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V.A.T No. 97507781

Ms. Caroline Murphy,
Inspector,
Environmental Licensing Programme,
Office of Climate, Licensing and Resource Use,
Environmental Protection Agency,
PO Box 3000, Johnstown Castle Estate
Wexford.

6th March 2015

Reg No: W0284-01

Dear Ms. Murphy,

I refer to the following:

Notices in Accordance with Regulation 10(2)(b) of the Environmental Protection Agency (Industrial Emissions) (Licencing) Regulations 2013 – dated 8th January 2015 and 4th February 2014, requesting information under Regulation 9 of the Regulations..

The responses in order are as follows:

Letter of 8th January 2015.

1. Site Drawing:

Please find attached Drawing No 002/D – Site Layout Plan with the site boundary clearly labelled and delineating the site boundary in red.

2. BAT Analysis:

All relevant decisions on BAT Conclusions, BAT reference documents and BAT guidance documents together with the conclusions and whether they are or will be put in place are described in detail in the attached BAT Conclusion reports.

- Environmental Impact Assessment/EIS
- Environmental Monitoring and Sampling
- Waste Management
- Environmental Reporting
- Ecology
- Project Management
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The BREFs are a series of reference documents covering, as far as is practicable, the industrial activities listed in Annex 1 to the EU's IPPC Directive. They provide descriptions of a range of industrial processes and for example, their respective operating conditions and emission rates. Member States are required to take these documents into account when determining best available techniques generally or in specific cases under the Directive.

The following documents were reviewed in the context of this application and those deemed relevant were taken into account in the BAT Conclusions presented later in this Attachment.

- 1) Ceramic Manufacturing Industry
- 2) Common Waste Water and Waste Gas Treatment/ Management Systems in the Chemical Sector
- 3) Emissions from Storage
- 4) Energy Efficiency
- 5) Ferrous Metals Processing Industry
- 6) Food, Drink and Metals Processing Industry
- 7) Industrial Cooling Systems
- 8) Intensive Rearing of Poultry and Pigs
- 9) Iron and Steel Production
- 10) Large Combustion Plants
- 11) Large Volume Inorganic Chemicals – Ammonia, Acids and Fertilisers
- 12) Large Volume Inorganic Chemicals – Solids and Others Industry
- 13) Management of Tailings and Waste-rock in Mining Activities
- 14) Manufacture of Glass
- 15) Manufacture of Organic Fine Chemicals
- 16) Non-ferrous Metals Industries
- 17) Production of Cement, Lime and Magnesium Oxide
- 18) Production of Chlor-alkali
- 19) Production of Polymers
- 20) Production of Pulp, Paper and Board
- 21) Production of Speciality Inorganic Chemicals
- 22) Refining of Mineral Oil and Gas
- 23) Slaughterhouses and Animals By-products Industries
- 24) Smitheries and Foundries Industry

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- 25) Surface Treatment of Metals and Plastics
- 26) Surface Treatment Using Organic Solvents
- 27) Tanning of Hides and Skins
- 28) Textiles Industry
- 29) Waste Incineration
- 30) Waste Treatment
- 31) Wood-based Panels Production
- 32) Wood and Wood Products Preservation with Chemicals
- 33) Economics and Cross-media Effects
- 34) Monitoring of emissions from IED-installation

List of BAT on EPA website (<http://www.epa.ie/pubs/advice/bat/#.VLz9GCxfBEg>)

- 1) BAT Guidance Note for Ferrous Metal Processing - Aug 2012
- 2) BAT Guidance Note for Ferrous Metal Foundries - Aug 2012
- 3) BAT Guidance Note - Waste Sector (Landfill) - Dec 2011
- 4) BAT Guidance Note - Waste Sector (Transfer & Materials Recovery) - Dec 2011
- 5) BAT Guidance Note for the Manufacture of Integrated Circuits
- 6) BAT Guidance Note for the Initial Melting and Production of Iron & Steel Sector
- 7) BAT Guidance Note for the Production of Paper Pulp, Paper & Board
- 8) BAT Guidance Note for Brewing, Malting & Distilling Sector
- 9) BAT Guidance Note for Disposal or Recycling of Animal Carcasses & Animal Waste Sector
- 10) BAT Guidance Note for the Animal Slaughtering Sector
- 11) BAT Guidance Note for the Cement & Lime Sector
- 12) BAT Guidance Note for the Ceramic & Diamond Sector
- 13) BAT Guidance Note for the Dairy Sector
- 14) BAT Guidance Note for the Energy (LCP) Sector
- 15) BAT Guidance Note for the Fish Meal & Fish Oil Sector
- 16) BAT Guidance Note for the General Inorganic & Alumina Sector
- 17) BAT Guidance Note for the Glass Sector including Glass Fibre
- 18) BAT Guidance Note for the Metals & Plastics Sector
- 19) BAT Guidance Note for the Non Ferrous Metals & Galvanising Sector
- 20) BAT Guidance Note for the Oil & Gas Refining Sector

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- 21) BAT Guidance Note for the Organic Chemical Sector
- 22) BAT Guidance Note for the Textiles Processing Sector
- 23) BAT Guidance Note for the Use of Solvents
- 24) BAT Guidance Note for the Vegetable & Animal Raw Materials Sector
- 25) BAT Guidance Note Pesticides, Pharmaceuticals & Speciality Organic Chemicals Sector
- 26) BATNEEC Guidance Note - Board Manufacturing Sector - 1996
- 27) BATNEEC Guidance Note - Electroplating Operations - Oct 1996
- 28) BATNEEC Guidance Note - Extraction of Minerals - Nov 1997
- 29) BATNEEC Guidance Note - Manufacture of Sugar - Sept 1996
- 30) BATNEEC Guidance Note - Manufacture of Synthetic Fibres - Nov 1997
- 31) Draft BATNEEC Guidance Note - Manufacture or Use of Coating Materials - Nov
- 32) BATNEEC Guidance Note - Pig Production Sector - Feb 1998
- 33) BATNEEC Guidance Note - Poultry Production Sector - Feb 1998
- 34) BATNEEC Guidance Note - Waste Sector (IPPC) - May 1996
- 35) BATNEEC Guidance Note - Wood Treatment and Preservation - Nov 1997
- 36) Draft BATNEEC Guidance Note - Asbestos Sector - 03/06/96
- 37) Draft BATNEEC Guidance Note - Crude Petroleum Handling & Storage
- 38) Draft BATNEEC Guidance Note - Fellmongering & Tanning - 02/04/96
- 39) Draft BATNEEC Guidance Note - Forges - 15/05/96
- 40) Draft BATNEEC Guidance Note - Manufacture of Vegetable & Animal Oils and Fats - 05/06/96
- 41) Draft BATNEEC Guidance Note - Roasting, Sintering or Calcining - 15/05/96
- 42) Draft BATNEEC Note - Glass Production - 37/06/96
- 43) Draft BATNEEC Guidance Note - Extraction of Peat - 14/05/96

The following BAT Reference (BREFs) documents were deemed relevant to the O'Toole Composting Ltd facility and were taken into account in assessing compliance:

Reference Document on Best Available Techniques on Emissions from Storage, 2006

Reference Document on Best Available Techniques for Energy Efficiency, 2009

Reference Document on Best Available Techniques for the Waste Treatment Industries, 2006

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Reference Document for the Waste Sector, entitled 'Waste Transfer and Materials Recovery' 2011.

