery facilities.

Midland Waste Disposal Company Ltd., wish to park a maximum number of 25 no. full waste containers at the facility overnight.

14. Address potential bio-aerosol emissions associated with the VCU Composting Unit.

Please see attached (appendix 4) report commissioned by OrrTec on a VCU composting unit in the UK. It should be noted that feedstock for this particular reference system utilised catering waste and green-waste similar to that proposed for the facility at AES Navan. Furthermore it is worth noting that the results of the independent OrrTec survey indicated that even at 50m downwind the levels of *Aspergillis Fumigatis* was just above that of background levels in a rural environment., for comparison purposes Dr Munoo Prasad at the recent Cré conference quoted $10^2 - 10^5$ CFU/m^3 in the vicinity of typical sawmills for *Aspergillis Fumigatis*.

15. 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/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. These recorded concentrations of 185 and 100 ou/m^3 respectively. Downwind of the facility (OD1 & OD2) recorded concentrations of <20 and 133 ou/m^3. As stated in the report, on the day of sampling there was no measured increase in odour levels downwind of the facility.

16. Clarify if planning permission is required for the proposed development, increased waste throughput and extended hours of operation.

It is not proposed to carry out any waste processing at the facility outside of the hours of 8am to 8pm. From 06:00 to 08:00 only waste acceptance and traffic movements will be carried out at the facility.

Meath County Council have been contacted in relation to this issue however there has been no correspondence received to-date. Meath county council were contracted in October 2004 and have raised no concerns in relation to the proposed waste licence review.

17. 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 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.

A copy of the revised Non-Technical Summary is included in appendix 5

Appendix 1

Surface Water Collection System Map

PROJECT:

Proposed Monitoring point for the Surface water collection system

RJD Surveys Ltd.
Land & Engineering Surveys
Precise Levelling & Monitoring
Control Networks
Measured Building Surveys
Setting-out
Digital Ground Modelling
Volumes
CAD Facilities
1 Bedford Place, Navan, Co. Meath
Tel: (046) 76843 Fax: (046) 71178
Mobile: 086 826 4822 email: rdsurvey@eircom.net

DATE: 12 July 2005
SCALE: 1:500
SURVEYED BY: JD
DRAWN BY: RD
DRG. NO.

CLIENT:

Midland Waste

GWE2
GWE1
OIL INTERCEPTOR
INTERCEPTOR TANK
Water Retaining Bund
Weigh Bridge
Weighbridge Office
FENCE
Temporary Operational Storage (Sealed Units)
Headstone Manufacturing Factory
Workshop
Fabrication shop
landscape area
SITE NOTICE
Decking
Portacamp Offices
Toilets
Car Park
(Tarmac)
Tarmac
Wheelie Bin Storage Area
WASH BAY
INTERCEPTOR TANK
WASH HOUSE
WATER TANK
PUMP
P.F
Diesel Room
Toilets
Not in Use
25m³ NVR
FSP
Water Tank
Bottle Bank
Comp. No.2
Bin
Compactor No.1
Bin
Open Top
Timber/Metal collection area
Stairs
Material Recycling Facility
Leachate drain line
Bleeder
office control
Engine Room
Dry Storage
Canteen
Mobile Home
Temp. Generator
Vehicle Parking
LINE OF CONCRETE
Empty Bins Storage Area
LINE OF CONCRETE
CLEARED ACCESS
Fence
RJD SURVEYS LTD.

PROJECT:

Provision of Bund for separation of clean and dirty water

RJD Surveys Ltd.
Land & Engineering Surveys
Precise Levelling & Monitoring
Control Networks
Measured Building Surveys
Setting-out
Digital Ground Modelling
Volumes
CAD Facilities
1 Bedford Place, Navan, Co. Meath
Tel: (046) 76843 Fax: (046) 71178
Mobile: 086 826 4822 email: rdsurvey@eircom.net

DATE: 12 July 2005
SCALE: 1:500
SURVEYED BY: JD
DRAWN BY: RD
DRG. NO.

CLIENT:

Midland Waste

Headstone Manufacturing Factory
Workshop
Fabrication shop
OIL INTERCEPTOR
INTERCEPTOR TANK
Water Retaining Bund
Weigh Bridge
Weighbridge Office
Temporary Operational Storage (Sealed Units)
FENCE
landscape area
SITE NOTICE
Decking
Panoramic Offices
Toilets
Car Park (Tarmac)
Tarmac
Bottle Bank
Comp. No. 2
Compactor No. 1
Bin
Open Top
BUND - Provided to separate clean and dirty water
Timber/Metal collection area
Stairs
Wheelie Bin Storage Area
WASH BAY
INTERCEPTOR TANK
WASH HOUSE
WATER TANK
PUMP
P.F
Diesel Room
Petrol
Not in Use
Foam
Water Tank
Material Recycling Facility
Dry Storage
Canteen
Mobile Home
Temp. Generator
Leachate drain line
Bleeder
office control
Engine Room
Vehicle Parking
CLEARED ACCESS
LINE OF CONCRETE
Empty Bins Storage Area
LINE OF CONCRETE
Fence

