Submission by:

Breda Logan Killina Upper Carbury Co. Kildare 086 6106360 Environmental Protection Agency 2 0 OCT 2008

Re: Ref: WO201/02 - Application made to the EPA by An Bord na Mona for the extension and intensification of the Drehid Waste Management facility to accommodate an additional 240,000 tonnes per annum of non-hazardous residual municipal waste for disposal for 7 years [over and above the permitted disposal of 120,000 tonnes per annum of non-hazardous municipal waste permitted for a 20-year period] entailing the extension of the landfill footprint by 17.8 hectares.

Site address: Killina Upper, Carbury, Co. Kildare

Today I want to bring to your attention a serious nuisance and health risk to communities surrounding the Drehid Landfill. I am not talking about a potential risk; I'm talking about something that is already taking place just over 6 months in to the operation of the landfill. This year I am infested with flies; it has never been an issue before and undoubtedly the cause of this is the opening of the Drehid landfill. I cannot quantify the increase, because, to be florest I have hardly ever noticed them before, whereas this year, I spent my days trying to control them and could kill 100 flies in a day while plenty more get away. I am certain that the site itself along with the number of trucks carrying waste through my area has created this major problem and has had a very unpleasant impact on the quality of life in our home. I have grave concerns regarding the health implications of this proposed intensification. It is well know that flies carry disease and are commonly linked to food poisoning. If the dump is attracting and encouraging the flies to multiply in this area, then we can be sure that these flies are carrying disease from the landfill site and from the waste trucks to our homes.

This is not a country wide issue. This issue is directly related to the areas surrounding the landfill. I have made it my business to speak to my friends around the country about this, and in their opinion there is no increase in flies in Wexford and Mallow. I have spoken to people slightly closer to home, and again in Clane, Rathangan, and Sallins there is no issue.

On the same road as the entrance to the landfill in Killina however, all people talk about is the amount of flies, where they have come from, and how to deal with them. I have also visited the areas of Kilkeaskin, Drenane, Parsonstown, Derrinturn, Clonkeen, Coonough, Ballyshannon and these areas, all close to the site of the landfill are encountering the same problems with a large increase of flies this year. Previous to this flies have not be an issue for them. The local shops cannot keep products to deal with fly nuisances on the shelves.

You will see copies of a statement which, members of the local community have signed and which shows that it is not just myself that feels this is a major issue.

# An Bord Pleanála Oral Hearing Intensification and Extension of Drehid Waste Management Facility Précis of Evidence

**Facility Design and Operation** 

Pat O Neill
TOBIN Consulting Engineers
09-09-08

### 1 QUALIFICATIONS/EXPERIENCE

I am a Senior Engineer. I hold an Honours Degree in Engineering (1995) from University College Dublin and I am a member of the Institution of Engineers of Ireland. I joined Tobin Consulting Engineers as a Senior Engineer in July 2007. My experience to date with TOBIN and my previous professional experience have principally been in the field of waste management.

My role as Senior Engineer in TOBIN's environmental sector currently involves the execution of preliminary design and detailed design for waste management facilities. I also have an active involvement in the compilation of environmental impact statements, planning applications and waste licence applications. Other responsibilities include the preparation of contract documents and the procurement of competent contractors for the construction of waste disposal and recovery facilities.

I have gained valuable experience by way of previous career development in the area of waste management facility design. It was previously employed by a company who specialised in the provision of Mechanical and Biological Treatment (MBT) solutions to the waste management sector. I was a senior member of the project team that managed the design, installation, commissioning and validation of a number of multi-million euro MBT/MRF plants in Ireland.

My career to date has afforded me significant experience through involvement in the construction, commissioning and operation of waste management facilities. I have also visited a number of waste management facilities on a worldwide scale.

### 2 INVOLVEMENT IN THE PROJECT

I have been actively involved in the preparation of the EIS for the proposed intensification and extension of the Drehid Waste Management Facility and have specifically taken responsibility for the preparation of Section 3 of the EIS, which details the proposed facility. I have also been closely involved in the management and administration of the contract for the construction of the initial phase of the engineered landfill and associated infrastructure and in the successful validation of the facility with the EPA.

In the preparation of this section, I continuously liaised with the wider project team. In particular, I worked closely with:

- Damien Grehan (Project Director)
- Mark Conroy (Geological and Hydrogeological assessment);
- Emma Delaney (Human Beings/Socio Economic);
- Brian Sheridan (Odour Modelling);
- Barry Sheridan (Noise and vibration assessment);
- John Colleran (Traffic Assessment);
- Patricia Gilbert (Landscape and visual assessment);
- Martin Fitzpatrick (Archaeological assessment);
- Roger Macnaughton/David Rees (Ecological assessment);

to ensure that the description of the proposed Intensification and Extension of the Drehid Waste Management Facility is concise and reflects the conclusions and opinions formed in other areas of assessment. With respect to the design of the proposed extension to the facility, I liaised with David Conneran (Associate and Senior Engineer – TOBIN) who was responsible for the contract administration during the construction of the permitted Drehid Waste Management Facility. I also liaised with Ciaran Geoghegan (Resident Engineer for Construction Quality Assurance).