Reference Document on the General Principles of Monitoring of emissions from IED-installations 2003

In addition the following BAT Guidance Notes (Currently in draft form) were considered:

Draft BAT Conclusions Indoor Composting, European Composting Network

None of the other BAT documents listed above were deemed appropriate to this facility.

BAT Conclusions for 'Waste Transfer and Materials Recovery' in respect of O'Toole Composting Ltd are attached to this response as they were not previously supplied.

3. Measures proposed to be taken to minimise pollution over long distances:

Due to the nature and extent of the facility it is not considered likely that it could cause pollution over long distances or in the territories of other states.

The most likely source of pollution from a composting facility is that of odour. The O'Toole Composting facility has sufficient control measures in place (bio-filter) or proposed (airlock and upgrade to bio-filter) that odour will be controlled. An odour dispersion model supplied with the EIS supports this. It is not considered that any odour or other air quality issues arising from the O'Toole Composting Ltd facility will cause pollution over long distances.

Another potential source of pollution over long distances is contamination of surface water/rivers. The surface water and indeed contaminated water handling systems currently in place and proposed (interceptor) will ensure that this will not happen. Monitoring of the surface water at SW1 and SW2 supports this. This is addressed in detail in the EIS.

The risk of pollution over long distances by use of contaminated product also exists. O'Toole Composting Ltd. have very strict quality control systems in place to ensure that the quality of each batch of material sent offsite meets the requirements of their customer. All incoming material is profiled and all operations on site are strictly controlled by the Department of Agriculture under the Animal By-Products Regulations. Therefore the risk of contaminated products arising at the O'Toole Composting Ltd facility is eliminated.

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As regards the risk of causing pollution in the territories of other states, O'Toole Composting Ltd. does not directly export any material to other states. Should they propose to do so in the future they will engage with the National TFS Office and carry out all export under these (TFS) Regulations. Export of material by O'Toole Composting Ltd. is not considered likely in the immediate future. All of the material that O'Toole Composting sends to other facilities, which may in turn be exported adheres to that facility's acceptance criteria and OTCL only sends material to licenced or permitted facilities.

It is therefore considered that these measures will ensure that there is no risk of pollution over long distances or in other states from the OTCL facility.

4. Baseline Report.

Following discussions with the Agency it has been agreed that the baseline status for the O'Toole Composting facility is that of a green field site with previous agricultural use and no soil or groundwater contamination.

Letter of 4th February 2015.

1. Drawing number 002/D entitled Site Layout Showing Storage is attached. Please note that WEEE from the bring centre is stored in the 'Skip Shed'. In addition to this MSW from the bring centre is tipped in the Skip Shed on a daily basis or sooner if the compactor is full. This also applies to Mixed Dry Recyclables. Other material from the bring centre is stored in-situ in special purpose receptacles provided by the specialist contractors. These would include glass in glass banks, textiles, lamps in lamp coffins, and large WEEE. These will be collected by a specialist collector on a milk round or on a just in time basis.

2. The maximum amount of waste that will be stored in each designated area and in the installation as a whole is detailed on the above referenced drawing and is detailed below.

The composting process is a three stage process which requires two periods of approximately 7 days each in the composting tunnels followed by a long maturation period of

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approximately four weeks. . At the O'Toole Composting Ltd. all of these processes take place indoors and the figures presented are the maximum capacity figures. These are:

- Infeed material awaiting sufficient material to start a batch will be up to 300 tonnes for approximately 4 days – stored in the intake building.
- A stockpile of bulking material comprising of a mixture of shredded timber and green waste is maintained in the intake building. This is mixed with the incoming material to assist in the aeration process. Up to 60 tonnes of this material is stored on site at any one time.
- Each composting tunnel has the capacity for 400 tonnes of infeed material and these will be full at all times when operating to capacity.
- The maturation process will take up to 4 weeks to complete and with approximately 500 tonnes per week (800 input with 35% water loss) this will require capacity of 2000 tonnes in the maturation shed.
- Addition storage of 1000 tonnes is provided in the maturation shed to allow for screening. Therefore the maximum tonnage of compost or compost like output (stabilised fines) that may be stored in the Maturation Shed will be 3000 tonnes.

The maximum amount of non-composting related waste that may be stored on site is as follows:

- Skip waste (pre-processing) 20 tonnes.
- Bulky waste 20 tonnes
- Mixed Dry Recycling 40 tonnes.
- Municipal Solid Waste (for transfer) 50 tonnes.
- Tyres 10 tonnes.
- Construction and Demolition rubble 30 tonnes.
- Timber 15 tonnes.
- Green garden waste 15 tonnes.
- WEEE 2 tonnes.
- Textiles (CA Site) less than 1 tonne.
- Glass (CA Site) 3 tonnes – 1 tonne for each colour.
- Miscellaneous CA material e.g lamps, aluminium etc– 1 tonne or less.

- | | |
|---|--|
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These figures are calculated on the basis of bulking up a load and a contingency factor.

3. The maximum length of time that each waste type will be stored in each designated storage area is detailed on Drawing No. 002/D entitled Site Layout Showing Storage.

4. There is no baling activity at the installation.

Please find also attached a revised Non-Technical Summary.

Yours sincerely,

A handwritten signature in blue ink, appearing to read "Jim Dowdall", is written over a dashed horizontal line.

Jim Dowdall

Enviroguide Consulting (on behalf of O'Toole Composting Ltd.)

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Non-technical Summary (Amended March 2015)

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Attachments in this Section include:

A.1 Non-technical Summary (amended 6th March 2015 to include additional information provided to the EPA in compliance with Environmental Protection Agency (Industrial Emissions) (Licensing) Regulations 2013 S.I. No. 137 of 2013.

Introduction

A non-technical summary has been prepared in accordance with Article 9.2 (w) of the Environmental Protection Agency (Industrial Emissions) (Licensing) Regulations 2013 S.I. No. 137 of 2013

An application for an Industrial Emissions Licence is currently under consideration by the Environmental Protection Agency (EPA). The application is being made by

O'Toole Composting Limited,
Ballintrane,
Fenagh,
Co. Carlow.

Telephone: (059) 9148984
Fax: (059) 9148989

All correspondence relating to this application should be sent to:

Mr. Jim Dowdall
Enviroguide Consulting
93 Upper Georges Street
Dun Laoghaire
Co. Dublin

Telephone: (01) 2711896
Fax: (01) 2711897

The registered office of O'Toole Composting Limited is Rathbawn, Tullow, Co. Carlow.

O'Toole Composting Limited is in the Planning Authority functional area of:

Carlow County Council
County Buildings
Athy Road
Carlow Town
Co. Carlow

There is no discharge of trade effluent or other matter to sewer from the facility. The sanitary authority area in which this facility is located is the HSE South, Carlow Community Care, Athy Road, Carlow Town, Co. Carlow.

The facility is located in the townland of Ballintrane in Fenagh, Co. Carlow. The National Grid reference for the facility to which this application relates is S 7886 6762.

The site which is 4.87 hectares in area is located in a rural area where the predominant land use is for agriculture. The closest dwelling located 170 meters south of the facility.

The site itself is well serviced with road networks as can be seen in Figures 1 and 2 below. The site is located directly off the N80 Carlow/Rosslare Road, approximately 6km south east of the M9 Dublin/Waterford Motorway. The main entrance of the facility is located at the north west corner of the site, just off a local access road Jocks Lane, which runs perpendicular to the main N80 roadway. Sufficient sightlines are at either side of the access lane for safe access and egress to the facility.