Appendix 2

Location of Groundwater Supply Well

Appendix 3

E.1: Emissions to Atmosphere Form

Location of Groundwater Supply well for Kilsaran Site

PROJECT:
Location of Kilsaran Groundwater Supply Well

RJD Surveys Ltd.
Land & Engineering Surveys
Precise Levelling & Monitoring
Control Networks
Measured Building Surveys
Setting-out
Digital Ground Modelling
Volumes
AutoCAD Facilities
1 Bedford Place, Navan, Co. Meath
Tel: (046) 76843 Fax: (046) 71178
Mobile: 086 826 4822 email: rdsurvey@eircom.net

DATE: 12 July 2005
SCALE: 1:500
SURVEYED BY: JD
DRAWN BY: RD
DRG. NO.

CLIENT:
Midland Waste

Headstone Manufacturing Factory
Workshop
Fabrication shop
OIL INTERCEPTOR
INTERCEPTOR TANK
Water Retaining Bund
Weigh Bridge
Weighbridge Office
FENCE
Temporary Operational Storage (Sealed Units)
landscape area
SITE NOTICE
Decking
Portacabin Offices
Cabins
Toilets
Car Park (Tarmac)
Tarmac
Stairs
Timber/Metal collection area
Bottle Bank
Comp. No. 2
Compactor No. 1
Bin
Open Top
Wheelie Bin Storage Area
WASH BAY
INTERCEPTOR TANK
WASH HOUSE
WATER TANK
PUMP
P.F
Not in Use
Diesel
Water Tank
Material Recycling Facility
Leachate drain line
Dry Storage
Canteen
Mobile Home
Temp. Generator
Vehicle Parking
Engine Room
Blender
office
Control
CLEARED ACCESS
LINE OF CONCRETE
Empty Bins Storage Area
LINE OF CONCRETE
Fence
RJD SURVEYS LTD.

TABLE E.1(iv): EMISSIONS TO ATMOSPHERE - Minor /Fugitive

Emission point Reference Numbers	Description	Emission details[1]				Abatement system employed
		material	mg/Nm$^{3(2)}$	kg/h.	kg/year	
Recycling Plant Building	Waste acceptance handling and processing	Dust/debris				Waste is processed though the system as efficiently as possible. Fine wastes are removed from the recycling plant building. The floor is clean every evening after operations cease. Nuisance inspections are carried out daily.
Road ways	Movement of vehicles	Dust				Roadways are clean three times a week by street cleaner; Speed limits on site for traffic movement; Water sprinkler system is used during periods of dry weather periods.
Skip Storage Areas	Storage of Skips	Debris				Skips are removed of debris prior to being stored outside of the recycling plant building
Generator	Running of Generator	Particulate Matter SOx NOx CO_2				The generator is run on a *Scania* engine with low emission levels. The generator is serviced regularly to ensure it is maintained in good working order.
Glass Segregation Areas	Storage of waste glass	-				Nuisance inspections are carried out daily; Any dust/debris generated from the site will be removed.
Composting Unit	Handling of Composted material after harvesting	Dust				Nuisance inspections are carried out daily;

1 The maximum emission should be stated for each material emitted, the concentration should be based on the maximum 30 minute mean.
2 Concentrations should be based on Normal conditions of temperature and pressure, (i.e. 0°C101.3kPa). Wet/dry should be clearly stated. Include reference oxygen conditions for combustion sources.

Appendix 4

OrrTec Report on VCU composting unit in the UK

D&F Associates
D&F Associates

13 Shell Green House
Gorsey Lane
Widnes
Cheshire
WA8 0YZ

Tel/Fax: 0151 423 2490
Email: DFAssociates@aol.com

BIO-AEROSOL MONITORING – CRANBERRY COMPOSTING
19TH MAY 2003

Sandra Davies
Microbiological Services
7th June 2003

BACKGROUND

D&F Associates were contacted by OrrTec Ltd., to determine the emission of airborne micro-organisms at Cranberry Composting, an established composting facility based in Spilsby, Lincolnshire, who utilise a Vertical Composting Unit (VCU) for the processing of feathers, wood, catering and green wastes. OrrTec wish to obtain data on the effect of the VCU process on the environment, and it was identified that levels of background airborne micro-organisms and those generated from the VCU under normal operation should be evaluated and compared.

Enumeration does not enable assessments to be made as to whether a facility presents a risk to the health of persons living or working within the vicinity of a site, as satisfactory dose-response data is not available. Additionally, results generated are not intended to be used to assess the occupational exposure of workers at a facility.

