

Article 16(1)(a)(i) Further Information

Particulars and Evidence For

Nurendale Ltd

T/A PANDA WASTE SERVICES LTD

Waste Licence Review No. W0140-04

Article 16 Compliance

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1. INTRODUCTION

This is the response by Nurendale Ltd, trading as PANDA Waste Services (PANDA), Rathdrinagh, Beauparc, Navan, County Meath, to the Notice issued under Article 16(1)(a)(i) of the Waste Management Licensing Regulations, dated 15th April 2011, in relation to Application Register No. W0140-04 for the Materials Recovery Facility at Rathdrinagh, Beauparc, Navan, County. Meath.

Section 2 contains the responses to the Agency's requests. For ease of interpretation each of the requests are presented in italics followed by PANDA's response.

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2. ARTICLE 16 COMPLIANCE REQUIREMENTS

1. *State what interaction/consultation has taken place with Department of Agriculture and Food and Marine (DAFM) to date. State what is to be authorised by DAFM under the Animal By-products Regulations EC NO. 1069/2009 and show that is anticipated authorisation will be obtained.*

PANDA submitted an application to DAFM for a Stage 1 Approval under the Animal By-Products (ABP) Regulations EC No 1069/2009 in August 2009. A copy of the application, which describes the process and the measures that will be implemented to comply with the Regulations, and the DAFM acknowledgement of receipt is in Attachment A.

PANDA subsequently met the DAFM on the 16th January 2010, at which clarification on certain aspects of the proposed facility was provided. The DAFM ABP application will be progressed by PANDA

2. *State how it has been determined that final stage pasteurisation is preferable and a better environmental option than initial stage pasteurisation. Take into consideration the potential risk of build of pathogens and other harmful bacteria in the process prior to pasteurisation, the potential loading due to microbiological build up on the air treatment system, risk of cross-contamination within the process and risk of cross contamination of pathogens and other harmful bacteria to the environment outside the facility.*

A detailed response to Request No 2 is presented in the report prepared by Odour Monitoring Ireland Ltd, which forms Attachment B.

In summary, initial stage pasteurisation is commonly only applied to wet fermentation systems, typically at farms where farm animals are kept and where the feedstock is liquefied and pumped through the process in sealed pipework/tanks.

Final stage pasteurisation is the preferred method at dry fermentation plants that handle ABP containing wastes, where solid wastes are moved through the process using mechanical loaders. In Ireland, final pasteurisation is also one of the preferred method at composting plants that process ABP containing wastes. Dry fermentation and composting are similar processes, with the exception that dry fermentation occurs in the absence of oxygen, while composting occurs in the presence of oxygen.

Pasteurisation, unlike sterilisation, is not intended to kill all of pathogens present, but to reduce the level of viable pathogens so they are unlikely to cause problems. The European Union (EU) ABP pasteurisation requirements require the initial screening of the wastes to a particle size less than 12mm, following which the wastes are subjected to temperature of 70^oC for one hour.

Initial stage pasteurisation would very significantly reduce the total micro-organism population. Furthermore, as the dry fermentation process requires a particle size of between 20mm to 30mm to allow liquid to circulate through the waste, screening to 12mm would

adversely affect the circulation rate. Therefore, initial stage pasteurisation would, due to the reduction in both the micro-organism population and the particle size, significantly inhibit the fermentation process.

Final stage pasteurisation does not present a risk from the microbiological build up of pathogens and other harmful bacteria either in the process area, or the air treatment system. The wastes that will be accepted and processed at the facility are the same as those already treated at existing composting plants in Ireland, many of which have less sophisticated air handling systems to that proposed for the Beuparc facility. Monitoring at these facilities has demonstrated that bioaerosols, which are primary the vectors by which bacteria can move from the process area to off site receptors, are not a cause of concern.

Further details on how cross-contamination will be prevented are provided in the response to Request No. 4, while the responses to Requests No 3 and No. 11 address the significance of microbiological build up in the air treatment system.

