

**ATTACHMENT B  
GENERAL**

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**B.1 Applicants Details**

The following are details of the applicant Ted O'Donoghue and Sons Ltd.

**B.1.1 Certified Copy of the Certificate of Incorporation:**


Number  
329846

**Certificate of Incorporation**

I hereby certify that  
**TED O'DONOGHUE & SONS LIMITED**

is this day incorporated under  
the Companies Acts 1963 to 1999  
and that the company is limited.

Given under my hand at Dublin, this  
Thursday, the 6th day of July, 2000



for Registrar of Companies

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**B.1.2 Company Registration Number**

The company registration number is 329846

**B.1.3 List of Company Directors:**

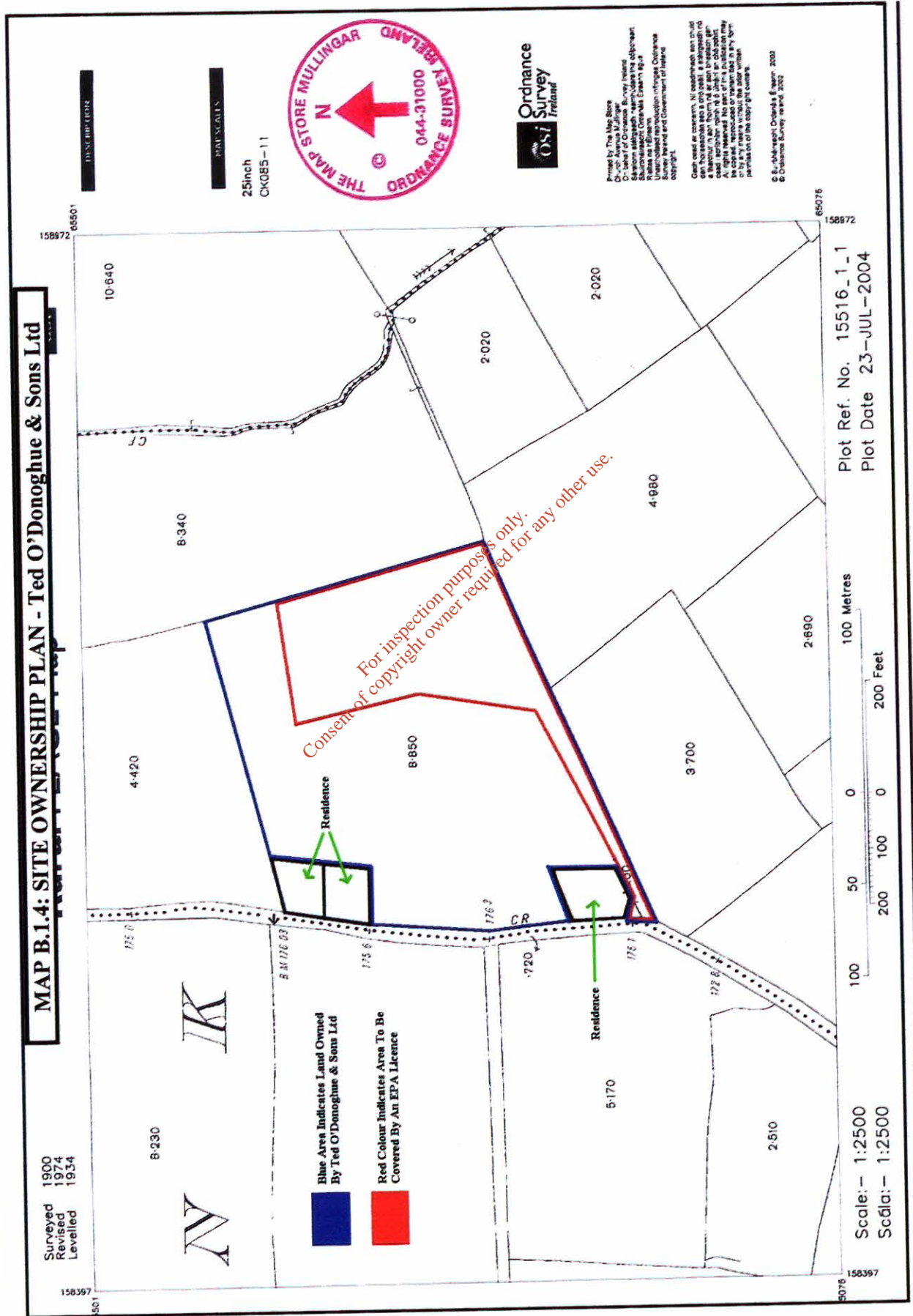
The following are the list of company directors for Ted O'Donoghue and Sons Ltd;