METHODOLOGY

Following the Composting Associations 'Standardised Protocol for the Sampling and Enumeration of Airborne Micro-organisms at Composting Facilities', MERCK MAS 100 Eco air monitoring systems fitted with hemi-cylindrical baffles were used to obtain samples as follows:

Sample Point 1 - 50 metres Upwind of the VCU operation, away from site activity.
Volumes sampled 100, 250, 500, and 800 litres for both mesophilic bacteria and *Aspergillus fumigatus*

Sample Point 2 - 25 metres Downwind of the VCU operation during discharge
Volumes sampled 50, 100, 250, and 500 litres for both mesophilic bacteria and *Aspergillus fumigatus*

Sample Point 3 - 50 metres Downwind of the VCU operation following discharge and during loading. Volumes sampled 50, 100, 250, and 500 litres for both mesophilic bacteria and *Aspergillus fumigatus*

MAS 100 Eco units are high-performance instruments that utilise the principle of the Anderson air sampler and draws air through a perforated plate. The particle bearing air-flow is directed onto a standard petri dish containing agar. The MAS 100 Eco is calibrated with a digital anemometer and the air flow is regulated to exactly 100 litres per minute (equivalent to stage 5 of the Anderson Sampler).

The units were mounted on a tripod platform 1.6 metres above the ground, and were cleaned using a 70% (v/v) aqueous solution of industrial methylated spirits (IMS) during use. Plates containing specific growth agar for the detection of mesophilic bacteria and *Aspergillus fumigatus* (prepared as described in the Composing Associations Standardised Protocol and under GLP conditions) were aseptically loaded into the MAS 100 units, which were operated simultaneously at each sample point. Control plates containing both types of media were also kept in resealable bags during sampling.

Plates were stored and transported in a portable electrical coolbox, and exposed plates were placed in unused resealable bags prior to incubation at D&F's laboratories.

Meteorological conditions were also monitored during sampling. Wind speed and wind direction were recorded at one minute intervals, and air temperature and relative humidity were recorded every 10 minutes. The prevailing weather conditions, including an estimate of cloud cover was also assessed and recorded.

RESULTS

The full results obtained are given in the attached tables – Estimated Concentrations of Airborne Micro-organisms and Meteorological Conditions.

50 Metres Upwind

The location was quite exposed and a North Easterly wind was recorded. Average wind speed was calculated as 3.6 m/s which is equivalent to number 3 on the Beaufort Scale (gentle breeze). Weather conditions were variable with sun, cloud and rainfall occurring during the sampling period (approximately 30 mins), but conditions were still suitable for sampling. Background airborne micro-organisms were enumerated following incubation of the plates for 48 hours and the application of statistical corrections (positive hole conversion for the MAS 100 air monitoring system). The average colony forming units per cubic metre (cfu m^{-3}) were estimated to be 26 cfu m^{-3} for mesophilic bacteria and 9 cfu m^{-3} for moulds, which were not identified as the species *Aspergillus fumigatus.*

25 Metres Downwind

The location was sheltered by trees, straw bales (containing the raw material holding area), and farm sheds. The sun was bright throughout the sampling period and a North Westerly wind was recorded. Average wind speed was calculated as 0.5 m/s which is equivalent to number 1 on the Beaufort Scale (light air). Samples were taken during discharge of the VCU at 2 minutes (50L), 4 minutes (100L), 7 minutes (250L) and 13 minutes (500L) respectively. The average colony forming units per cubic metre (cfu m^{-3}) were estimated to be 70 cfu m^{-3} for mesophilic bacteria and 27 cfu m^{-3} for moulds, which were not identified as the species *Aspergillus fumigatus.*

50 Metres Downwind

The location was fairly exposed and a North Easterly wind was recorded. Average wind speed was calculated as 1.1 m/s which is equivalent to number 1 on the Beaufort Scale (light air). Weather conditions were initially sunny but became increasingly cloudy during the monitoring period. Samples were taken following discharge and during reloading of the VCU at 1 minute (50L), 6 minutes (100L), 10 minutes (250L) and 15 minutes (500L) respectively. The average colony forming units per cubic metre (cfu m^{-3}) were estimated to be 87 cfu m^{-3} for mesophilic bacteria and 46 cfu m^{-3} for moulds, which were not identified as the species *Aspergillus fumigatus.*

CONCLUSIONS

1. The levels of airborne micro-organisms detected downwind of the composting and VCU operation, indicate that on the day of monitoring, the emissions generated were low and not likely to cause contamination to the surrounding environment.
2. Moulds were recorded on the plates used to evaluate the presence of *Aspergillus fumigatus*, but *Aspergillus fumigatus* was not identified.
3. Prevailing weather conditions on the day were variable but suitable for sampling, and fell within the Composing Associations guidelines for bio-aerosol evaluation.