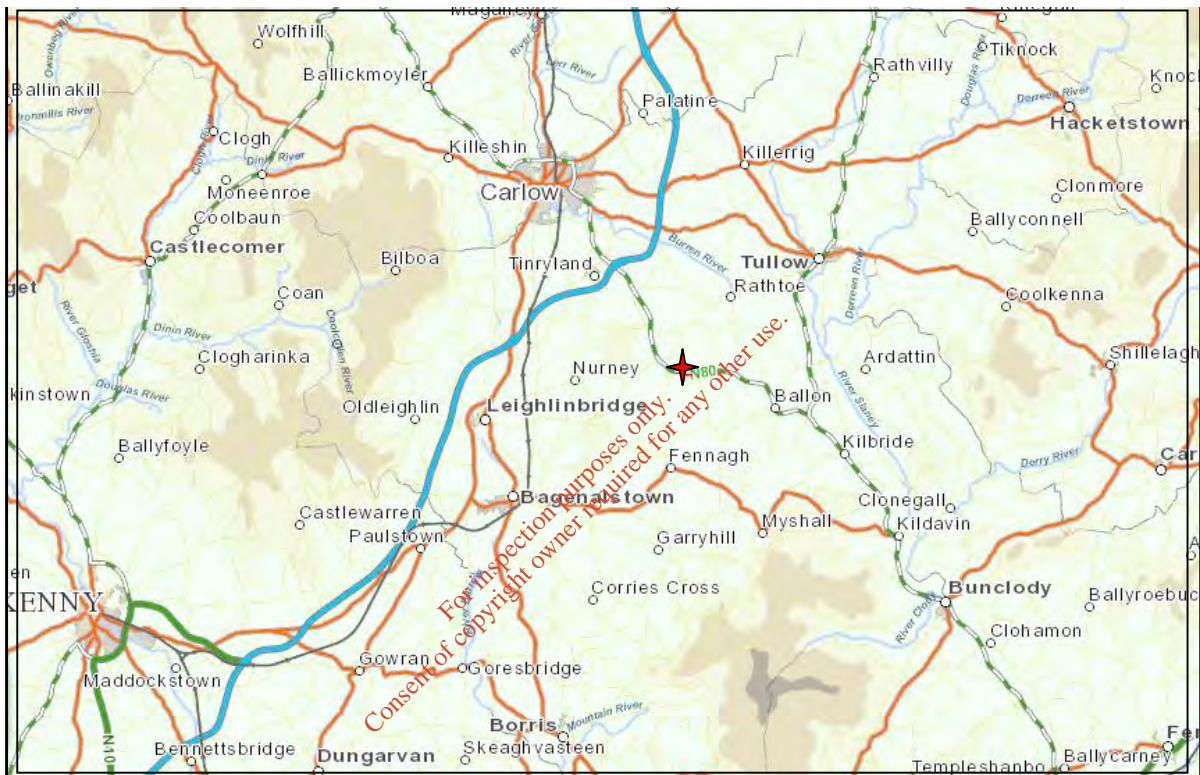


Figure 1: Detailed Site Location Map

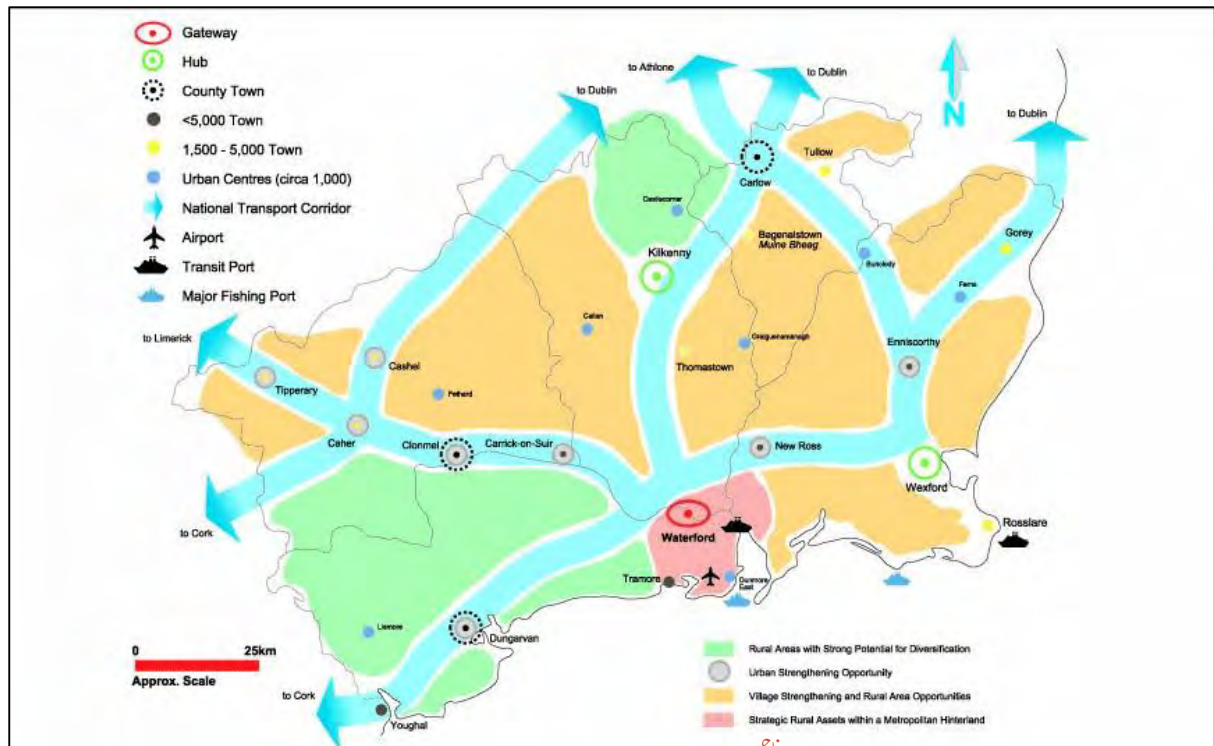


Figure 2: South East Region Transport Corridor

As can be seen from Figure 2, O'Toole Composting is in a central location off the national transport corridor, Carlow being a county town which links the gateways of Waterford and Dublin and the hub towns of Kilkenny and Wexford.

This facility currently operates a waste transfer and composting facility with a permitted annual intake of up to 25,000 tonnes. O'Toole Composting Limited are now proposing to expand the current operations at the facility.

The development will see an increased intake of organic waste (brown bin or mechanically separated organics) for composting and or municipal solid waste for drying and stabilisation, with a proposed maximum annual intake of 40,000 tonnes. As the remainder of this (MSW) material is transported offsite for further recovery this is regarded as an MBT process. From an MSW of 100% there will be a moisture loss of 43%, Compost Like Output (CLO) of 22% and Dried waste of 35%. This will be further recovered to SRF (Solid Recovered Fuel) 21%, Metal 2%, Plastics 4%, with a residue of 8% for disposal. The preferred inputs are brown bin material (source separated) followed by mechanically separated organics (fines) with MSW as the least favoured option. The activity will be driven by availability of input material and market conditions.

This increase in tonnage will see the composting infrastructure that is currently in place at the facility being used to its maximum capacity.

It is also proposed to construct a civic amenity facility which can be used by members of the public for their waste and recycling. It is also proposed to increase the tonnage of waste accepted in the current waste transfer building up to a maximum tonnage of 20,000 tonnes per annum. Waste material will be bulked up in this building prior to it being transferred offsite to a waste processing or landfill facility. In addition a processing plant will be installed in this building to maximise recycling and recovery of this type of material. This plant will utilise screening, shredding, magnets and a wind - shifter. A proposal to include an Anaerobic Digester as part of this development will not now proceed.