### 3 PROJECT OVERVIEW

Bord na Móna proposes to intensity and extend the already permitted Drehid Waste Management Facility. Under the current planning permission and in accordance with the current Waste Licence, 120,000 TPA of waste can be disposed of to the engineered landfill site with an additional 25,000 TPA permitted for treatment at a composting facility. The operational life of this facility is 20 years. Construction of the permitted facility commenced in August 2006 and the engineered landfill facility commenced accepting waste in February 2008.

This proposal would enable an additional 240,000 TPA of waste (over and above that already permitted) to be disposed of for 7 years. After 7 years the development will revert back to receiving the permitted 120,000 TPA for the remaining permitted operational life of the landfill.

A sand and gravel material borrow area (12.7ha) and a clay borrow area (10ha) have also been previously permitted at the site, from which material for the construction of the waste management facility is sourced and will continue to be sourced in the future.

Issues regarding the operations of the landfill and control of nuisances are dealt with in Section 3.13 (pp 258-262) and Section 3.14 (pp 263-268) respectively of Volume II of the EIS as submitted. Specific issues in relation to potential impacts and proposed mitigation measures for dust and odours are dealt with in Section 4.1.1 (pp 285-286) and Section 4.1.3 (pp 293-339) respectively of Volume II of the EIS.

The design of the proposed facility is as outlined in Section 3.2 to 3.11 of Volume II of the EIS (pp 185-233). The facility has been designed and will continue to be constructed in accordance with the EU Landfill Directive, BAT (Best Available Techniques), and the EPA Landfill Design Manual.

Specific aspects dealing with site construction and the operation of the permitted material borrow areas are outlined in Section 3.12 (pp 241-257) of Volume II of the EIS.

### 3.1 Design

The purpose of this section is to summarise the facility design outlined in the application including leachate and landfill gas management. Operations/nuisance control measures are summarised in Section 3.2 of this Précis of Evidence.

The existing and proposed facility infrastructure is as shown on Drawing No. 3369-2408 (Volume III of the EIS).

The landfill footprint encompasses 39ha as outlined on Drawing No. 3369-2402 which includes the proposed extension of 17.8ha. The total void space capacity of the landfill (permitted and proposed) is estimated to be 5 million cubic metres, and will provide a landfill capacity of approximately 4 million tonnes of waste.

The permitted landfill is being constructed in 8 phases and the proposed landfill extension will be constructed in 7 phases, to make a total of 15 phases. Stripping of the peat layer and preparation of the ground to the formation levels required takes place prior to the development of each phase.

The landfill will be progressively capped on completion of each phase, with ongoing landscaping taking place throughout the lifetime of the site. The landfilling operation is carried out in a planned and controlled manner, thereby minimising potential nuisances such as odours, dust, noise, litter, vermin, etc. The permitted facility has been designed, and is being constructed and operated in accordance with the conditions of the Waste Licence (W201-01) issued by the EPA. Environmental monitoring stations, in accordance with EPA requirements, have been established at the site and monitoring will be continued post closure of the facility.

On average the landfill will be 15-20m deep and the maximum final height, post settlement, of the landfill will be approximately 103.25 metres above Ordnance Datum (mOD)

The site will be managed and landscaped to reflect the specific attributes of the surrounding landscape. On final capping, the site will be allowed to recolonise to natural species. This final capping will also allow for the collection of clean surface runoff, which will be diverted via a surface water swale to the settlement lagoons and eventually discharging into the Cushaling River. The landfill is fully contained and has been designed in order to provide for both leachate and landfill gas collection.

The existing and permitted site infrastructure includes weighbridges, wheel-wash, site security arrangements, bunded waste inspection and quarantine areas, bunded fuel storage, site accommodation, site roads, surface and foul water drainage, leachate holding tanks, maintenance facility, surface water retention/settlement lagoons, landfill gas flare compound and car parking areas. Planning has already been secured for the entire site infrastructure mentioned above as part of the original proposal. Construction of such infrastructure has been completed. This existing site infrastructure will be used to facilitate the proposed intensification of the facility.

The proposed extension of the facility necessitates additional physical works including the development of additional ancillary facilities. As outlined in Table 3.1.1 (pp 179-180) of Volume II of the EIS, proposed additional physical works, ancillary to the proposed landfill phases, include the following:

- Site road around the perimeter of the proposed extension;
- Two surface water settlement lagoons;
- Fencing around the perimeter of the proposed extension;

### 3.1.1 Landfill Construction/ Basal Liner

The phasing of the development of the landfill and proposed levels on top of the drainage stone are shown on Drawing No. 3369-2412 (Volume III of the EIS). A typical layout for the cells in a phase is as shown on Drawing No. 3369-2416 (Volume III of the EIS). Table No. 3.4.2 (Volume II of the EIS, pp 200) also schematically represents the phasing of the landfill and presents an estimation of when the various developments will occur at the site.