ESTIMATED CONCENTRATIONS OF AIRBORNE MICRO-ORGANISMS

Site: Cranberry Composting (NE Lincs)

Site Operator: Cranberry Composting/OrrTec

Sampling Date: 19th May 2003

Commissioning Laboratory: D&F Associates

Estimated Mass of materials: ~ 500 tonnes

Type of Material Processed: Mixed wood, Feathers, Kerb collection & Catering waste

Location	Sample Reference Number	Distance From Boundary of Operation (Metres)	Sample Volume (Litres)	Microbial Type	Site Activity	Materials Processed	Calculated Concentration of Airborne Micro-organisms (cfu m^{-3})	Arithmetic Mean of Parallel Samples (cfu m^{-3})	Comments
Upwind	1A	50	100	MB	None	N/A	40	26	Wind blew across open fields towards composting area and VCU
	1B		250	MB			16		
	1C		500	MB			12		
	1D		800	MB			36		
	1A		100	AF			20	9	Moulds detected were not identified as *Aspergillus fumigatus*
	1B		250	AF			8		
	1C		500	AF			2		
	1D		800	AF			6		
Downwind	2A	25	50	MB	VCU Discharge	N/A	200	70	Samples taken during duration of the VCU discharge (~30mins in total)
	2B		100	MB			60		
	2C		250	MB			8		
	2D		500	MB			11		
	2A		50	AF			40	27	Moulds detected were not identified as *Aspergillus fumigatus*
	2B		100	AF			50		
	2C		250	AF			4		
	2D		500	AF			14		
Downwind	3A	50	50	MB	Post Discharge VCU Loading	Wood board & Kerbside Catering Waste	80	87	Samples taken 1-15minutes post VCU discharge and during VCU re-loading activities
	3B		100	MB			50		
	3C		250	MB			62		
	3D		500	MB			155		
	3A		50	AF			20	46	Moulds detected were not identified as *Aspergillus fumigatus*
	3B		100	AF			140		
	3C		250	AF			8		
	3D		500	AF			14		

MB - Mesophilic Bacteria AF – *Aspergillus fumigatus* N/A – Not Applicable

ESTIMATED CONCENTRATIONS OF AIRBORNE MICRO-ORGANISMS

Site: Cranberry Composting (NE Lincs)

Site Operator: Cranberry Composting/OrrTec

Sampling Date: 19th May 2003

Commissioning Laboratory: D&F Associates

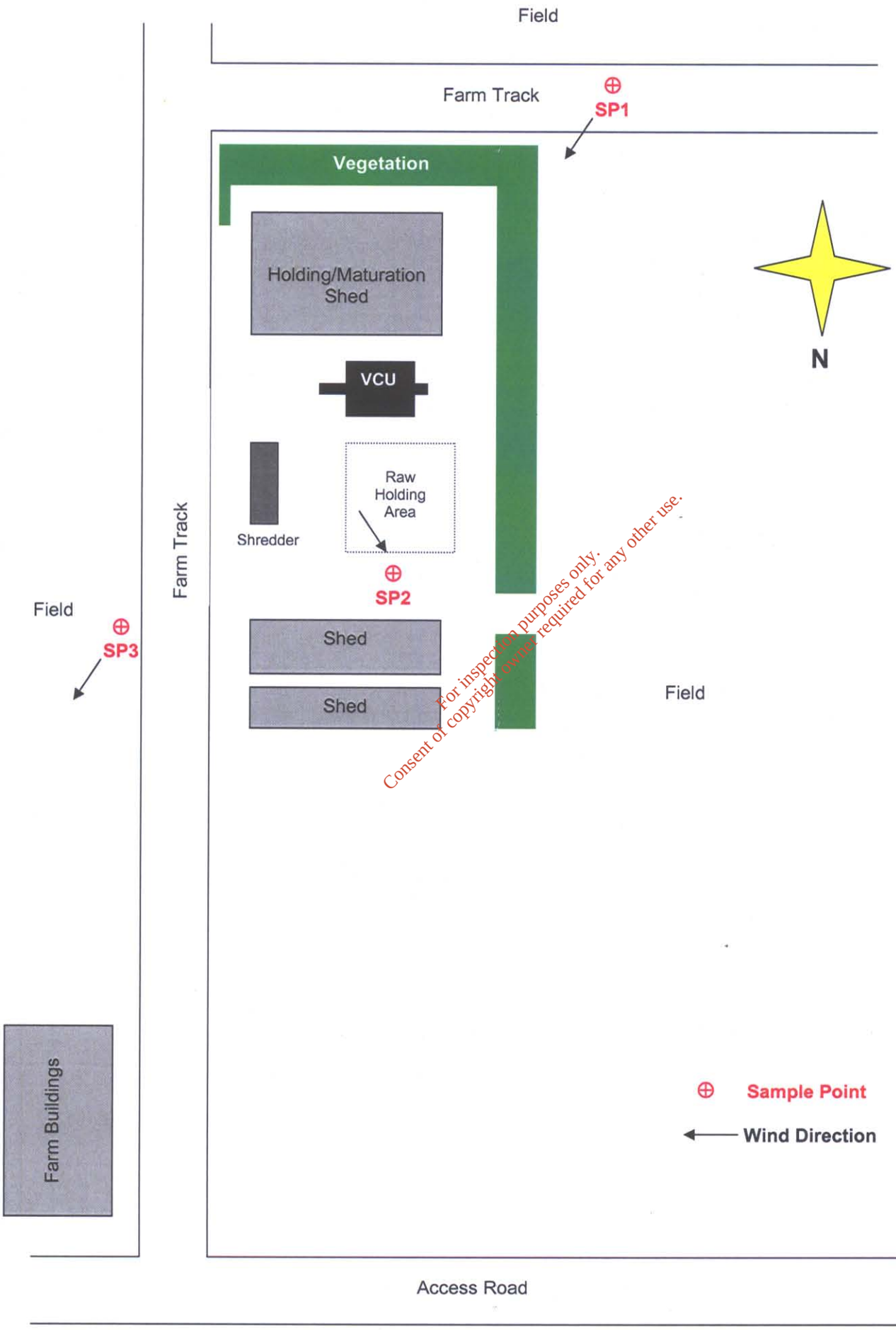
Estimated Mass of materials: ~ 500 tonnes