The following information is contained in the application in compliance with the Environmental Protection Agency (Industrial Emissions) (Licensing) Regulations 2013 S.I. No. 137 of 2013

(b) The number of employees during normal levels of operation is 14.

(c) The relevant classes in the First Schedule to the Act of 1992 to which the industrial emissions directive activity relate are:

11.1 'The recovery or disposal of waste in a facility within the meaning of the Act of 1996 which facility is connected or associated with another activity specified in this Schedule in respect of which a licence or revised licence under Part IV is in force or in respect of which a licence under the said Part is or will be required.' And 11.4(b)'Recovery, or a mix of recovery and disposal of non-hazardous waste with a capacity exceeding 75 tonnes per day involving one or more of the following activities. (other than activities to which the Urban Waste Water Treatment Regulations (S.I. No. 254 of 2001) apply).'

(i) biological treatment.

(ii) pre-treatment for incineration or co-incineration

(d) Details of application for planning permission and an Environmental Impact Statement are attached in support of this application. Planning permission has now been granted and a Final Grant Notification is expected shortly.

(f) Details of fuels and raw materials utilised by the facility are supplied as part of the application. Raw materials used at this facility include water, electricity and fuel such as diesel and gasoil. Other substances used at the facility are for the operation of machinery such as engine oil, transmission fluid, Ad Blue, antifreeze and lubricants.

(g) The plant, methods, processes ancillary processes, abatement, recovery and treatment systems and operating procedures for the activity are detailed in the original application in Attachments C and D which detail the management systems infrastructure (including details of all plant and machinery) and operation respectively. These are further described in Section 1.3 and 1.4 of the EIS.

Infrastructure, plant and equipment are currently in place for the existing operations at the facility. Apart from the development of a new civic amenity facility and the installation of two new bio-filters and an airlock there will be no changes to the current infrastructure on-site. On-site processes include the acceptance, storage, composting/drying of municipal solid waste and transfer offsite of wastes. Future on-site processes may include mechanical biological treatment. Approval will be sought from the EPA for any proposed new waste processing activity prior to it being commenced at the facility. Treated waste is not baled at the installation. A detailed site drawing showing all proposed storage locations with the proposed quantities and timeframes has been submitted as Drawing No 002/D entitled Site Layout Showing Storage.

All waste vehicles entering the facility are weighed before they enter the site. The vehicle registration, waste type, source of waste and gross weight are all recorded at this point. The vehicle is directed by the weighbridge operative to the appropriate tipping area for that particular waste type. Once waste has been tipped it is inspected by a trained staff member to ensure that the waste type is acceptable. If the waste is found to be unacceptable or contaminated it is rejected from the facility. If the material is accepted the driver is directed back onto the weighbridge where the empty weight will be taken to generate the nett weight for the load. Records of all wastes accepted or rejected from the facility will be maintained on-site at all times.

Mixed waste including skip waste, domestic and commercial waste will be directed to the waste transfer station. Skips or collection vehicles will be emptied on the floor area of the building that has been designated as the waste inspection area. All materials in the skip will be inspected once tipped and if the waste is acceptable it will be moved into the temporary storage bay prior to it being transferred offsite to a waste processing facility. Any unacceptable wastes or wastes that are considered hazardous material such as light bulbs, paint cans, waste electrical goods, batteries will be separated from the waste and stored in assigned bunded containers in the designated quarantine area until they are collected by an approved contractor.

The Facility Manager will organise vehicles for the transportation of the mixed waste offsite. The mixed waste will be loaded into articulated trailers by the on-site teleporter. The waste will be sent to an approved waste processing facility for further processing, recovery, recycling or disposal. No wastes will be kept on-site long term and there will be no disposal of waste at the facility.

Segregated wood waste will be directed to the wood storage bay by the waste transfer station. All untreated wood such as timber pallets will be temporarily stored in the wood bay. Untreated wood will be shredded on-site. The wood chip that is produced is then used in the composting process. Any treated wood (e.g. wood that has been varnished), will be treated as mixed waste and send off-site for further processing.

Civic amenity facilities for use by members of the public are limited at present. It is proposed to design and expand a new area to be used as a civic amenity facility for members of the public. This area will consist of skips, containers and compactors for the acceptance of various waste household streams such as cardboard, dry recyclables, plastics, waste electrical goods, glass, wood, textile, rubble, batteries, tyres, municipal waste and food waste. All vehicles wishing to access the civic amenity facility will be directed to the entrance by the weighbridge operative. The containers in the civic amenity site will be emptied as necessary at the end of each working day.

Biodegradable waste for composting which will comprise either brown bin source segregated waste or mechanically separated organics or MSW for drying/stabilisation will be directed to the composting shed. If the biodegradable waste is accepted it is moved into the delivery bay area. This waste is shredded and then loaded into one of the composting tunnels. After 7 to 10 days the material is removed from this composting tunnel and placed into a second composting tunnel where it is left for a further 7 to 10 days. Each of the composting tunnels are controlled by a specially designed computerised system. This computerised system can control and monitor the temperature and moisture levels to ensure that the correct conditions are maintained within the tunnels to ensure that the composting process is carried out appropriately. A specifically designed floor piping system has been installed in the composting tunnels known as an aeration floor. Air can be introduced to the tunnels via this piping system. The same process is used for each potential infeed material type and it is only proposed to accept one waste stream at any given time.

Air is circulated throughout the organic material and is extracted from the tunnels via the overhead duct work. The introduction of air to the material during composting is known as an aeration process.

Once aeration has taken place in the tunnels, material from the tunnel will be discharged via the back door of the tunnel where the materials is screened. The large particles of waste, called oversize, are removed from this area and re-circulated to the waste intake area so that they can be mixed with fresh incoming waste and be further broken down by going back through the aeration process.

The undersize (particles that meet the size grade) is transferred to the maturation floor. The composted material is left on the maturation floor for five to seven weeks to cure. In the case of stabilised MSW the organic fines or 'compost like output' is screened and the remainder of the material sent for further processing into Solid Recovered Fuel (SRF)

(h) Details of best available techniques (BAT) conclusions in respect of the facility are detailed in a report submitted in support of the application. The best available technology has been installed at the facility. A full BAT analysis has been submitted as part of this application. A fully computerised GICOM composting system has been

installed in the composting building. All future investments will consider best available technique prior to purchase.

(i) Details of potential emissions are given in Attachment E of the original application and the potential impacts and proposed mitigation measures where appropriate are addressed in the EIS as follows:

Odour – EIS Section 3.4

Surface Water – EIS Section 3.2

Groundwater – EIS Section 3.2

Noise – EIS Section 3.6

(j) Proposals for control and monitoring are addressed in Appendix F of the original application.

At present monitoring is carried out at the facility in locations identified in Figure 3. It is proposed to continue environmental monitoring at each of these locations as part of this Licence application. It is not anticipated that any of the emission limit values will be exceeded due to the environmental management systems that are in place at the facility. In the event of any emission limit values being exceeded at any stage, the exceedence will be treated as an environmental incident. All environmental incidents will be investigated to determine the root cause of the incident. Retesting will be carried out as part of the incident investigation process. Once the root cause of the incident has been identified, appropriate corrective and preventative action measures will be put in place so as to limit or eliminate the environmental consequences of such an occurrence. Emission Limit Values have been proposed for SW1 and SW2 in line with the EPA's Interim Guideline Values.