Final stage pasteurisation is the best environmental option in that it maximises the operational efficiency of the process and ensures that the finished product meets the ABP pasteurisation requirements. There is no evidence to indicate that the current controls applied at biological treatment plants are not effective at minimising the risk of build up of pathogens and other micro-organisms presents to either cross contamination within the process, or the environment outside the facility.

3. *Clarify how is it proposed to prevent a build-up of pathogens and/or other harmful micro-organisms in all stages of the process including the bio-trickling filter, the carbon filter in the RDF plant and on equipment used prior to the pasteurisation step. Clarify how it is proposed to prevent similar build up of feedstock in transport vehicles.*

A detailed response to Request No 2 is presented in the report prepared by Odour Monitoring Ireland Ltd, which forms Attachment B. In summary, pre treatment will be provided on the air ducted to both the biofilter and the carbon filter. In the case of the biofilter, the pre-treatment will comprise a wet scrubber and, for the carbon filter, a dust filter and a plasma generator. Both pre-treatment systems are effective in controlling micro-organism build up.

As dry fermentation and composting are biological processes that depend on bacteria and other micro-organisms to treat the waste, it is counterproductive to attempt to either kill, or reduce the numbers prior to the pasteurisation stage. However, a strict cleaning and hygiene programme will be implemented at the facility in accordance with the conditions set in the Approval that will be issued DAFM. (Refer to Response No. 1). Further details on this programme is provided in the response to Request No 4.

The wastes processed at the facility will comprise household and commercial wastes that are collected in standard refuse collection vehicles. These will be subject to routine cleaning and maintenance. The wheels of the vehicles that enter the waste reception area in Building 4 will be cleaned and disinfected, and any gross external contamination removed.

4. Clarify how the risks of cross-contamination will be controlled:

- *Between chambers and equipment and operators within the biological treatment facility including interactions between pre pasteurisation and post pasteurisation areas and the indoor and outdoor environment. Elaborate on pest control arrangements at the biological treatment facility;*
- *Whether a one way system was proposed;;*
- *Between equipment and operators used in the pre pasteurisation and post pasteurisation areas and the risk of final product contamination;*
- *Between the equipment and operators working inside the biological treatment facility and the outdoor environment and;*
- *Between pests which have the potential of carrying pathogens or other harmful micro-organisms from biological treatment site and the environment outside the boundaries of the facility.*

Details of the process, including the measures that will be taken to avoid cross contamination, are presented in the Application for Stage 1 approval, which forms Attachment A. In summary, Building 4 is located at an adequate distance from any areas where farm animals are kept and there is no access to the building from any place where farm animals or other animals are kept.

Building 4 will be separated from the other waste processing buildings and will be surrounded by stock proof fencing, as described in Appendix 2 of Attachment B.

The access route from the public road to Building 4 is laid out in a manner that ensures the separation between the road used by vehicles delivering the waste to the building and those transporting the finished product from the plant. The routes are shown on Drawing No. CCS/JOB/024/004 in Attachment A.

Building 4 will be segregated into 'Dirty' and 'Clean' Areas, as shown on Drawing No. CCS/JOB/24/001 in Attachment A. There will be a 'one way' materials flow system to avoid interaction between operators and equipment causing cross contamination of the finished product and the non-pasteurised materials. The materials flow, including the access and egress for vehicles, is shown on Drawing No. CCS/JOB24/006 in Attachment A.

The building will be provided with dedicated access/egress routes for operators and vehicles to avoid contaminated materials being inadvertently being brought out of the 'Dirty' Area. The waste reception area will be cleaned at least once daily when in use and disinfected/steam cleaned at least once a week.

The wheels of all vehicles leaving the 'Dirty Area' will be cleaned using a disinfectant in the dedicated 'Wash Down Area'. All personnel access doors to the 'Dirty' Area will be provided with disinfectant boot washes/ foot baths. The locations of the personnel door and 'Wash Down Area' are shown on Drawing No. CCS/JOB24/005.