Type of Material Processed: Mixed wood, Feathers, Kerb collection & Catering waste

Location	Sample Reference Number	Bearing of samplers from boundary of operational area or turning/ screening operation (° from true north)	Mean direction the wind blows to during the sampling period (each individual sample) (° from true north)	Difference in bearing between location of samplers from boundary/ source and mean direction of wind (°)	Mean wind speed during sampling ($m\ s^{-1}$)	Arithmetic mean of air temperature (°C)	Arithmetic mean of relative humidity (%)	Prevailing weather conditions
Upwind 50M	1A 1B 1C 1D	40	40	0	3.6	14.9	52.8	Gusting NE wind Cloud cover - 6/8 Sun - Samples A&B Cloudy - Sample C Rain spots - Sample D
Downwind 25M	2A 2B 2C 2D	120	300	180	0.5	23.4	44.3	Light/Moderate NW wind Cloud cover - 5/8 Bright sunshine throughout sampling period Sheltered sampling location
Downwind 50M	3A 3B 3C 3D	160	45	115	1.1	17.0	47.1	Moderate NE wind Cloud cover - 5/8 Sunshine throughout sampling period

N/A = Not Applicable

Cranberry Composting Products Ltd – Site Plan



Appendix 5

Non-Technical Summary

Midland Waste Disposal Company Ltd., operate a waste transfer station at Clonmagaddan, Proudstown, Navan, Co. Meath (grid reference: E2868 N2698). The facility currently operate under a Waste Licence Reg. No. 131-1. Under the conditions of the existing waste licence Midland Waste Disposal Company Ltd., are licensed to handle a maximum tonnage of 32,000 tonnes per annum. This waste licence review application is being made to increase the maximum tonnage to 95,000 tonnes per annum. In addition, Midland Waste Disposal Company Ltd., wish to make changes to the following:

- Extent the hours of operation;
- Increase the number of waste containers held outside over night at the facility.
- Introduce Class II of the fourth schedule "Use of waste obtained from any activity referred to in a preceding paragraph of this schedule"

Midland Waste Disposal Company Ltd., were established at the facility since 1991 and became part of the Advanced Environmental Services (AES) group in 2000. Midland Waste Disposal Ltd have been commitment to improving their rates of diversion of household waste, biodegradable wastes, and C&D waste from landfill at their facility. This has been accomplish through the utilisation (with agreement of the agency) of a number of a new procedures in the handling of waste at the facility and the established of new outlets of the handling of recovered waste. This is in compliance with the objective and targets of the waste management plan for the region.

The facility is located in a former limestone quarry, located on the northern outskirts of the town of Navan in County Meath. The site is situated within an industrial area of the town with industrial premises located to the north of the facility. There are agricultural lands situated to the east and west of the facility. There is a residential area located ca. 300 m south of the facility. The site is located off a cul-de-sac from the main R162 Navan-Kingscourt Road with other industrial units of the roadway.

There is no surface water features located within the immediate vicinity of the facility, with the nearest water coarse located ca. 500m north of the site. This stream is a minor tributary of the River Blackwater.

The facility is located within a historical quarrying and as such there is limited overburden/subsoils coverage. As such, the site is set in an area with an extreme vulnerability classification. It is noted however, that all operations are carried out on hardstanding areas. Additional information obtained revealed that the surrounding area is

generally underlain by glacial till deposits with sand and gravels and glaciofluvial gravel. Reported thickness of the overburden materials is generally <10m with several bedrock outcrops observed in the vicinity of the site. The bedrock geology in the vicinity of the site is documented as being dominated by Lower Palaeozoic Metasedimentary and Metavolcanic Bedrock units.