Figure 3 On-Site Monitoring Locations

- ◆ Air Sensitive Receptors
- Dust Monitoring Locations
- PM10 Monitoring Locations
- Noise Monitoring Locations
- ▲ Surface Water Locations

(k) Details and an assessment of the impacts of any existing or proposed emissions on the environment as a whole, including on an environmental medium other than that or those into which the emissions are or are to be made, and details of the proposed measures to prevent or eliminate, or where that is not possible to limit, reduce or abate emissions are addressed in detail in the EIS Volume 2 Section 3.

The main potential emissions from the facility include dust, noise, litter, flies and odour. Control measures are currently in place at the facility to control the level of emissions and to reduce or eliminate emissions where possible. These control measures, which include daily site inspections, are to ensure that any emissions from the facility do not give rise to nuisances at any of the facility surrounds.

Dust generation is mainly from traffic movement to and from the facility during periods of prolonged dry weather and the tipping of dry wastes at the facility. It is proposed to concrete the remainder of the yard area of the facility over a phased basis which should reduce dust levels. In dry weather conditions the yard area will be dampened down with water to prevent dust becoming airborne. In addition to this vehicles

delivering and removing waste from the facility will be covered to prevent dust and litter escaping from trailers. All waste handling will occur within the facility buildings. A negative air odour extraction system is in place in the composting building and is proposed for the waste transfer building. This extraction system will also remove dust particles from the building.

The processing of waste will occur indoors which will limit the generation of noise, litter and flies in the surrounding area to the facility. Machinery will be well maintained to avoid any noise from friction or vibration. Noise monitoring will be conducted on an annual basis, or as required by conditions of the licence, to ensure that noise levels are not exceeding the recommended environmental limits. Litter should be limited at the facility as vehicles delivering or removing waste to or from the facility will be covered and any litter that occurs will be swept up once spotted or reported. Daily site inspections will be carried out to inspect for nuisances including dust, noise, litter, flies, mud or odours. If any nuisances are noted during the daily inspections corrective action will be taken.

An odour impact assessment model was carried out which predicts the potential impacts from odour if this facility were to expand as is proposed by this application. The odour models in this report predicts that there will be no impact from odour at any of the neighbouring properties to the facility.

As the facility is currently operational it is not considered that there will be any new emissions introduced as a result of the facility operations. Existing site practices will continue in relation to the environmental management of the facility to limit any potential increase in emissions. All wastes will be processed indoors. Due to the building design and infrastructure emissions from the facility will be limited and controlled.

(l) The need for the development and the main alternatives considered by the applicant are addressed in the EIS Volume 2 Section 1.2.1 and 1.2.2.

As the existing processes use Best Available Technology there is no further need to look at alternative processes.

(m) The condition of the site is described in detail in the application.

(n) As the original site was agricultural use the baseline for this site is a greenfield site with no contamination of ground or water and this has been agreed in consultation with the Agency.

(o) The Air Dispersion model is based on parameters that are stricter than standard conditions.

(p) As this processing facility will not give rise to pollution over long distances or in the territory of other states section p does not apply. This is further discussed in the submission of 6th March 2015.

(q) The measures to be taken under abnormal operating conditions, including start-up, shutdown, leaks, malfunctions, breakdowns and momentary stoppages are addressed in Attachment Q of the original application. In addition Fire Safety has been addressed in Section 3.3.6 of the EIS. An accident prevention policy and an emergency response procedure is in place at the facility. These policies and procedures will ensure that necessary measures will be taken to prevent accidents and if an accident occurs it will limit the consequence of the accident for the environment. Fire water tanks have been installed at the facility which will acts as a fire fighting water source in the event of a fire. At present there are six 5,000 gallon tanks on-site.

(r) There are no short or medium term proposals to close the facility or to cease operations at the facility. In the unlikely event that activities cease at the facility, the facility will be closed so that no environmental liabilities remain at the facility. All wastes will be removed from the facility and transferred to an approved waste facility. Buildings, plant and machinery will be washed down, disinfected or drained of any fuels as necessary. O'Toole Composting Limited will have financial resources available to ensure that the facility can be rendered free from environmental liability if activities cease at the facility. A fully costed CRAMP and ELRA has been supplied to the Agency.

(s) Arrangements for prevention of waste in accordance with Part III of the Act of 1996 is not applicable to this facility. The activities of the facility contribute to national waste management policy and in particular the implementation of the Landfill Directive (1999/31/EC) which requires member states to engage in the progressive diversion of biodegradable municipal waste from landfill. This is addressed in detail in Section 1.6 of the EIS Volume 2 Section 1. The composting activity carried out on site (as indeed are the other activities) is in the third tier of the Waste Hierarchy namely recycling/composting.

All waste on-site will be handled and processed on-site in a manner that will not affect the recyclability of the materials. Recyclable waste will remain segregated from non-recyclable wastes at all times. Any residual waste at the facility that results from the processing of waste will be transferred offsite to an approved facility. A segregated bin system is implemented in the facility offices for the segregation of all recyclable wastes. Waste from the recycling processes such as waste oil or fuels will be stored in banded containers and collected from the facility by and approved contractor. No other wastes will be produced on-site. No wastes will be disposed of at the facility. All wastes temporarily stored at the facility will be transferred offsite to approved waste facilities for further processing, recovery, recycling, waste to energy or disposal. Waste

will only be transported by an approved haulier that holds a waste collection permit. Any excess liquid waste water runoff from the composting building will be tankered offsite to an approved waste water treatment plant.

(t) Non-hazardous domestic & commercial waste will be accepted at the facility for composting and waste transfer. The proposed quantities of wastes are as follows

Biodegradable material for Stabilisation/Composting: 40,000 tonnes per annum
Waste transfer (MSW, C&I and C&D wastes): 20,000 tonnes per annum

A full detailed description of all waste types including the European Waste Codes as presented by Commission Decision 2000/532/EC of 3 May 2000 11, are included in Attachment H.1 of this application. A request to remove a number of these waste types has been submitted to the Agency on 16th February 2015.

(u) The European Communities (Control of Major Accident Hazards Involving Dangerous Substances) Regulations 2000 (S.I. No. 476 of 2000) do not apply to the proposed activities at this facility.

(v) The bedrock in the underlying area of the facility is that of granite and other igneous intrusive rocks. Due to the nature of the proposed activity and the underlying bedrock it is considered that the activity will not give rise to an emission into an aquifer containing the List I and II substances specified in the Annex to Council Directive 80/68/EEC of 17 December 1979.

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The BAT (Best Available Techniques) Reference Document (BREF) for the Waste Sector, entitled 'Waste Transfer and Materials Recovery'.

Best available techniques for the Waste Sector: Waste Transfer and Materials Recovery		
	BAT Conclusion relevant to the installation	How the BAT requirements will be met at the O'Toole Composting Facility
Section	Generic BAT	
3.0	Sectors Covered By This Guidance Note	
3.0	<p>This Guidance Note covers the following waste transfer and materials recovery sectors:</p> <ul style="list-style-type: none"> • Inert; • Non-hazardous; • Hazardous; and • Clinical; and • Selected activities from the 3rd and 4th schedule in the Waste Management Acts 1996-2010 (Listed below) <p>3rd Schedule</p> <ol style="list-style-type: none"> 11. Blending or mixture prior to submission to any activity referred to in this Schedule. 12. Repackaging prior to submission to any activity referred to in this Schedule. 13. Storage prior to submission to any activity referred to in this Schedule, other than temporary storage, pending collection, on the premises where the waste concerned is produced. <p>4th Schedule</p> <ol style="list-style-type: none"> 2. Recycling or reclamation of organic substances which are not used as solvents (including composting and other biological transformation processes). 3. Recycling or reclamation of metals and metal compounds. 4. Recycling or reclamation of other inorganic materials. 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. 	