A pest control programme which will include a bait map and bait servicing schedule will be implemented at the plant at the required frequency. The bait points will be visible and clearly numbered. The results of inspections carried out at the bait points, as well as the corrective actions taken, will be recorded.

5. *Elaborate on how the technology in the biological treatment facility is BAT.*

The European Commission's Reference Document on Best Available Techniques for the Waste Treatment Industries 2006, (BREF) includes BAT for anaerobic digestion and composting plants. This addresses both procedural, design and operational matters, including environmental management systems (EMS); waste acceptance; efficient processing and emission controls.

Section 4.2 describes the Techniques that should be considered in biological treatments. It requires the provision of appropriate waste reception, storage and quarantine area; suitably designed and constructed fermentation vessels and composting bays; screening areas, and the installation of suitable monitoring sensors to monitor the treatment process and confirm that the required operational criteria (for example temperature, moisture content), are achieved.

Section 4.2.6 describes the techniques to reduce emissions to air when biogas is used as a fuel. Section 4.2.8 describes the techniques to improve mechanical biological treatments, Section 4.2.10 describes the aeration control techniques for mechanical biological treatments (MBT) and Section 4.2.11 describes the management of exhaust gases from MBTs.

Condition 2 of the current licence requires PANDA to develop and implement an EMS for the facility. The scope of the EMS is consistent with BAT 1 to 6 of the BREF which are presented in Sections 5.1.1 to 5.1.6 requires PANDA to prepare operational control procedures for all waste activities and ensure that facility staff are provided with the appropriate skill set and training to perform their assigned functions. PANDA will prepare operational procedures that cover all aspects of the anaerobic digestions and composting process and provide the necessary training to facility staff before the plant is commissioned.

BAT for Biological Treatment (Anaerobic Digestion and Composting Plants) is described in Section 5.2 of the BREF (BAT 65 to 74), which deal with the techniques to be applied in the storage and handling of the wastes in anaerobic digestion, reducing air emissions, improving treatment and reducing emissions.

The proposed design takes into consideration the requirements of Sections 4.2.2, 4.2.4, 4.2.6, 4.2.8, 4.2.10, 4.2.11, 5.1 and 5.2 of the BREF. In particular:

- BAT requires the collection and treatment of odorous air from the waste reception area. This will be achieved by a combination of building design and construction; provision of a negative air system and the treatment of the odorous air in appropriately designed and operated treatment plant.
- BAT requires the collection and the appropriate management of wastewater generated from the treatment process. The proposed design includes for the collection and reuse of percolate from the digestion and compost stages process.
- BAT requires all emissions from biological treatment plants to comply with minimum criteria. The emissions from the proposed plant will meet the emission limit values set in the Waste Licence

6. *Confirm the maximum volume of bio-gas to be stored at any one time at the facility;*

- *Clarify what controls are proposed in the biological treatment facility and the CHP plant to mitigate against fire and explosion risks and state whether the regulatory control bodies have approved these measures in accordance with relevant standards/legislation.*

Bio-gas will not be stored in bulk at the site. The bio-gas generated in the fermenters will occupy the head space above the waste from where it will be drawn to the CHP plant. The total area occupied by the fermenters is 2,992m². Assuming a head space of 1.5m, and that all of the fermenters are operational, the maximum volume of bio-gas in stored at any one time will be 4,488m³. It should be noted that the maximum volume in the headspace in any one of the fermenters will be 321m³ and the pressure will be 25mbar.

The control measures that will be applied in the biological treatment facility and CHP plant to mitigate against fire and explosion risks are describe in the report prepared by AWN Consulting, which forms Attachment C.

In summary, as the biological treatment process does not involve the bulk storage of bio-gas, the proposed plant is lower risk than many other anaerobic digestion facilities that do have bulk storage.

Notwithstanding the low risk, the facility will be designed and operated in accordance with the Safety, Health and Welfare at Work (General Application) Regulations 2007; Part 8 Explosive Atmospheres at Places of Works. This will include completion of a Hazard Identification (HAZID) and Hazard and Operability Study (HAZOP) and the preparation of an Explosion Protection Document (EPD) which will be submitted to the Health and Safety Authority (HSA) for approval before operations begin.