Sections through the landfill are shown on Drawing No. 3369-2418 and Drawing No. 3369-2419 (Volume III of the EIS). Typical details of the basal lining system, structural berms and interphase berms are shown on Drawing No. 3369-2430 (Volume III of the EIS).

The basal lining system constructed at the site consists of a number of different layers as detailed in Drawing No. 3369-2430 (Volume III of the EIS). The basal lining system includes: leachate drainage layer (thickness 500 mm) with a hydraulic conductivity of greater than  $1x10^{-3}$  m/s.; protection layer consisting of a woven geotextile; barrier layer consisting of HDPE (high density polyethylene) geomembrane liner (2.0mm thickness) and low permeability (less than or equal to 5 x  $10^{-10}$  m/s) Bentonite Enhanced Sand (BES) (thickness 500mm) constructed on top of the formation layer.

All specified engineering works during the construction period, including the testing, placement and compaction of the mineral subsoil and BES are supervised by a suitably qualified engineer who is present at all times when site works are occurring. An independent construction quality assurance (CQA) validation of the landfill construction is undertaken at the completion of each phase of construction to determine and demonstrate that the basal liner and embankments have been constructed satisfactorily. A similar approach has been successfully conducted for the initial phase of construction of the permitted facility. The validation of the initial stage of the landfill construction was approved by the EPA and acceptance of waste commenced in February 2008.

### 3.1.2 Leachate Management

Leachate produced in a landfill is a liquid, produced from rainwater that has percolated through the waste, picking up suspended and soluble materials that originate from, or are products of, the degradation of the waste.

The issue of an increase in the treat of pollution due to the proposed development has been raised in three submissions to An Bord Pleanála. Prevention of pollution by the management of leachate and landfill gas is dealt with in Section 3.7 and Section 3.8 respectively of the EIS. Specifically, as outlined therein, the control of leachate is paramount in the design and operation of any landfill. Measures are necessary to minimise leachate generation and to collect and remove it in an environmentally safe manner.

The control of the hydraulic loading on the landfill liner is achieved primarily by the construction of a leachate collection and removal system, which encompasses a layer of drainage material and a herringbone leachate collection and transport pipe work system which drains to a series of leachate collection sumps from where leachate is pumped through rising mains to one of 2 No. leachate holding tanks. Details of the leachate collection systems, leachate management systems and leachate recirculation systems are presented on Drawing No. 3369-2413, Drawing No. 3369-2414 and Drawing No. 3369-2415 respectively (Volume III-of the EIS).

Table 3.7.1 (Volume II of the EIS, pp 209) presents the estimated average leachate generation rate per hour and per annum. Table 3.7.3 (Volume II of the EIS, pp 217) includes the estimated leachate generation rate per hour, the estimated daily average leachate quantities and details of the average daily quantities of leachate to the wastewater treatment plant. The combined volume of the two leachate holding tanks is approximately 400m<sup>3</sup>, providing approximately 8 days storage at maximum predicted generation rates. The leachate will be hauled off-site on a 5-day per week basis via 23m<sup>3</sup> (5,000 gallons) road tankers to an approved wastewater treatment plant. At peak production the maximum daily quantity to be transported to the facility will be of the order of 71m<sup>3</sup>, which equates to 3.1 tankers per day. However over the active lifetime of the facility, up to the end of 2027, the average daily quantity to be transported to the facility will be of the order of 48m<sup>3</sup>, which equates to 2.1 tankers per day.

The average leachate production from Drehid Waste Management Facility (permitted and proposed) is estimated to be equivalent to only 1.6% of the design volume of a typical small sewerage scheme of P.E. 4,000 persons.

Leachate generated by the facility is currently transported to Leixlip Wastewater Treatment Plant for treatment. It is proposed that the additional leachate produced due to the proposed intensification and extension of the facility will also be treated at Leixlip Wastewater Treatment Plant. Further correspondence has taken place between Bord na Móna and Kildare County Council with respect to this arrangement, culminating in a letter of agreement from Kildare County Council subject to terms and conditions

### 3.1.3 Landfill Gas Management

Landfill gas (LFG) is the end product of the microbiological degradation of organic material. It is produced under anaerobic conditions, for example in the waste body of a landfill site. Landfill gas consists primarily of the components methane (approximately 60%) and carbon dioxide (approximately 40%).

The combined effects of the following measures will adequately control potential gas migration:

- The installation of an intermediate gas collection system during the deposition of waste;
- The installation of a low permeability capping system including the temporary capping;
- The installation of the horizontal gas equalising layer on top of the waste body;
- The installation of the vertical gas collection system in each of the 15 phases of the landfill;
- Forced gas extraction from the landfill;
- The use of the existing landfill gas flare at the site for treatment of the landfill gas collected;

The layout of the permanent landfill gas collection system is shown on Drawing No. 3369-2415 (Volume III of the EIS). The location of the gas flaring equipment is shown on Drawing No. 3369-2415 (Volume III of the EIS). Details of the landfill gas compound are shown on Drawing No. 3369-2417 (Volume III of the EIS). Typical details of a condensate trap and a vertical gas well are shown on Drawing No. 3369-2417 (Volume III of the EIS). The design of the permanent landfill gas collection system for the proposed landfill extension will be similar to the design of the previously permitted permanent landfill gas collection system.