- Ted O'Donoghue
- Martin O'Donoghue
- Michael O'Donoghue
- Oliver O'Donoghue
- Nelly O'Donoghue

**B.1.4 Site Owner Ship Details**

Map B.1.4 on the following page indicates the ownership of the site. The land surrounding the site is owned by Ted O'Donoghue and Sons Ltd and the boundary is shown in blue ink. The boundary marked in red ink indicates the area to which the licence application relates.

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**B.2. Location of Activity**

**B.2.1 Site Plan**

A copy of the Site Plan, Drawing Number 1, can be viewed in the Drawings Folder

**B.2.2 Site Location Map**

A copy of the Site Location Map, Drawing Number 1, can be viewed in the Drawings Folder

**B.2.3 Services Plan**

A copy of the Services Plan is included in Drawing Number 1, Site Location Map, and can be viewed in the Drawings Folder

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**B.3 Planning Authority**

**B.3.1 Planning Permission Details**

Details of the Site Planning Permission S/01/0384 are included in Appendix 2.

**B.3.2 Waste Permit Details**

Details of the Site Waste Management Permit 01/00 are included in Appendix 3

**B.3.3 Other Details**

A copy of Ted O'Donoghue & Sons Ltd Waste Collection Permit, CK WMC 47/01, for the Cork Region and a copy of the Skip Licence Number, SOL/007/04, for Cork City is included in Appendices 4 and 5.

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**B.4 Sanitary Authority****B.4.1 Discharge of Effluent:**

No effluent will be discharged to a sewer of a sanitary authority or other body for the following reasons.

All domestic effluent generated on site will be discharged to a proprietary treatment unit to be installed on site. Details of the system to be installed are included in Appendix 6. Run-off from the treatment unit will discharge to percolation. Refer to Drawing Number 2 (1100-03) Site Layout Map, for details of the location of the treatment unit.

All surface water will be discharged into a 2m<sup>3</sup> intercepting trap and then onto a 180m<sup>3</sup> holding tank before discharge to a land drain. Refer to Drawing Number 2 (1100-03) Site Layout Map for details of the location of the holding tank and interceptor.

All roof water will be diverted into a 10,000 gallon stainless steel tank at the southern end of the transfer station building. This water will be used to wash vehicles and equipment on site and will also be used as a water source for fire fighting. An overflow pipe will be installed onto this tank so that excess water can be discharged to the local land drain.

Any run-off generated from the waste tipping activities in the Waste Transfer & Recovery Building will be collected in a 4,300 gallon tank located underneath the main floor of the transfer building. The level of run-off in the tank will be monitored on a weekly basis and when full an authorised liquid waste disposal operator will be contacted to empty out the tank and transfer to either a local authority waste water treatment plant or for incineration abroad.

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## B.6 Notices and Advertisements

The following are the text of the Newspaper Notice and the Site Notice as required under Articles 6 and 7 of the Waste Management (Licensing) Regulations 2004. A full copy of the Newspaper Notice is included in Appendix 7. Refer to Drawing Number 1 Site Location Maps, which indicates the position of the site notice.

### B.6.1 Newspaper Notice

#### **Application to the Environmental Protection Agency for a Waste Licence**

Notice is hereby given in accordance with the provisions of the Waste Management Acts 1996 to 2003, and the Waste Management (licensing) Regulations, 2004 that Ted O'Donoghue & Sons Ltd, Mountain View, Knockpogue, Waterfall, Co. Cork will be applying to the Environmental Protection Agency for a Waste License for a Waste Transfer Facility at Knockpogue, Waterfall, Co. Cork, National Grid Reference Number E158750 / N065305, to handle 23,000 tonnes per annum of non hazardous commercial, industrial, domestic and construction & demolition wastes.