7. *Elaborate on how the bio-trickling filter's design ensures that it is capable of filtering pathogens/bacteria, bio aerosols, fine particles and other parameters from process air prior to discharge.*

A detailed response to Request No 7 is presented in the report prepared by Odour Monitoring Ireland Ltd, which forms Attachment B. In summary, the bio-trickling system air ducted to the bio-trickling filter will pre treated using a wet scrubber designed to remove particulates and bioaerosols, and a vane eliminator that can remove water droplets >1µm. The air leaving the biofilter will then be sterilised using a plasma injector before it enters the carbon filter. This will not only remove odorous compounds, but also sterilise the carbon filter bed and improve operational efficiency.

8. *It has been proposed that during periods when the biomass furnace was not operational that air emissions would be discharged via the carbon filter unit. The Dispersion Modelling Assessment examined the predicted emissions from a RTO and a Biomass furnace. Describe the emissions from the carbon filter*

- *State whether the predicted emissions from the carbon unit have been considered in the Dispersion Modelling Assessment and state whether this alters the assessments conclusions, and confirm whether this alters the assessment's conclusions that the facility will not impact on the air quality in the surrounding areas.*

Odour Monitoring Ireland Ltd has revised its report on the odour impact assessment of the proposed plant, including a Dispersion Modelling Assessment, to include the emissions from the carbon filter unit. The revised report (Report Number 2011A395(1) forms Attachment D. The modelling results do not alter the conclusions of the original assessment and confirm that the emissions from the carbon filter will not impact on air quality in the surrounding areas.

9. *Clarify why the parameters hydrogen chloride and hydrogen fluoride have not been added to Table 3.6 of the Dispersion Modelling Assessment. Update Table 3.6 with the following data relevant to the parameters;*

- *Confirm if these emission rates were taken into account in sections 4.1.5 and 4.1.6. If this data was omitted, update these sections of the report and any other affected sections accordingly;*
- *Table 3.6 lists emission values for specific parameters. Quantify the potential for dioxin omissions from the biomass furnace, in particular during combustion of process off gases.*

A detailed response to Request No 9 is presented in the report prepared by Odour Monitoring Ireland Ltd, which forms Attachment B. In summary, it had originally been proposed to treat the odorous air from the dryer in an RTO and the Biomass Furnace would only be used to produce heat. Therefore, hydrogen chloride and hydrogen fluoride were not included in Table 3.6, as the combustion of wood chip in the Furnace would not have given rise to the formation of these compounds and it was not necessary to include them in the modelling of the emissions from the Furnace stack.

Following the decision to change the design to omit the RTO and to treat the odorous air in the Biomass Furnace, Odour Monitoring Ireland Ltd revised its Dispersion Modelling Assessment to update the process emissions. A copy the revised report (Report No. 2011A 268(1) forms Attachment E. Table 3.2 of the revised report presents data on flue gas quality and flow from the Biomass Furnace stack (please note the reference to RTO Exhaust Stack is a typographical error). The table includes the concentration limit values for hydrogen chloride and hydrogen fluoride and these have been taken into consideration in the dispersion modelling.

The combustion of biomass will not result in the formation of dioxins. The combustion of the process off gases in the Biomass Furnace will occur at temperature of 850⁰C at a retention time of 2 seconds. While the process gas is not a source of dioxins, the temperature and residence time in the furnace is a fail safe as it will prevent the formation of dioxins, which are generated at temperatures of between 400 and 600⁰C.