An intermediate landfill gas collection system, which involves gas collection during the infill of waste, will contribute towards effective odour control. A permanent gas collection and treatment system will be installed at the site on final capping of each phase. Intermediate gas collection during the filling of cells is achieved by means of horizontal pipe work systems. Following completion of waste deposition and placement of the temporary cap, vertical gas wells will become the primary vehicle for the collection of gas.

The enclosed landfill gas flare provided at the site will operate in accordance with EU and waste licence standards in terms of combustion temperature, retention times, emission levels etc. significantly reducing the potential for adverse effects on air quality. Landfill gas will be collected and flared during operation as well as after the cessation of landfilling, as gas production can continue for some years post-closure

#### 3.1.4 Capping System

Typical details of the proposed landfill capping system are shown on Drawing No. 3369-2417 (Volume III of the EIS) with Final Restoration Levels shown on Drawing No. 3369-2436 (Volume III of the EIS). The design of the landfill capping system for the proposed landfill extension will be similar to the design of the previously permitted landfill capping system.

The finished phases will be capped with a low permeability capping system, consisting of a linear low density polyethylene (LLDPE) liner and a compacted clay layer, which will serve to prevent

the uncontrolled migration of landfill gas and the infiltration of rainfall into the waste body thereby minimising the quantity of leachate generated. A temporary capping layer comprising 300mm of clay will also be installed on completion of each cell, with the maximum amount possible of this clay to be salvaged for re-use in the final capping layer.

The capping will also allow for the collection of clean surface runoff, which will be diverted via a surface water swale to the settlement lagoons to the adjacent watercourses. On completion of deposition of waste, the site will be fully restored and an aftercare/monitoring programme will be put in place.

#### 3.1.5 Material Borrow Areas

Planning permission for the periodic excavation of the clay borrow area, as a source of low permeability clay for the construction of embankment/bunds and landfill capping material, has already been secured. Construction of the facility to date has not necessitated the excavation of the clay borrow area due to the availability of suitable materials, for the construction of embankments and bunds, exposed during the stripping and clearing of areas to required formation levels. Bord Na Móna will endeavour to continue this construction approach for the remainder of the facility. Following the full realisation of the clay borrow area when the landfill has been fully restored the clay borrow area will also be fully restored. Any side stopes, which at that time had not been regraded, will be regraded to a safe side slope.

The previously permitted sand and graver borrow area has been partially excavated for the construction of the initial stage of the facility. The sand and gravel borrow area is used on a periodic basis for the provision of sand for use in the Bentonite Enhanced Soil (BES) layer of the basal liner. The sand and gravel borrow area is also used as a source for granular sub-bases for the facility roads and will also be used to provide granular material for the capping drainage layer on the landfill.

Surface water settlement lagoons are constructed at the sand and gravel borrow area, which prevent any uncontrolled emissions of run-off to the adjoining surface water bodies.

Section 3.12 (pp 241-257) of Volume II of the EIS specifically deals with the material borrow areas and also outlines potential impacts and proposed mitigation measures during the construction phases of the facility. The mitigation measures pertaining to the sand and gravel borrow area were successfully implemented during the initial phase of facility construction.

### 3.1.6 Site Roads and Hardstanding

The layout of the internal road network is shown on Drawing No. 3369-2402 and Drawing No. 3369-2408 (Volume III of the EIS), with different road types detailed on Drawing No. 3369-2411 (Volume III of the EIS). The various site road types are constructed in accordance with the following specifications:

### Roads - Permitted and constructed

- The permitted facility access road has been constructed. This road is approximately 4.8km in length and leads from the site entrance at the R403 Regional Road to the facility entrance and the operations area.
- The permitted facility site road has been constructed. The section of site road that leads from the facility entrance to the gas flare compound and the access ramp to Cell No.1 consists of a paved construction (Road Type 2).
- The section of facility site road around the permitted landfill footprint involves an unpaved road (Road Type 3) consisting of approximately 300mm of granular material such as recovered construction and demolition waste, on rockfill to suitable formation. The width of the road is 6m.

### Roads - Permitted and not constructed

The haul road which extends from the clay borrow area to the site road is a 6m wide road (Road Type 3). Construction involves an unpaved road consisting of approximately 300mm of granular material such as recovered construction and demolition waste, on rockfill to suitable formation.

### Roads - Proposed

- In line with the filling of landfill phases, the section of site road that runs between the permitted landfill and the proposed landfill extension will be upgraded to Road Type 2. Waste delivery traffic will use this section of road to access the current landfill phase. This road make up will consist of 40mm dense bitumen macadam wearing course, lain on 60mm dense bitumen macadam base course lain on 200mm Clause 804 material, lain on previous granular base.
- The facility site road around the proposed landfill extension footprint involves an unpaved road (Road Type 3) consisting of approximately 300mm of granular material such as recovered construction and demolition waste, on rockfill to suitable formation. The width of the road is 6m.