The majority bedrock units underlying the site and surrounding area are classed by the Geological Survey of Ireland as poor aquifers except in localised zones (**Pl**) with locally important aquifers which are moderately productive only in local zones to the south (**Ll**). On-going groundwater monitoring have indicated that the quality of the groundwater beneath the site is clean.

The area in general is dominated by a general increase in elevation North of the site towards the townland of Antylstown located 2Km north of the site and an apparent 28m difference in elevation. To the South, East and West the site environs outside the enclosure of the disused quarry is the dominant topographical feature. The remaining hill not subject to any excavation to the South of the site is some 10 m OD above surrounding areas. The site is located in an industrial setting, with a number of industrial premises located along the cul-de-sac. The facility is situated between agricultural lands to east and the west with quarrying activities occurring to the north of the site. The site itself was established within a disused quarry, which acts as visual shields of the all site buildings and activities to the East, West and in particular to the South. Additional screening is afforded by an established tree-line/shrubbery to the East and West. To the North, the site is exposed to an operational quarry. A row of ornamental trees of Cypress cultivars were planted along the northern boundary of the site and this provides screening of the facility from the roadway.

The application has been made in accordance with Part V of the Waste Management Act, 1996 and supporting documentation: Waste Management (Licensing) Regulations, S.I. No. 185 of 2000 (and subsequent amendments) and EPA Guidance Notes for Applicants – Waste Licensing: Waste Disposal Activities (Other then Landfill Sites).

The licenced waste disposal and waste recovery activities that take place at the site as per the Waste Management Act, 1996, are outlined as follows:

Third Schedule -Waste Disposal Activities

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

Class 12: Repackaging prior to submission to any activity referred to in a preceding paragraph of this 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 -Waste Recovery Activities

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

Class 3: Recycling or reclamation of metals and metal compounds

Class 4: Recycling or reclamation of other inorganic materials

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

In is proposed to include the Class 11 of the Fourth Schedule "Use of waste obtained from any activity referred to in a preceding paragraph of this schedule" as part of the licence review.

The nature of the waste is that of domestic household waste, industrial (non-hazardous), commercial and construction and demolition. It is proposed that when the facility is operating at full capacity that it will accept 95,000 tonnes of waste per annum.

Facility Design

The following infrastructure is existing at the facility:

- Site security at the facility consist of 810m of 8 ft continuous palisade fencing along the entire boundary; 3 no. entrance ways into the site
- Hardstanding area over all operational areas of the site;

- Site accommodation consists of office building, port-a-cabin for canteen facilities and a mobile home for site security
- Workshop
- Weighbridge connected to computerised system
- Recycling Plant Building with leachate collection system; Trommell with picking line, Composting unit, in-floor baling system, waste storage areas;
- Glass storage bay;
- Fuel storage areas
- Waste Segregation Area
- Silt-trap and oil interceptor;

It is proposed to install the following;

- Increase area of hardstanding to 3500m^2;
- Second composing unit.

Bulk fuel storage at the site consists a 6000 gallon main diesel tank, a 200 L kerosene storage tank, and 2 no. 300 gallon hydraulic oil/Engine oil tanks in workshop/diesel shed. These tanks are located within fully reinforced concrete bunded area that conform to the standard bunding specification (BS8007-1987) with the capacity of holding 110% of the tank capacity. Lubricating greases, gear oils, and steering oils are also used on-site and these are held within a bunded area within the workshop. All bunds have been integrity tested under the conditions of the existing waste licence. Minor quantities of cleaning agents, and paints are maintained on-site. Waste oil generated from plant is removed by an authorised contractor (Allied Waste Oil) on an annual basis.

Water used at the facility is sourced from Kilsaran Well and rainwater run-off from roofed areas. There are no meters on either of these supplies therefore calculation of water usage is not possible. Water usage is restricted to the canteen/sanitary requirements. Energy usage on site comprises of electricity, and diesel for the on-site plant equipment. As part of the EMS an energy management programme has been established at the facility, to ensure energy is efficiently used on site in the carrying out the waste processing and handling activities.

Surface water run-off from all hardstanding areas is directed into the surface water drainage system. Currently there is one surface water drainage systems at the facility which directs all water from the site towards the north-west corner of the site where the water is discharged to the ground through a soakpit via an oil interceptor. It is proposed to install a second drainage system at the facility to divert the surface water

run-off from the southern section of the site towards the eastern boundary, where the water will be discharged to the ground through a soak pit (via an oil interceptor). There will be no emission to the aquifer which could give rise to an emission containing a list I or II substance.

A small scale treatment system (Bord na Móna Puraflo™ system) is installed at the facility to services all domestic wastewaters emanating from the office buildings, canteen and site accommodation. The discharge from the treatment system discharges into the foul water holding tanks which are emptied on a regular basis and discharged into the local authority treatment plant. The volume of foul water generated at the facility currently is 822 m^3 per day (2004), which is generated from the wastewater treatment plant, dirty waters generated in the waste handling areas and dirty water from the wash-down area. The wastewater treatment plants are reported to have the capacity to accept the foul water and as such there is no impact envisaged on the wastewater treatment plant.