The BAT (Best Available Techniques) Reference Document (BREF) for the Waste Sector, entitled 'Waste Transfer and Materials Recovery'.

<p>5.0</p>	<p>Best Available Techniques For Waste Sector: Waste Transfer And Materials Recovery</p>	
<p>5.1 Primary Requirements</p>	<p>The key environmental issues for the waste transfer stations and materials recovery facilities sector are air emissions and soil contamination (BREF 2004). The following primary measures are considered BAT for the handling and recovery/disposal of waste at a transfer station/materials recovery facility:</p> <p>An EMS that incorporates the following features:</p> <ul style="list-style-type: none"> • Management and Reporting Structure. • Schedule of Environmental Objectives and Targets. • Annual Environmental Report (AER). • Environmental Management Programme (EMP). • Documentation System. • Corrective Action Procedures. • Awareness and Training Programme. • Communications Programme. • Waste acceptance procedure. • Waste management system for all incoming wastes and wastes on-site. • Appropriate storage and handling. • Wastewater management. • For hazardous waste transfer, the use of an extractive vent system linked to abatement equipment where applicable. • The provision of an impermeable surface across all areas of the facility where waste is handled and stored, with kerbing or sloping to protect any adjacent permeable areas. • The minimisation of underground tanks and pipe work. 	<p>An EMS incorporating all of the features detailed over is in place at the facility.</p>
<p>5.2 Emissions to Air</p>	<p>Dust/Fine Particulates (PM10, PM2.5) and Bio aerosols</p> <p>Dust emissions from waste handling and other operational activities have the potential to cause nuisance to site neighbours and could be a health hazard for site workers, neighbours and visitors.</p>	

The BAT (Best Available Techniques) Reference Document (BREF) for the Waste Sector, entitled 'Waste Transfer and Materials Recovery'.

	<p>Management Techniques</p> <p>At the EIS and design stage the operator will use the risk assessment process to identify particularly sensitive receptors in the event of dust generation. The same process will also identify high-risk areas that may give rise to dust generation, e.g., site roads, waste types.</p> <p>The operational procedures and the working plan should set out the design and operational considerations and requirements to minimise and control potential nuisance from dust, particulates and bio aerosols.</p> <p>Detailed procedures of the receipt and handling of hazardous dusty waste (including asbestos) should be drawn up and used when the facility will be permitted to accept such waste.</p> <p>The effectiveness of the design and operational provisions should be reviewed as part of the site monitoring; the annual environmental review report and the site's EMS procedures.</p> <p>Control Techniques</p> <ul style="list-style-type: none"> • High standard of construction, including enclosed waste handling and storage areas for waste with the potential to generate dust or particulate emissions, and cleanliness of site roads. • Pre-treatment of wastes, e.g., wetting, solidification, encapsulation. • Acceptance of bagged waste only. • Water sprinklers operated in relevant waste handling areas. • Regular sweeping of access roadways and areas of hard-standing and main transfer station area. • Transfer and loading of potentially dusty wastes within a building. • Use dust extraction system to remove dust and particulates from working areas/ buildings, where applicable. 	<p>This has been carried out as part of the EIS.</p> <p>This is in place at the facility.</p> <p>This is in place at the facility. Asbestos is not accepted at the facility.</p> <p>This will be reviewed on an ongoing basis.</p> <p>All buildings are of a high standard of construction and are fully enclosed. All waste storage is enclosed.</p> <p>This is in place.</p> <p>All waste is accepted in covered or enclosed loads.</p> <p>Regular sweeping is carried out at the facility.</p> <p>All transfer and loading is carried out indoors. The air handling system incorporates a dust filter.</p>
<p>5.2 Emissions to Air</p>	<p>Odour</p> <p>Odours may arise from the handling of waste which can cause nuisance to site neighbours.</p> <p>Management Techniques</p> <ul style="list-style-type: none"> • The location of the facility with regard to off-site receptors should be considered during the design stage. • At the design stage consideration should be given to the requirement for the capture, containment and treatment of odorous air. 	<p>The facility is located in a rural area close to a national road.</p> <p>This has been considered.</p>

The BAT (Best Available Techniques) Reference Document (BREF) for the Waste Sector, entitled 'Waste Transfer and Materials Recovery'.

	<ul style="list-style-type: none"> The operational procedures, having regard to the waste types being accepted and the waste processing activities at the facility, should seek to minimise the risk of odours. All biodegradable/putrescible wastes should be removed from the premises as soon as practicable and, in any case, within 48 hours of arrival or within 72 hours at public holiday weekends. Appropriate procedures should be developed for dealing with malodorous waste. Vehicles delivering and removing waste should be enclosed or covered. <p>Control Techniques</p> <ul style="list-style-type: none"> Restrict acceptance of wastes known to be malodorous. Any handling or treatment of malodorous waste should be carried out in an enclosed area suitable for the capture, containment and treatment of odours. Use of appropriate odour abatement equipment. Conduct regular inspections, monitoring and maintenance of waste handling areas and abatement equipment. Use of odour neutralizing sprays and additives to be considered where odours cannot be prevented. 	<p>Appropriate procedures are in place and are working effectively.</p> <p>This is in place</p> <p>This is in place.</p> <p>All of these control techniques are in place.</p>
<p>5.3 Emissions to Water</p>		
<p>5.3.1 Discharges to Surface Water</p>	<p>BAT is to ensure that:</p> <ul style="list-style-type: none"> Only uncontaminated water such as roof-water is appropriate for direct discharge to surface waters. Foul water is discharged to surface water following appropriate treatment only. Other surface water discharges must be passed through a silt trap and interceptor (i.s. en 858-2:2003 part 2). An up to date drainage survey and site drainage system map is retained on-site. 	<p>This is in place</p> <p>Foul water is not discharged to surface water</p> <p>This is proposed following grant of planning permission.</p> <p>This is in place</p>
<p>5.3.2 Discharges to Sewer by Tanker to Sewer</p>	<p>For discharges to foul sewer, BAT is to ensure that foul water/final effluent is treated adequately to meet the standards, as set by the Water Services Authority/EPA in relation to the water discharged to the waste water works. The Urban Wastewater Treatment Regulations, S.I. No. 214 of 1994, place specific conditions regarding emission limits from waste water treatment works. They also specify discharge quality conditions on the discharges to sewer to protect the sewer collection systems. The regulations prevent discharges of harmful substances that may be injurious to the health of sewer workers and to the sewer condition.</p>	<p>There is No discharge to foul sewer from the facility. Most leachate is re-used in the process and any excess is tinkered off site to a waste water treatment plant.</p>

The BAT (Best Available Techniques) Reference Document (BREF) for the Waste Sector, entitled 'Waste Transfer and Materials Recovery'.