Where possible, and depending on the suitability of materials, granular material has been and will continue to be composed of suitable recovered construction and demolition waste.

As permitted, car parking has been provided for 17 cars, two delivery vans and one coach adjacent to the site administration building. Permitted concrete hardstand areas are provided at the waste inspection and quarantine area, fuel storage area and at the leachate storage area. The location of these areas at the site is shown on Drawing No. 3369-2408 (Volume III of the EIS). No additions or changes to the above hardstanding areas are required to accommodate the proposed intensification and extension of the Drehid Waste Management Facility.

### 3.2 Operations/Nuisance Control Measures

The purpose of this section is to summarise the facility operations and nuisance control measures outlined in the application.

### In summary,

- The operation of the permitted Drehid Waste Management Facility is being undertaken under the conditions of the current waste licence (W201-01) and the proposed operation will be undertaken under the conditions of a revised waste licence to be issued, following a review, by the EPA and subject to any additional approval from An Bord Pleanála.
- Concerns about daily operation hours have been raised in two submissions to An Bord Pleanála in relation to the proposed development. The hours of operation for the facility are outlined in section 3.13.1 of the EIS. As outlined therein the facility operates, as permitted, on a daily basis from 8.00am to 6.30pm Monday to Saturday each week. Waste is accepted at the facility between the hours of 8.00am to 6.00pm
- The facility has been designed and is being constructed and operated in accordance with BAT 'Best Available Techniques'.
- The landfill and on-site clay borrow area and sand and gravel borrow area are developed in distinct phases with working areas kept to a minimum;
- All conditions of licensing or planning approval, which include measures to minimise or
  prevent nuisance to the public occurring as a result of the operation of the facility are
  complied with in full. In addition, the facility will continue to be subject to stringent
  ongoing monitoring, as required under the relevant conditions of the EPA Waste Licence.
- Monitoring points in accordance with EPA requirements have been and will continue to be
  established at the site and incontoring will be continued post closure of the facility. The
  primary aims of this programme are to comply with legislation and the requirements of the
  EPA and to quantify the quality of the environment in the vicinity of the facility and
  identify any adverse impacts from the development of the facility.
- Emission Limit Values (ELV) have been set by the EPA for many of the parameters to be monitored.
- A complaints register detailing all complaints received from the general public in respect
  of the operation of the facility is maintained at the site, with complaints investigated and
  acted upon in a prompt manner.
- Contingency plans have been put in place and any accidents or emergencies are handled by
  calling in the relevant authorities including the Fire Service, Gardaí, or Ambulance
  Services. Emergency response contact numbers for all these services are prominently
  posted on-site. All site operatives and other relevant employees of Bord na Móna are also
  trained in emergency response procedures and in fire prevention and control.

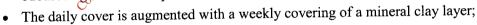
It should also be noted that the licensing of the landfill by the Environmental Protection Agency is not a one off event but an ongoing process continuing through construction and operation to beyond the closure of the waste facility and also relates to the acceptance of waste.

All activities carried out on-site are in compliance with the conditions of the waste licence. Ongoing environmental monitoring is carried out and an Annual Environmental Report and Environmental Management System are prepared for the facility.

Concerns over nuisance have been raised in a submission to An Bord Pleanála in relation to the proposed development. Some specific operational and nuisance control measures are outlined below (these are extracted from Section 3.3.15 (pp 195-197), 3.12 (pp 241-257), 3.13 (pp 258-262), Section 3.14 (pp 263-268), Section 3.16 (pp 282-283), Section 4.1.1 (pp 285-286), and Section 4.1.3 (pp 293-339) of Volume II of the EIS:

- Only household, commercial and non-hazardous industrial wastes which have been pretreated or are not suitable for pre-treatment are accepted onto the site for deposition to the landfill;
- Modern wind blow netting systems are employed at the working face of the landfill;
- A trained falconer is employed on the site twice monthly; the frequency of the visits is reviewed periodically;
- Regular inspection and litter collection is undertaken at the site and adjoining land;
- Concern over odour control has been raised in one of the submissions to An Bord Pleanála.

  Odour emission from the landfill site is reduced and controlled as follows:
  - The size of the working face is minimised and all other areas are covered;
  - All waste entering the facility is in covered vehicles. Bord na Móna excludes any contractor failing to comply with this requirement from entering the site;
  - The waste is immediately and thoroughly compacted after it is deposited;
  - Daily cover material such as hessian, construction and demolition fines, biodegradable geo-synthetic sheets or soil is placed on the working face at the end of each working day to prevent volatilisation, stripping and surface emissions of odourous gases from exposed waste;



- Odour patrols of the site are carried out on a daily basis;
- Landfill gas control measures including intermediate gas collection and permanent gas collection;
- Monthly odour inspection protocols on all areas of the landfill to identify any fugitive leakage emissions and to remediate such surface emission locations using appropriate and adequate techniques;
- Quiescent conditions within the leachate management facility while emptying and filling leachate from/into leachate holding tanks.
- Sealing around all leachate and landfill gas pipe work at ground level with mineral clay/welded HDPE liner to eliminate any leakage of landfill gas through gravel/sand matrix to atmosphere.