On-site Operations:

Currently, normal operational hours at the Midland Waste Disposal Ltd. facility are between the hours of 08:00 to 20:00 Monday to Saturday. It is proposed to extend the hours of operation within the facility from 06:00 to 20:00 Monday to Saturday.

Theses wastes are characterised as follows:

- Domestic household waste
- Commercial
- Industrial
- Construction and Demolition
- Hazardous material limited to batteries, fluorescent tubes & tyres

All wastes entering the site are forwarded to the weighbridge system which records the details and quantities of waste accepted on-site. After weighing, each waste load is brought to the enclosed Recycle Plant Building, where it is deposited on the floor for visual inspection to ensure that all wastes comply with the requirements of the existing Waste Licence, Register No. 131-1. The Waste Segregation Manager (Mr. Bernard Kelly) is responsible for carrying out the waste visual inspections and for maintaining a written record of all inspections. Written records of each inspection is recorded.

Within the Recycling Plant Building the waste is sorted according to its recycling potential and is either deemed suitable for recycling/recovery or compacted within one of the compactors on-site and transported off-site for final disposal (non-recoverable waste). The categories of waste deemed suitable for segregation and recycling is dependent on available markets for such materials. Materials commonly accepted for recycling include Steel/ Iron, Cardboard/Newsprint, Timber, Construction & Demolition waste, Green Waste, Plastic and Glass and on occasion empty gas cylinders and tyres. All waste not deemed suitable for recycling/recovery is loaded into designated Ro-Ro Bins, or a 40 foot injector trailer or is compacted within one of two compactors on-site. All compacted wastes are sealed within specialised containers and are subsequently transported for authorised disposal. All waste being transported from the facility by Midland Waste Disposal Company Ltd. is weighed on the weighbridge. An individual weigh docket is printed for each waste load.

Construction and Demolition waste is sorted through the trommel and sorting line. All recyclable material is forwarded to off-site licenced facilities for recovery. Stone & bricks is used for the construction of roadways and soils/subsoils are used in land reclamination. Industrial & commercial waste is directed either to the trommel where recyclable matter is recovered or directly to the in-floor baler for recovery off-site. Any residual material is forward to landfill for disposal. Household waste is directed through the trommel and sorting line. Recovered organic fines are directed to the VCU unit for composting. Dry mixed recyclables are directed to the in-floor baler for bulk load to be forwarded off site for recovery.

Plant used at the facility will include a weighbridge, 2 no. Industrial compactors, 2 x Shredders, 1 no. Baler, 1 no. Bobcat, 1 no. Forklift, 1 no. Samsung grab, 1 no. Volvo loading shovel, 2 x Hitachi & grabs, 2 x Trommell & conveyor system, 1 no. Blender unit, 1 no. VCU Composting unit

Operations at the facility and all proposed development have been and will be carried out with reference to with the Draft EPA document "*BAT Guidance Notes for the Waste Sector Transfer Activities*" dated April 2003 and also Annex IV of Council Directive 96/61/EC concerning integrated pollution prevention and control.

Emissions/Nuisances

The facility operates for the acceptance and handling of waste and as such potential emissions to the environment during normal operation procedures could potentially include dust emanating from hardstanding areas, windblown litter, leachate generation and odours. To ensure these emissions/nuisances are minimised a number of measures

have been put in place including speed restrictions, handling of waste within Recycling Plant Building, collection of dirty waters within operational areas, and regular nuisance inspections.

Environmental Impacts

In order to predict the impacts of on-site operations on the existing site and its environs an Environmental Impact Assessment was carried out by Bord na Mona Environmental Ltd.

On-going environmental monitoring has been carried out at the facility since 2001. Dust monitoring has indicated that elevated levels of dust have been detected along the roadway on the northern boundary of the site. These levels of dust have been attributed to the movement of vehicles along the road and off-site activities. Noise levels ranged from 52.5 to 64.7 with the L_{90} values (noise levels experienced for 90% of the monitoring period) ranging from 42.0 to 61.5. These levels indicated that much of the excessive noise is resulting from intermittent sources such as traffic movements. Groundwater results to-date have indicated that the groundwater beneath the site is clean and free from contamination. Once off monitoring was carried out at the facility to detect odour generated at the facility and gas levels within an area of excavated material. These investigations concluded that there were no impacts on the surrounding environmental from activities occurring on-site.