10. *Based on the mass emission rates in table 3.2 and 3.6 of the Dispersion Modelling Assessment, the 'concentration limit values' and the 'mass emission rates' appear higher for the predicted emissions from the biomass furnace than the RTO system. In a previous application it is stated that the biomass furnace gives a higher level of treatment to odorous air than the previously reported RTO system*

- *Clarify with regard to emission quality and not process efficiencies, and why the biomass furnace was chosen instead of the RTO.*
- *Elaborate on how the biomass furnace is BAT for the treatment of off-gases.*

A detailed response to Request No 10 is presented in the report prepared by Odour Monitoring Ireland Ltd, which forms Attachment B. In summary, the original Dispersion Modelling Assessment (Report No. 2011A133(1) included data on the 'concentration limit values' and the 'mass emission rates' from both the RTO (Table 3.2) and the Biomass Furnace (Table 3.6). At that time, it was not the intention that the biomass furnace would treat the odorous air.

As referred to in the response to Request No 9, the original Dispersion Modelling Assessment has been revised and is in Attachment E. The revision reflects the design change, where the Biomass Furnace replaces the RTO. The changed design has resulted in a reduction in the carbon monoxide levels from the Biomass Furnace.

The Biomass Furnace fulfils the same function as the RTO in terms of treatment of odorous air, but provides a significantly higher level of treatment. The RTO was designed to achieve a combustion temperature of 800⁰C with a retention time of 1.2 seconds. The Biomass Furnace is designed to achieve a temperature of 850⁰C with a retention time of 2 seconds. This equates to a 70% improvement in emission treatment capacity compared to the RTO.

The European Commission's Reference Document on Best Available Techniques for the Waste Treatment Industries (2006) recognises 'combined combustion', where polluted air collected from the workplace is injected directly into either the secondary air circuit of the burner, or the primary air that goes to the burner as BAT (Refer Section 4.6.15). Further details on why the Biomass Furnace is considered to be BAT are provided in the Response to Query 10 in the OMI report that forms Attachment B.

11. Elaborate on how the carbon filters design is capable of filtering pathogens/bacteria, bio aerosols, fine particles and other parameters from process air prior to discharge.

A detailed response to Request No 11 is presented in the report prepared by Odour Monitoring Ireland Ltd, which forms Attachment B. In summary, the odorous air drawn to the carbon filter will first pass through a high efficiency dust filter, which is designed to achieve a particulate removal efficiency of 99.5%. This is required to ensure the molecular voids in the carbon filter are not blocked thereby impeding its proper functioning as an odour control system. The air leaving the dust filter will be injected with plasma that will oxidise any bacteria present in the air, which will minimise the risk of pathogen build up in the filter and also enhance to operational life of the filter.

12. As previously confirmed, the lean-to area is proposed to be fully enclosed as per Drawing no. 10-03-101-SK04.

- *Confirm when it is proposed to enclos this area as per drawing;*
- *Confirm if noise monitoring as been carried out while C&D recovery area was fully operational and provide the relevant monitoring results.*

The Lean-To will be enclosed by Q4 2012

Noise monitoring has been carried out while the C&D Recovery area was fully operational and the results are in Attachment F. Also enclosed is a report on noise monitoring conducted

by the Agency, which was also carried out when the C&D Recovery area was operational. The surveys confirmed that noise emissions from the facility complied with the licence requirements.

13. Confirm when it is proposed that the constructed wetland is to be installed

The constructed wetland will be installed by Q4 2012

14. Provide one map which displays;

- *The current location of SW1*
- *The location of the proposed discharge SW1 from the constructed wetland ;and*
- *The drain on the southern boundary of the facility and its connectivity to the unnamed third order stream, The Roughrange (Main channel) River and the Boyne River.*

The map is in Attachment G.

15. Complete and submit screening for appropriate Assessment in accordance with the European Communities(Birds and Natural Habitats) Regulations 2011 (S.I.No.477of 2011)

- *Ensure screening demonstrates whether the project is or is not likely, whether individually or in combination with other plans or projects, to have significant effects on any European site or sites as defined in regulation 2(1) of the habitats regulations (S.I.No 477 of 2011) having regard to best scientific knowledge and its conservation objectives*

i where based on the Stage 1 screening, it is considered that an appropriate assessment is not required, a reasoned response should be provided.

ii where screening has determined that an appropriate assessment is required, an appropriate assessment in accordance with article 6(3) of the Habitats Directive (92/43/EEC) should be completed and a copy of the natura impact statement submitted as part of the application. The assessment should consider the following on any European site(s).