Bord na Móna is currently in the process of implementing a system for gas abstraction within the active phase of the landfill. This system will be operated in conjunction with the continued deposition of waste to the landfill. Following the placement of the temporary cap in an area, the gas collection system will be enhanced to include





vertical gas wells installed at minimum 40 metre centres to remove landfill gas generated and provide transportation to the landfill gas flare for treatment. The landfill gas extraction system will maintain the cells under slight negative pressure in order to prevent the fugitive release of landfill gas from surfaces.

- A firm of professional vermin control experts have implemented the Vermin Control Plan.
   Baiting has been undertaken in a professional manner and every precaution has been taken to avoid non-target species;
- Dust mitigation measures include the following:
  - All trucks leaving the facility drive through a wheel wash as outlined in Section 3.3.5 (pp 190) of Volume II of the EIS;
  - During dry conditions, a tanker sprays water on site roads and other exposed areas. Roads are sprayed with water prior to sweeping and cleaning;
  - Immediate compaction of waste following deposition;
  - Covering of waste on a daily basis;
  - The facility is designed such that the majority of landfill construction activities take place within embankments;
  - Grassed and planted screening berms are being developed to the West and North of the landfill footprint;
  - Stockpiled clay in the permitted clay borrow area will be covered by industrial tarpaulins;

To date there has been one recorded exceedance in allowable dust deposition. This exceedance occurred at the site entrance with the R403 road following dust deposition monitoring that commenced in May 2008 and finished in June 2008. A deposition rate of 383 mg/m²/day some 33 mg/m²/day in excess of the 350mg/m²/day EPA limit) was recorded. Previous and subsequent dust deposition monitoring at the same location provided a result of 49 mg/m²/day and 17 mg/m²/day respectively. Operational activity at the facility is not thought to be a contributing factor to this exceedance on the basis of acceptable dust monitoring results recorded at all other locations closer to the facility. There was increased farming activity including the ploughing and planting of grass seed in an adjacent field east of the dust monitoring location during the recording period, which may have contributed to elevated dust levels.

• The issue of fire risk, which has been raised in one submission to An Bord Pleanála in relation to the proposed development, is dealt with in Section 3.3.15 (pp 195-197) of Volume II of the EIS. Contingency Arrangements and Emergency Response Procedures are also proposed in the unlikely event of a fire as outlined in Section 3.16 (pp 282-283) of Volume II of the EIS. Specifically, as outlined therein, the facility has been designed to mitigate against the potential of fire at the facility. Peat is extracted to clays on the whole of the landfill footprint and to a distance of 20 metres beyond the outer toe of the landfill. Structural clay berms 4-6m high and 20-25m wide are constructed around the perimeter of

the landfill footprint. The entire landfill footprint is isolated from the surrounding peat land and scrub by way of a 6m wide perimeter site road and a surface water swale. This road and swale serve as a potential firebreak while providing ready access to all areas of the landfill. In effect the potential pathway i.e. the peat, is removed and there is no risk of subterranean passage of a fire between the landfill and the surrounding lands. Clay and granular material within the structural berms and the granular material in the perimeter site road will not burn.

The following fire prevention measures are provided at the facility:

- Training of all site operatives and employees in fire prevention and control;
- Inspection of incoming waste for flammable or explosive items;
- Effective landfill gas management including collection and flaring to minimise methane content;
- Immediate compaction of waste upon deposition to prevent hot spots from forming;

The following fire fighting measures are provided at the facility:

- Availability of water for fire fighting purposes. Two existing surface water lagoons and two proposed surface water lagoons provide a minimum volume of 5000m3 of water (36 times the volume required based on previous consultation with the Fire Safety Officer in Kildare County Council). Level instrumentation in the lagoons maintain a level of water such that the predetermined volume of firewater is available at all times.
- Fire main pump permanently located adjacent to the surface water lagoons and capable of pumping water to the location of a fire;
- Tractor and 10m3 tanker permanently located on site and available for transportation of water to the location of a fire;

### 4 CONCLUSION/SUMMARY POINTS

The proposed extension to the Drehid Waste Management Facility is designed and will be constructed, operated, monitored and restored in accordance with European Council Directive 1999/31/EC on the landfill of waste, the EPA Landfill Manuals, BAT guidance notes for waste facilities, the EPA waste licence and any planning conditions.

The design of the proposed extension to the facility is similar to the design of the already permitted facility of which Phase No.1 has been constructed, tested and approved for waste acceptance by the EPA, and is currently accepting waste.