Potential air emissions were examined under two separate headings:

- Odour
- Dust

Odour: Due to the nature of the development the generation of odours may occur through the handling of waste, mainly the household municipal waste faction, at the facility. The generation of odours and the associated nuisance it can potential cause depends of the (i) dispersion of the odours, (ii) the prevailing wind and (iii) the distance to the nearest sensitive receptors i.e. nearest residential dwelling. An odour assessment at the facility concluded that the upwind and downwind odour concentrations were similar on the day of sampling and visual observations on the site indicated that the potential odorous emissions from the Midland Wastes Disposal Company Ltd's facility did not contribute to increased odour levels downwind of the site facility. On-going good operational practises at the site and inspections will ensure no odour nuisances are caused as a result of the activities at the facility.

Dust: Dust may be generated at the facility through the movement of HGV's within the site boundary and the movement of friable material within the site. The results of the dust monitoring at the facility indicate that levels of dust are higher along the northern boundary along the roadway, and close to an adjacent industrial site. Dust directional gauges at these monitoring stations predominantly indicate that dust is being generated

from the east and west (traffic movement) and from the north (off-site activities), rather than from the working areas of Midland Waste Disposal Company Ltd. On-going good operational practises at the site and inspections will ensure no dust nuisances are caused as a result of the activities at the facility.

Any surface water run-off from hardstanding areas at the facility, is currently directed towards the front of the site, where it is collected in the surface water drainage system. This collected water is discharged through a soakaway (via a siltration trap and oil interceptor) to ground. There are no discharges to surface water and no surface water bodies within the vicinity of the site. A leachate collection system is in place in order to collect leachate emanating from the recycling plant. Leachate is conveyed via dedicated drains to the foul water storage tank. The foul waters are temporarily stored within the tank for subsequent collection when required by tanker. Final disposal is through Navan wastewater treatment plant. There are no discharges of foul waters or leachates from the facility to groundwaters.

A preliminary investigation of the Cultural Heritage of the site and surrounding environs was carried out. There are no historically important sites within the immediate vicinity of the facility. It is anticipated that the operation of the waste transfer facility will not impact on the Cultural Heritage of the area.

A baseline ecological survey was conducted at the site. All the species identified within the site are common throughout the Irish countryside and neither the site nor its surrounds are designated as a conservation area, it is deemed that the site is of low conservation value. Hedgerows are located along the site boundary. Species composition in the area are relatively common and as such on-site activities would not be expected to impact in any way on current habitat conditions. The existing environment is not designated as a Natural Heritage Area or a Special Protection Area under the Birds Directive or as a Special Conservation Area in accordance with the Habitats Directive, nor, is it designated under any of the other nature conservation designations currently used.

Noise emissions from the facility are generated through the operation of equipment on-site and the movement of vehicles within the facility. Noise predictions on the impact of the facility at the nearest sensitive receptor has been carried out and these indicate that the noise will remain below the emission limits as stipulated in the existing waste licence. The results of the on-going monitoring at the facility indicate that noise within the area is resulting predominantly traffic noise. The levels of noise coming from the facility at the noise sensitive receptor were insignificant in comparison to traffic noise and these locations. Good operational practises at the facility will be maintained

to ensure no noise nuisances are caused as a result of the workings of the facility. These will include Proper maintenance of vehicles and equipment, waste handling operations carried out indoors and on-going monitoring of site noise levels.

It is considered that the proposed waste handling procedures will not visually impact on the surrounding areas. Visibility of the site (from the south, east, & west) is prevented by a local topography and the northern boundary is planted with trees which prevents a view of the facility.

The facility is located within an Industrial area and as such is in keeping with the existing land usage. Furthermore, current procedures e.g. continued enclosure/covering of waste material, efficient/immediate sorting and recycling ensure that potential nuisances from e.g. odours, dust and pests are not likely. Since the commencement of operations at the facility were have been no complaints or grievances expressed by any member of the public with relation to onsite activities.

Contingency arrangements at the site are considered sufficient to deal with any unexpected/uncontrolled event. If a situation arises that has not been foreseen, then the appropriate arrangements and actions will be decided by the Facility Manager at the time of the occurrence. Furthermore, an emergency response procedure is in place to ensure the quick response to any potential emergency.

Environmental Monitoring

It is proposed to continue environmental monitoring at the facility in compliance with the existing waste licence:

- Dust
- Noise
- Groundwater
- Groundwater emissions

Midland Waste Disposal Company Ltd., or any of the personnel employed at the facility have never been convicted of any offence under the Waste Management Act, 1996. Midland Waste Disposal Company Ltd., employ only experienced staff to oversee and operate the facility, and they provide sufficient training to all relevant staff as required.

Restoration and Aftercare

Midland Waste Disposal Company Ltd., have set out plans in the unlikely event of facility shut down, or a planned cessation for a period of greater than six months of all or part of the site involved in the licensed activity. Should either of the above conditions occur Midland Waste Disposal Company Ltd., will decommission, render safe or remove for disposal/recovery, all materials, waste, ground, plant and equipment that may result in environmental pollution.

Following implementation of the plan, Midland Waste Disposal Company Ltd., will produce a validation report that demonstrates its successful implementation. This report will confirm that there is no continuing risk of environmental pollution to the environment from the site.