The principal activity at the site, as specified in the Waste Management Acts 1996 to 2003, as amended by S.I. 395 of 2004 will be Class 13 of the Third Schedule, "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," and also for the following activities Class 11 of the Third Schedule, "Blending or mixture prior to submission to any activity referred to in a preceding paragraph of this Schedule," Class 12 of the Third Schedule, "Repackaging prior to submission to any activity referred to in a preceding paragraph of this Schedule," Class 2 of the Fourth Schedule "Recycling or reclamation of organic substances which are not used as solvents (including composting and other biological transformation processes)," Class 3 of the Fourth schedule " Recycling or Reclamation of Metals and metal compounds," Class 4 of the Fourth Schedule " Recycling or Reclamation of other inorganic materials," and Class 13 of the fourth Schedule "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,"

A copy of this application for a waste license and such further information relating to the application as may be furnished to Agency in the course of the Agency's consideration of the application will, as soon as is practicable after receipt by the Agency, be available for inspection or purchase, at the headquarters of the Agency.



**B.6.2 Site Notice****Application to the Environmental Protection Agency for a Waste Licence**

Notice is hereby given in accordance with the provisions of the Waste Management Acts 1996 to 2003, and the Waste Management (licensing) Regulations, 2004 that Ted O'Donoghue & Sons Ltd, Mountain View, Knockpogue, Waterfall, Co. Cork will be applying to the Environmental Protection Agency for a Waste License for a Waste Transfer Facility at Knockpogue, Waterfall, Co. Cork, National Grid Reference Number E158750 / N065305, to handle 23,000 tonnes per annum of non hazardous commercial, industrial, domestic and construction & demolition wastes.

The principal activity at the site, as specified in the Waste Management Acts 1996 to 2003, as amended by S.I. 395 of 2004 will be Class 13 of the Third Schedule, "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," and also for the following activities Class 11 of the Third Schedule, "Blending or mixture prior to submission to any activity referred to in a preceding paragraph of this Schedule," Class 12 of the Third Schedule, "Repackaging prior to submission to any activity referred to in a preceding paragraph of this Schedule," Class 2 of the Fourth Schedule "Recycling or reclamation of organic substances which are not used as solvents (including composting and other biological transformation processes)," Class 3 of the Fourth schedule "Recycling or Reclamation of Metals and metal compounds," Class 4 of the Fourth Schedule "Recycling or Reclamation of other inorganic materials," and Class 13 of the fourth Schedule "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,"

A copy of this application for a waste license and such further information relating to the application as may be furnished to Agency in the course of the Agency's consideration of the application will, as soon as is practicable after receipt by the Agency, be available for inspection or purchase, at the headquarters of the Agency.

Signed: \_\_\_\_\_  
Ted O'Donoghue

Date: 6<sup>th</sup> December 2004

**B.7 Type of Waste Activity****B.7.1 Description of Activities as Per the Third and Fourth Schedules of the Waste Management Acts 1996 to 2003:****Third 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:***

This relates to the storage of domestic, commercial and industrial residual wastes which will be stored in forty foot ejector trailers on site prior to transfer to other EPA licensed transfer stations or landfill facilities for further recovery or disposal.

***Class 12 - Repackaging prior to submission to any activity referred to in a preceding paragraph of this Schedule:***

All waste being handled at the facility is delivered to the site in refuse collection vehicles, skips or wheeled bins. This activity relates to the residual waste which remains after the recyclables are picked out and which is then repackaged into ejector trailers for transfer to authorised landfills or waste transfer facilities.

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

This relates to the mixing of domestic, commercial and industrial residual wastes on the floor of the transfer station building before being placed into articulated 40 foot ejector trailers to await transfer to other authorised facilities for disposal.

**Fourth Schedule:**

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

This relates to the shredding of timber waste and green waste removed from domestic, commercial, industrial and construction & demolition wastes tipped onto the floor of the transfer station. This also relates to the removal of cardboard and paper waste from the waste tipped onto the floor of the transfer station before being baled for storage prior to transfer to authorised recyclers.

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**Class 3 - Recycling or reclamation of metals and metal compounds:**

This relates to the removal of metal from domestic, commercial, industrial and construction & demolition wastes tipped onto the floor of the transfer station. This metal waste is then placed into a 30 foot articulated trailer to await transport to authorised metal recyclers.

**Class 4 - Recycling or reclamation of other inorganic materials:**

This relates to the removal of plastic film from domestic, commercial, industrial and construction & demolition wastes tipped onto the floor of the transfer station before being baled for storage prior to transfer to authorised recyclers.