The permitted and already constructed site infrastructure is capable of accommodating the additional traffic and waste generated by the intensification of the facility. The majority of the mitigation measures outlined in the application have already been implemented, validated and proven to be successful in the elimination/minimisation of nuisances.

The natural setting of the site, together with the engineered mitigation measures outlined in the EIS will ensure that the receiving environment will not be impacted by the proposed facility.

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# Quotions per Pert O'Neill.

I have spoken to coorteers from the landfull site on my travels or they have confirmed to me that more has been some issues with pliess on site. Aparant so me site has been sprayed recently to deal with this problem. This has not reduced the problem in our home.

Romind Pat Mat Mere is a pholograph of uncovered worker only last sunday. So here is no contarage of wade and about a photograph basis nover mind advanged and a special mediane per ashimatic babios and this dust is a hazard to her health, or more likely the course of hor illness.

Those who signed this are driven crazy by the amount of flies in their homes and are deeply concerned wondering if this is the effect after 6 months; what does the future hold for our community? I would have a lot more names for you than I do today, but in every house I visited, I had to lend a sympathetic ear, and listen to every person's story on the effect these flies were having on their lives. One lady told me that she killed over 100 flies in her kitchen in one evening with a fly-swotter and had already been in contact with Cllr Fitzpatrick in relation to the problem. My time ran out and unfortunately I could not visit every area. I did not get to visit the Timahoe area, but Gerry Woods, who is partaking in this hearing, assures me that they have the same issues. If any person has any doubt as to the extent of this problem, I suggest they go door to door and talk to the community just like I did, and they will soon see that the same story emerges in every household. Indeed if Bord Na Mona had bothered to go through the same public consultation process they did when they were initially trying to establish the landfill, and get their foot in the door, they would be well aware of these issues.

How does this affect the quality of our lives? We can't open our windows; as we try to eat, we have flies flying in our faces; if we have visitors to our home, we are embarrassed by flies buzzing about them as they drink their tea. This may sound comical to some but it is not funny to live with. We have to cover our food when we get up from the table. They are landing on our babies and on their toys and food. I went up to check on my 3 year old while he slept one night and found two flies just sitting on his face. I wish I could convey to you the desperation I felt. How does this affect our health? Most people are aware that flies are carriers of disease and are commonly associated with food poisoning.

Although this fly species does not bite, the control of Musca domestica (the common house fly) is vital to human health and comfort. The most important damage related with this insect is the annoyance and the indirect damage produced by the potential transmission of pathogens (agents causing disease) (viruses, bacteria, fungi, protozoa (microscopic organisms), and nematodes (microscopic worms) associated with this fly. Pathogenic organisms are picked up by flies from garbage, sewage and other sources of filth, and then transferred on their mouthparts, through their vomit, faeces and contaminated external body parts to human and animal food. For anyone who is not already aware of this, flies do regurgitate onto any food they land on.

Of particular concern is the movement of flies to food that will be eaten uncooked by humans such as fruit bowls in our kitchens. Also, when consumed by flies, some pathogens can be harboured in the mouthparts or alimentary canal (the passage along which food passes through the body from the mouth to anus during digestion) for several days, and then be transmitted when flies defecate (discharge faeces from the body) or regurgitate. Among the pathogens commonly transmitted by house flies is Salmonella but there are many other species that cause illness. These flies are most commonly linked to outbreaks of diarrhoea but also are implicated in transmission of food poisoning, infectious diseases such as tuberculosis and parasitic worms.

I would like to refer to the submission from Pat O'Neill of Toblin Consulting Engineers on behalf of An Bord na Mona (please see enclosed) to the oral hearing held by An Bord Pleanala on 9th and 10th September of this year on the facility design and operation.

P. A. B. B.

In Section 3.2 titled Operations/Nuisance Control Measures, there is absolutely no mention of the Drehid Landfill site having an infestation of flies, or the subsequent employment of a pesticide company to attempt to deal with this. Yet when I produced evidence that the whole community was suffering from the effects of this, they held their hands up and admitted they had a major issue on site. What was the purpose of omitting this? The purpose of omitting this was to try and hide the fact that only 6 months into their operation; they had created a nuisance and a health risk to the whole community.

Also in section 3.2 he talks about daily cover material such as hessian being placed on the working face at the end of each working day to prevent volatilisation, stripping and surface emission of odorous gases from exposed waste. Please see enclosed an aerial photograph taken the Sunday before the oral hearing showing that there was no covering on the landfill working face. This was further confirmed by a neighbour who walked up to the site and saw this first hand.

It now also seems that this material that Bord na Mona were supposed to be using to cover the landfill was completely unsuitable anyway and would have further contributed to our fly nuisance. We as a community cannot afford to bear the brunt of any more of Bord na Mona's errors. This proves that it is far too premature of them to consider intensifying the operation of this facility, when they community has already suffered nuisances only 6 months into their operation.