- a) the impact of the existing facility on any European site(s)*
- b) the cumulative effects of the project combined with other plans or projects that might impact on the European sites*
- c) an assessment of the implications of the project for the European site in view of the Europeans site conservation objectives*
- d) the objectives of proposed remediation measures with regard to existing impacts identified in item (a)*
- e) the impact on the European site of any physical works carried out at the facility during construction activities*
- f) Details of any mitigation measures proposed at or in relation to the European site, including timeframes for the implementation and monitoring of the measures; and*
- g) Natura impact statement conclusion statement, the statement should conclude*

whether the project will or will not adversely effect the integrity of the European site(s) having regard to its conservation objectives.

A Stage 1 Screening Exercise has been completed and is presented in Attachment H. The exercise concluded that the proposed changes to the site activities will not have any significant effects on a Natura 2000 site and therefore an Appropriate Assessment is not required.

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3. NON TECHNICAL SUMMARY

Introduction

Nurendale Ltd., trading as Panda Waste Services (PANDA) is applying to the Environmental Protection Agency (Agency) for a review of the current Waste Licence (Reg. No. W0140-03) for its waste processing facility at Beuparc, Navan, County Meath. The objectives of the review are: -

- To extend the licence area to include a new building (Building 4), which will house a biological treatment system. The system, which is a combination of anaerobic digestion and composting, will treat organic waste to produce compost. Gases produced during the digestion stage will be used as a fuel to generate electricity and heat, which will be used at the facility and sold to electricity supply companies;
- To allow the processing of household and commercial waste to recover materials, for example paper and plastic, that can be used as a fuel, for example in cement manufacturing. These materials are called Refuse Derived Fuel (RDF);
- To amend Condition 1.5.3 of the current licence to allow the continuous operation of the biological treatment and RDF manufacturing systems;
- To amend Condition 8.6 to allow the continued operation of the construction and demolition waste processing plant in a dedicated open area.

Nature of the Facility

The facility only accepts non-hazardous wastes, which are processed to recover wastes that are suitable for recycling and to reduce the amount sent to landfill. At present there are two main buildings (Building 1 and Building 2) used for waste processing. A third building, Building 3, will accommodate the RDF system. It is proposed to construct a new building, Building 4, to accommodate the biological treatment system.

Classes of Activity

It is not proposed to change the type of waste activities, as defined in Third and Fourth Schedules of the Waste Management Acts 1996 – 2008, that are carried out. These are:-

Third Schedule – Waste Disposal Activities

Class 12

“Repackaging prior to submission to any activity referred to in the preceding paragraph of this Schedule”.

Class 11

“Blending or mixture 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 processes)”.

Class 3

“Recycling or reclamation of metals and metal compounds”.

Class 4

“Recycling or reclamation of other inorganic materials”. (p)

Class 11

“Use of waste obtained from 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”.

Quantity and Nature of the Waste to be Recovered or Disposed

There will be no change to the types and quantities of waste that are authorised by the current Licence. These are shown in Table 6.1.

Table 3.1 Waste Types and Quantities

WASTE TYPE	MAXIMUM (TONNES PER ANNUM) ^(Note 1)
Household waste	35,000
Commercial & Industrial	75,000
Construction and Demolition	120,000
Compostable	20,000
TOTAL	250,000

Note 1: The quantities of the different categories referred to in this table may be amended with the agreement of the Agency provided that the total quantity of waste specified is not exceeded.

Raw and Ancillary Materials, Substances, Preparations used on the Site

Diesel, lubricating oil and hydraulic oil are used in the waste processing equipment. Electricity is used to power some of the processing equipment and also in the offices and yard lighting. Drinking water is taken from the County Council mains. Groundwater from an on-site well, which is stored in a tank, is used to damp down the yards during dry weather so as to prevent dust.