<p>5.3.3 Discharges to Ground Water</p>	<p>BAT for discharges to groundwater is to:</p> <ul style="list-style-type: none"> Prohibit direct emissions to groundwater of effluents containing certain hazardous substances (List I), and to have strict controls to prevent indirect emissions of substances scheduled in List II of the Directive. Maintain an inventory of authorisations given for direct discharge of List II substances to groundwater. Remove risks of emissions to groundwater through appropriate controls such as containment, bunding, etc., Provide groundwater monitoring to enable early detection of any contamination of groundwater that may arise from the facility and the setting of its upper limits. 	<p>There are no discharges to groundwater from the facility.</p>																																	
<p>6.0</p>	<p>BAT Associated Emission Levels</p>																																		
<p>6.1</p>	<p>The following table sets out emission levels that are achievable using BAT for wastewater treatment. However establishing emission limit values within a licence for direct discharges to surface water from wastewater treatment plant and storm water discharges must ensure that the quality of the receiving water is not impaired or that the current Environmental Quality Standards (EQS) are not exceeded. Compliance with the Water Framework Directive (2000/60/EC) is required where relevant.</p> <table border="1" data-bbox="327 866 1350 1345"> <thead> <tr> <th>Constituent Group or Parameter Note 1</th> <th>Emission Levels</th> <th>Percentage Reduction Note 3</th> </tr> </thead> <tbody> <tr> <td>pH</td> <td>6 - 9</td> <td>—</td> </tr> <tr> <td>BOD5 (at 20°C without nitrification)</td> <td>25mg/l</td> <td>>90%</td> </tr> <tr> <td>Chemical Oxygen Demand (COD)</td> <td>125mg/l</td> <td>>75%</td> </tr> <tr> <td>Suspended Solids</td> <td>35mg/l</td> <td>>90%</td> </tr> <tr> <td>Total Ammonia (as N)</td> <td>10mg/l</td> <td>—</td> </tr> <tr> <td>Total Nitrogen (as N) Note 2 & 4</td> <td>15mg/l</td> <td>>80%</td> </tr> <tr> <td>Total Phosphorus (as P) Note 4</td> <td>2mg/l</td> <td>>80%</td> </tr> <tr> <td>Metals</td> <td>Note 5</td> <td>—</td> </tr> <tr> <td>Priority Substances (as per Water Framework Directive)</td> <td>Note 5</td> <td>—</td> </tr> <tr> <td>Other</td> <td>Note 5 & 6</td> <td>—</td> </tr> </tbody> </table>	Constituent Group or Parameter Note 1	Emission Levels	Percentage Reduction Note 3	pH	6 - 9	—	BOD5 (at 20°C without nitrification)	25mg/l	>90%	Chemical Oxygen Demand (COD)	125mg/l	>75%	Suspended Solids	35mg/l	>90%	Total Ammonia (as N)	10mg/l	—	Total Nitrogen (as N) Note 2 & 4	15mg/l	>80%	Total Phosphorus (as P) Note 4	2mg/l	>80%	Metals	Note 5	—	Priority Substances (as per Water Framework Directive)	Note 5	—	Other	Note 5 & 6	—	<p>The only emissions will be to surface water and will be set by the EPA. They will be compliant with BAT and the Water Framework Directive (2000/60/EC) where relevant.</p>
Constituent Group or Parameter Note 1	Emission Levels	Percentage Reduction Note 3																																	
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The BAT (Best Available Techniques) Reference Document (BREF) for the Waste Sector, entitled 'Waste Transfer and Materials Recovery'.

	<p>* All values refer to daily averages based on a 24-hour flow proportional composite sample, except where stated to the contrary and for pH, which refers to continuous values. Levels apply to effluent prior to dilution by uncontaminated streams, e.g., storm water, cooling water, etc.</p> <p>* Temperature measured downstream of a point of thermal discharge must not exceed the unaffected temperature by more than 1.5oC in salmonid waters and 3oC in cyprinid waters (Freshwater Fish Directive 79/659/EEC).</p> <p>Note 1: Trigger levels may be put on surface water discharge from settling ponds for parameters such as pH, TOC and conductivity in an EPA licence.</p> <p>Note 2: Total Nitrogen means the sum of Kjeldahl Nitrogen, Nitrate N and Nitrite N.</p> <p>Note 3: Reduction in relation to influent load.</p> <p>Note 4: Limits will depend on the sensitivity of the receiving waterbody.</p> <p>Note 5: BAT associated emissions levels are highly dependent on production process, wastewater matrix and treatment. These parameters shall be considered on a site-specific basis when setting emission limit values.</p> <p>Note 6: Any relevant polluting substances as specified in Schedule to S.I. No. 394 of 2004: EPA (Licensing) (Amendment) Regulations, 2004.</p>					
<p>6.2 Emission Levels For Discharges To Sewer</p>	<p>All discharges to sewer are subject to approval from the Water Services Authority. Compliance with the Water Framework Directive (2000/60/EC) is required where relevant.</p>	<p>Not applicable.</p>				
<p>6.3 Emission Levels For Discharges To Air</p>						
<p>6.3.1 Establishing Emission Limit Values</p>	<p>Establishing emission limit values within a license for discharges to air must ensure that the quality of the receiving environment is not impaired and that the current Air Quality Standards (AQS) are not exceeded. This will provide for the protection of health, vegetation and ecosystems.</p>	<p>This will be set by the EPA and will be compliant with BAT.</p>				
<p>6.3.2 Fugitive Air Emissions</p>	<p>Emissions to air from waste transfer stations and materials recovery facilities generally occur as <i>fugitive emissions</i> from vehicle and waste/materials movements on site.</p> <table border="1" data-bbox="324 1324 1344 1380"> <thead> <tr> <th data-bbox="324 1324 840 1356">Constituent Group or Parameter</th> <th data-bbox="840 1324 1344 1356">Concentration/Trigger Levels</th> </tr> </thead> <tbody> <tr> <td data-bbox="324 1356 840 1380">Total Dust Deposition</td> <td data-bbox="840 1356 1344 1380">240 - 350 mg/m2/day</td> </tr> </tbody> </table>	Constituent Group or Parameter	Concentration/Trigger Levels	Total Dust Deposition	240 - 350 mg/m2/day	<p>As above</p>
Constituent Group or Parameter	Concentration/Trigger Levels					
Total Dust Deposition	240 - 350 mg/m2/day					

The BAT (Best Available Techniques) Reference Document (BREF) for the Waste Sector, entitled 'Waste Transfer and Materials Recovery'.

<p>6.3.3 Odour Emissions</p>	<p>Activities at the installation shall be carried out in a manner such that emissions of odours do not result in significant impairment of, and/or significant interference with amenities or the environment beyond the installation boundary. For information on odour refer to the Environmental Protection Agency's publication <i>Odour impacts and odour emission control measures for intensive agriculture</i> (2001) and any other relevant guidance issued by the EPA.</p>	<p>As above</p>
<p>7.0</p>	<p>Compliance Monitoring</p>	
<p>7.2 Monitoring of Emissions To Air</p>	<ul style="list-style-type: none"> • Annual monitoring of boiler stack emission for parameters such as particulates, NOX, SO2, and CO, taking account of the nature, magnitude and variability of the emission and the reliability of the controls. • Monitoring of boiler combustion efficiency in accordance with the manufacturer's instructions at a frequency determined by the Agency. • Monitoring of air emissions from odour abatement as determined by the Agency. • Odour monitoring at boundary locations and/or nearest odour sensitive receptor locations at a frequency determined by the agency. • Periodic monitoring of other emissions as determined by the Agency. 	<p>Monitoring will be carried out in compliance with the requirements of the EPA licence.</p>
<p>7.3 Monitoring of Aqueous Emissions</p>	<p>Establish existing conditions prior to start-up, of key emission constituents, and salient flora and fauna.</p> <ul style="list-style-type: none"> • Dependant on the receiving water, monitoring of parameters as deemed necessary by the Agency (such as pH, flow volume, BOD, COD, metals, etc.), taking account of the nature, magnitude and variability of the emission and the reliability of the control techniques. 	<p>Not applicable</p>
<p>7.4 Monitoring of Emissions To Groundwater</p>	<ul style="list-style-type: none"> • There should be no direct process emissions to groundwater, including during the extraction and treatment of groundwater. • Periodic groundwater monitoring to determine the existing groundwater quality and to detect any contamination of groundwater that may arise from the facility where determined by the Agency. 	<p>Not applicable</p>

The BAT (Best Available Techniques) Reference Document (BREF) for the Waste Sector, entitled 'Waste Transfer and Materials Recovery'.