Let us not presume either that just because they have employed a pesticide company that that they will achieve a satisfactory outcome to the issue of fly infestation in the community; in fact to achieve a valid and reliable judgement on this, we would have to compare this summer with next summer. This application should therefore not proceed until this issue is proven to be resolved. Indeed, the fact that this violation of the quality of life, in our community has taken place at all, at such an early stage in the operation of the facility, raises alarm bells as to whether the operation of this landfill should be let continue at all never mind expand.

I will not accept a health risk to my children. My community will not put their children's health at risk. Bord na Mona have demonstrated already by omitting us from their consultation process that they do not feel they are answerable to us, but they have created this problem and need to be held accountable. The health and welfare of people in our area is at risk already and your conscience should not let you accelerate the problem by intensifying the operation of this facility; rather it needs to be scaled back dramatically or stopped completely as a measure to rectify this nuisance. The health of my one year old daughter Stephanie and my four year old son Thomas is now in the hands of An Bord Pleanala and the Environmental Protection Association. If permission for the intensification of this facility is granted, they, and all the children in our community will be further exposed to these agents carried by flies, which cause illness. This is an unacceptable risk, and is not something that could be even considered.

100% of the houses I visited stated they have this problem and gave me their signature. This is a frightening statistic and we can assume by this response that everyone in the surrounding areas of the landfill site is affected. I cannot see how we can all be ignored. There is a serious problem with this landfill at a very early stage in its life cycle; we need to deal with it immediately and the first step is to turn down this application by An Bord Na Mona for its expansion and intensification.

In the days before the oral hearing with An Bord Pleanala, I have gone door to door in the area to find out if anyone else was having the same issues as myself. What stood out most is that a lot of people were shocked to learn that there was an application in to extend, and intensify the Drehid landfill, and they have a lot of concerns about it. During Bord na Mona's initial application to establish this facility, we were all very well informed of their intentions, where as this time, even I, who am part of the Community Liaison Committee was not even informed of their plans for expansion. I will read out the first paragraph of the terms of reference adopted by Bord na Mona for this committee:

"The Community Liaison Committee will meet at regular predetermined intervals, to provide a forum for the local community to interact with the operator of the facility and to keep all interested parties informed of developments."

This is taken from the Drehid Waste Management Facility, Environmental Impact Statement, February 2004, (Sec 4.7.5.) and was adopted at the inaugural Meeting of the Community Liaison Committee on 14th March 2008. Present at this meeting were:

John Connolly Bord na Mona
Gerry McNally Bord na Mona

Ms Karen Keane Executive, Kildare County Council

Ms Sinead Fitzpatrick Executive, Kildare County Council (absent)

Clir Tony McEvoy
Clane Local Area Committee, Kildare County Council
Clane Local Area Committee, Kildare County Council

Mr Liam Hartford Community Representative Ms Breda Logan Community Representative

It is unbelievable therefore that I had to read about the application to extend and intensify the Drehid Waste Management facility in the Leinster Leader, instead of being kept up to date at these meetings as was part of their purpose. You will not see the Local Community or the Community Liaison Committee listed as part of their Consultation process described in section 1.6, Volume 2 of their EIS. They say in this section that "the consultation process consisted of consultation with competent bodies, statutory bodies and interested parties." In the above terms of reference the community is identified as one of these interested parties, but common sense would tell you that anyway. The local people who have to live with the effects of this landfill are the most interested party and should have been the first to be consulted.

Finally, I ask the EPA to consider us, the community who are facing a very real nuisance, and major risk to our health. Thank you for your time.

Attached:

Terms of reference for the Community Liaison Committee

Signed statement from members of the surrounding community

regarding fly nuisance.

Aerial photograph showing uncovered waste on Sunday 7<sup>th</sup> September.

Submission on Facility Design and Operation by Pat O'Neill from Tobin

Consulting Engineers

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# **Community Liaison Committee**

Drehid Waste Management Facility

# **Draft Terms of Reference**

The Community Liaison Committee will meet at regular predetermined intervals, to provide a forum for the local community to interact with the operator of the facility and to keep all interested parties informed of developments.<sup>1</sup>

The composition of the committee shall be based upon equal representation of personnel from the planning authority, the developer, local residents and elected members of Kildare County Council. The composition of the committee and any variation thereof shall be subject to the prior agreement of the planning authority.<sup>2</sup>

The committee shall identify environmental works and community facilities to be funded under condition no. 17 of An Bord Pleanala decision PL09.212059.3

<sup>1</sup> Drehid Waste Management Facility, Environmental Impact Statement, February 2004, Sec. 4.7.5

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 An Bord Pleanála Decision PL 09.212059, Condition no. 16

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The number of flies in my home has increased dramatically this year, 2008, so much so that they have become a nuisance. The opening of the Drehid landfill has undoubtedly caused this. I am convinced that the landfill site along with the number of trucks carrying waste through my area has created this problem and has had a major impact on the quality of life in our home. I have major concerns regarding the health implications of this increase. It is well known that flies carry disease and are commonly linked to food poisoning. I support Breda Logan's opinion that any intensification or extension of the landfill will increase this problem and pose a major health threat and further nuisance to our community.

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