Plant, Methods, Processes and Operating Procedures

The biological treatment system includes a series of fully enclosed tanks, called digesters, in which the wastes will be initially treated. At the start of the process, the oxygen in the air in the digesters will be used up by the microbes in the waste to produce anaerobic (no oxygen) conditions.

The microbes will break down the waste and, in the process, produce a biogas, which can be used as a fuel to generate electricity. The biogas will be cleaned (scrubbed) to remove contamination and fed into two gas powered electricity generators. The electricity from the generators will be supplied to the national electricity grid. A stand-by gas flare will be provided and will be used to burn the gas when the generators are being serviced.

The digesters will reduce the amount of organic material in the wastes. The waste will then be moved to the composting area, where the wastes will be composted in fully enclosed containers called tunnels. Air will be supplied to the tunnels to ensure that oxygen levels are kept at the level needed to complete the composting.

When the composting process is complete, the material will be pasteurised at a high temperature to ensure that all the microbes have been killed. This stage is required to meet the conditions set by the Department of Agriculture Fisheries and Marine for the treatment of wastes containing meat and fish.

Unprocessed household and commercial wastes contain water, in some cases up to 40% by weight, which affects the quality of the materials for use as fuel. The most favourable moisture content is around 15%, and therefore it is necessary to dry the wastes. It is proposed to dry the processed wastes in an air dryer in Building 3. The wastes will be placed inside a drying drum and the drum heated using a biomass fired furnace.

Information Related to paragraphs (a) to (g) of Section 40 (4) of the Waste Management Acts 1996 2003.

The actual and potential emissions associated with the new waste activities include noise, dust, odour, trade effluent and rainwater run-off will not breach any applicable legal standard or emission limit. Trade effluent, which includes water from washing down the floors of the buildings, is collected and stored in a tank before being taken to Meath County Council's Navan Sewage Treatment Plant.

The proposed site activities take into consideration the Best Available Technique (BAT) Guidance Note for the Waste Sector: Waste Transfer Activities published by the Agency and when carried out in accordance with the new Licence conditions, will not cause environmental pollution. It is not proposed to amend the current Management Team.

On 15th September 2009 Nurendale Ltd. was convicted at Navan District Court of an offence under the Waste Management Act for a breach of its previous Licence (W0140-02) relating to taking in more waste than approved under the licence. The current Licence (W0140-03), which was granted in March 2009, allows the acceptance of 250,000 tonnes per annum.

Emissions

Surface Water

Rainwater run-off from the existing concrete yards is collected in an underground tank and stored before being sent off-site for treatment. PANDA already has approval to change the drainage system to channel the water to a new reed bed, which will be installed in 2012. Rainwater from the roof of Building 4 will be collected in a tank and used at the site for spraying the yards to keep dust down. This tank is topped up with rainwater run-off collected in an underground storage tank. Rainfall on the new concrete yards will be collected and passed through an oil interceptor and into a soakaway.

Sanitary Wastewater

Sanitary and canteen wastewater is collected and treated in an on-site sewerage treatment plant. The treated wastewater goes to a percolation area. There will be no new sources of sanitary wastewater and the treatment plant has the capacity to cope with the estimated 15 new people that will work in Buildings 3 and 4.

Process Wastewater

Floor washings from Buildings 1 and 2 and water from the truck wash is collected in an underground tank and sent to the Council's Navan treatment plant. Additional wastewater will be produced in the biological treatment process. This will be reused in the process, but any surplus will be sent to the Navan treatment plant.

Groundwater

The only emissions to ground are the treated sanitary wastewater from the on-site treatment plant and rainwater run-off from the new concrete yards. The rainwater will pass through silt traps and an oil interceptor before it enters the soakaway.

Dust

The main source dust emissions with the potential to cause a nuisance are vehicle movements over the concrete yards in dry weather and the Construction and Demolition Waste processing area. The new waste activities are also sources of dust, but these will be carried out inside the buildings, which will effectively prevent dust causing a nuisance.