<p>7.5 Monitoring of Wastes</p>	<p>The recording in a register of the types, quantities, date and manner of disposal/recovery of all wastes.</p> <ul style="list-style-type: none"> • Waste composition information, determined on the basis of any relevant guidance issued by the EPA. • The recording of the treatment quantity (tonnes per annum (rolling 12-month total quantity)) and storage quantity (cubic metres at any one time). • Leachate testing of sludges and other material as appropriate sent for offsite treatment or disposal. • Annual waste minimisation report showing efforts made to reduce specific consumption together with material balance and fate of all waste materials. 	<p>All recording shall be carried out in compliance with the EPA licence and the site EMS.</p>
<p>7.6 Monitoring of Noise Emissions</p>	<p>Noise monitoring should be carried out in accordance with the <i>Guidance Note for Noise in Relation to Scheduled Activities</i>, 2nd Edition, 2006, at a frequency as specified by the Agency.</p>	<p>This is carried out at the facility.</p>

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82.8

NATIONAL ROUTE N80
TO CARLOW TOWN

LOCAL ACCESS ROAD - JOCKS LANE

PLANTED BERTH

ENTRANCE GATE

EXISTING SITE ENTRANCE

EXISTING ROPE WELL LOCATION

OFFICE

WEIGH BRIDGE

Biting centre for municipal waste (0.327 HECTARES)

PM2

D3

80.9

EXISTING SITE ENTRANCE

STREAM

SW2 75

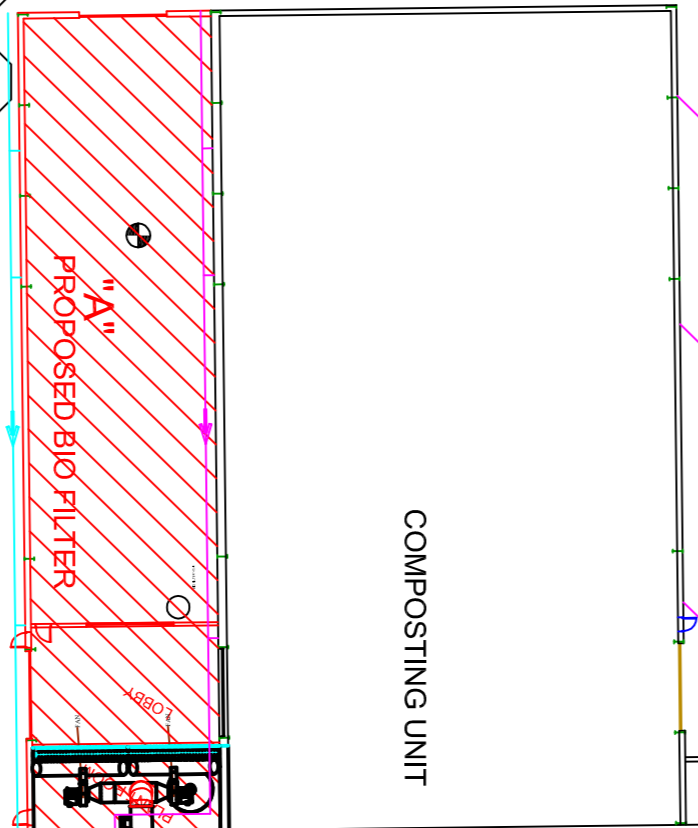
C-SITE BOUNDARY CLEARLY DELINEATED IN RED

C-SITE BOUNDARY CLEARLY DELINEATED IN RED

C-SITE BOUNDARY CLEARLY DELINEATED IN RED

C-SITE BOUNDARY CLEARLY DELINEATED IN RED

D2
DAS



COMPOSTING UNIT

BIO FILTER

TUNNEL 1

TUNNEL 2

TUNNEL 3

TUNNEL LOADING AREA

SECTION OF ROOF RAIN WATER HARVESTED

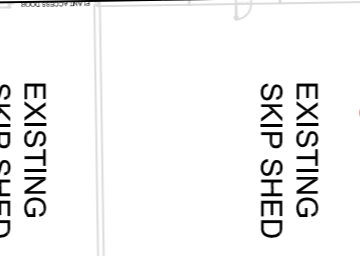
DIRECTION OF FALL

DIRECTION OF FALL

DIRECTION OF FALL

DIRECTION OF FALL

DIRECTION OF FALL



PROPOSED OIL INCINERATOR

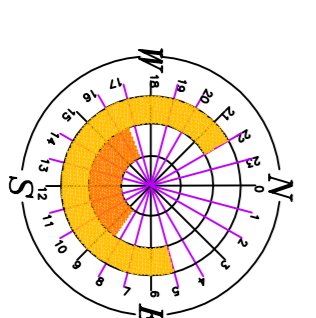
SW1

- Air Sensitive Receptors
- Dust Monitoring Locations
- PM10 Monitoring Locations
- Noise Monitoring Locations
- Surface Water Monitoring Locations

- Proposed surface water drain, road gullies and manholes to the requirements of BS 5911: PART 200. MANHOLE COVERS AND FRAMES TO IS EN 124
- Existing surface water drain (road only), road gullies and manholes to the requirements of BS 5911: PART 200. MANHOLE COVERS AND FRAMES TO IS EN 124
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SITE AREA OUTLINED IN RED
5.0273 HECTARES

- Existing Structure where Planning Permission has been obtained
- Extension and alterations and proposed works



NORTH POINT - TIME CLOCK

WATER SOURCE: ROPE WELL
METHOD OF SEWAGE DISPOSAL: PROPRIETARY EFFLUENT TREATMENT SYSTEM AND DISTRIBUTION BOX AND PERCOLATION AREA
METHOD OF SURFACE WATER DISPOSAL: WATER COURSE & RAIN WATER HARVESTING.

SITE AREA OUTLINE IN RED, I.E. 5.0273 HA.
DRAINAGE SURVEY MAP NUMBER DS CVD08, CVD13
DIGITAL MAP 4417, 4475.

ADDING PROPERTIES NORTH EAST & SOUTHWEST OF THE PROPOSED DWELLING

SW1 and SW2
Toole
Composting
SPECIALISED WASTE MANAGEMENT

KEHOE
ARCHITECTURAL DESIGN

DIGITAL THOUGHT KEOHE
100 RINGWOOD ROAD
DUBLIN 15
TEL: 01 454 4000
WWW.KEOHEDESIGN.COM
EMAIL: RICHARD@KEOHEDESIGN.COM

TITLE: SITE LAYOUT PLAN
SURFACE WATER DRAINAGE
DATE: 20/11/2014 SCALE: 1:7500
CLIENT'S NAME: Toole Composting Ltd
ADDRESS: Bohintraone, Fernagh,
Kesh, Co. Wick
FILE NAME: 4417_4475.dwg
Drawing by: D.T.K. | PAGE No. 0027/9