Odours

A number of the different household and commercial wastes processed at the facility contain materials (for example foodstuff) that are a source of strong odours. The biological treatment and the manufacture of RDF are also sources of malodours. All odorous wastes are handled inside the buildings and are not processed or stored in open areas.

The existing composting tunnels are provided with an odour control system, which draws air from the tunnels into what is called a biofilter, where the substances that form the odours are removed. Building 3 and Building 4 will be provided with separate odour management systems designed to ensure that odours from the buildings will not be a cause of nuisance.

Air

The electricity generators, gas flare, the biomass furnace, carbon filter and biofilter will be will be new emissions sources. The emissions will consist of combustion gases from the biogas and biomass fuels and air treatment.

Noise

The noise sources include all waste processing, equipment operating inside the buildings and truck and car movements.

Assessment of the Effects of the Emissions

Surface Water

The proposed changes will not result in any new emissions from the site to adjoining or nearby streams. Rainfall on the concrete yards can become contaminated with silt and small quantities of oil that may leak from vehicle oil sumps. The rainwater run-off from the yards will pass through silt traps and interceptors, which will reduce the contamination to acceptable levels, before it enters either the new reed beds, or soakaway.

Sanitary Wastewater

The existing on-site sanitary wastewater treatment plant has the capacity to handle has the capacity to cope with the estimated 15 new people that will work in Buildings 3 and 4.

Process Wastewater

The biological treatment plant will produce a wastewater. This will be reused in the process and any surplus will be collected and sent to the Navan sewage treatment plant.

Groundwater

There are no direct emissions to groundwater. Treated sanitary wastewater goes to a percolation area. The treatment plant is operating satisfactorily and has the capacity to handle the expected additional staff. Rainwater from the concrete yards will pass through silt traps and an oil interceptor before entering the on-site soakaway or reed beds. This will minimise the risk of groundwater contamination.

Dust

There are water mist sprays in Building 1 and 2 which effectively control dust emissions. The odour control systems that will be provided in Buildings 3 and 4 will also effectively control dust. The open yard areas are and will continue to be dampened down during dry weather. The dust monitoring carried out at the site has confirmed that current operations are not a source of dust nuisance.

Odours

The odour control system in Building 3 will involve the collection of air from inside the building and directing it to a carbon filter.

The control system in Building 4 will involve the collection of air inside the building and directing it to the biofilter. A computer model assessment of the odour impacts has confirmed that the emissions from Buildings 3 and 4 will not be a cause of odour nuisance.

Air

The emissions from the generators and the biomass furnace will comply with the conditions set in the Licence. A computer model assessment of the emissions has shown that they will not cause environmental pollution.

Noise

Noise monitoring at the facility has consistently shown noise emissions measured at the nearest noise sensitive locations below the emission limit specified in the existing licence.

Nuisances

Birds can be attracted to sites where there is available foodstuff. The wastes accepted at the site include some foodstuff. All wastes that have the potential to contain food stuff are and will be processed and stored inside the building. This has already been found to eliminate bird attraction.

Monitoring and Sampling Points

The construction on Building 4 means that one of the current noise monitoring and dust monitoring points along the eastern boundary will be lost. It is proposed to replace these with alternative monitoring points, which will be located further to the east.

Prevention and Recovery of Waste

The aim of the Licence Review is to increase PANDA's recycling rates and reduce the amounts of waste sent to landfill.

Off-site Treatment or Disposal of Solid or Liquid Wastes

The new waste activities will not result in any changes to the types or method of off-site disposal of solid and liquid wastes. The Refuse Derived Fuel will be sent to off-site facilities for use as a fuel and this is classified as a recovery activity. The materials from the composting tunnels in Building 1 may be sent off-site for further treatment

Emergency Procedures to Prevent Unexpected Emissions

PANDA has prepared an Emergency Response Procedure for the facility, which sets out the actions to be taken in an emergency.

Closure, Restoration and Aftercare of the Site

The proposed changes to the current Licence will not affect the measures for the closure, remediation and aftercare of the facility.

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