This also relates to the separation of mixed construction and demolition wastes into its constituents parts i.e. metal, timber, cardboard, soil and stones. These waste streams are then stored before transfer to authorised recyclers or facilities for recovery.

Plate glass and glass bottles are also removed from domestic, commercial, industrial and construction & demolition wastes tipped onto the floor of the transfer station. This glass is then stored in external bays and when sufficient volumes are available the glass is loaded into skips for transfer to authorised glass recyclers.

**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:**

This relates to the storage of segregated and recovered waste streams i.e. cardboard, metal, timber, plastic, glass, soil and stones before transfer to authorised facilities for recycling.

**Current Site Activities:**

Mixed Construction & Demolition Waste, Mixed Municipal Waste (Household and Commercial Wheeled Bins), Commercial & Industrial Waste (Skips) and Domestic Waste (Household Skips) are accepted at the facility in Knockpogue.

The Mixed Construction & Demolition Waste is tipped onto the floor of the transfer station where large pieces of timber, green waste, metal, cardboard and plastics are removed by hand. The timber and green waste is shredded on site and is transported to Finsa Forest Products in Scariff and CTO Environmental in Cork for recovery. The metal is placed into a thirty foot artic trailer and transported to Cork Metal, Dublin Hill, Cork for recycling. The cardboard and plastic are baled and then sent to Glyntown Recycling, Sarsfield Court Industrial Estate, Cork for recycling. The remaining material, after segregation, is loaded into a trommel screen, using a 360° Excavator, which separates out the soil, sand and small stones from the oversize material i.e. the fines material.

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The fines are then stored externally before being transported to permitted land reclamation activities. It is planned to construct concrete bays externally to store these fines.

The oversize continues on from the trommel onto a three bay picking station where cardboard, metal, plastics, glass and timber are picked out from the oversize material and dropped in bays below. A magnet removes any metal content from the over size material. The remaining material is then subjected to a blowing process which removes any remaining paper and plastic from the remaining stone and blocks. Glass removed from the picking station i.e. mainly plate glass is stored in a skip inside the transfer station and transported to Cork Mini Skips for recycling. Glass bottles picked from the picking station are stored in external bays and then transported to REHAB in Cork for recycling.

The small paper and plastic blown from the stone and blocks is loaded into a forty foot ejector trailer bound for Mulleadys Recycling in Drumlish, Co. Longford. The stones and blocks are stored in external bays and transported to permitted land reclamation activities.

The Mixed Municipal Waste is tipped onto the floor of the transfer building and loaded directly into a forty foot ejector trailer and transported to Mulleadys in Longford for further processing. When the material arrives on site at Mulleadys, it is treated using a three stage recycling process as follows: (Refer to Appendix 8 for details of letter from Mulleadys)

1. Primary sorting is carried out manually to remove large recyclable material such as timber, metal, plastics and cardboard.
2. Second stage sorting includes shredding and tromelling where the organic fraction is removed from the oversize material. The oversize material consisting of cardboard, paper and plastics will be sent to a waste to energy plant where the waste will be recovered. The trommel fines i.e. the organic fraction is sent for composting.
3. The organic material is composted off-site to a minimum standard that meets the "Stabilised Biowaste" criteria. Any material that is screened off at the end of the composting process is re-introduced in to fresh incoming organic fines where they are used as a bulking agent in the composting process.

The Commercial & Industrial Skip Waste and the Domestic Skip Wastes are tipped out onto the floor of the transfer station and all recyclables are removed i.e. timber, green waste, metal, glass, plastic, cardboard, and these are then sent for recovery as described in the preceding paragraph for the construction and demolition wastes. Glass bottles picked from tipped material are stored in external bays and then transported to REHAB in Cork for recycling. The remaining residual waste is mixed with the household waste and placed into the forty foot ejector trailers using the 360<sup>0</sup> Excavator before being transferred to Mulleadys for further processing.

Hazardous waste materials such as batteries, paints, fluorescent tubes, oil, fridges, freezers, washing machines, tyres and gas bottles which cannot be identified on visual inspection in the skips when collecting them at the customers premises and as a result are tipped onto the floor of the transfer station, are all segregated and Quarantined and transferred to authorised facilities for recycling or disposal.

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**ATTACHMENT C**  
**MANAGEMENT OF THE FACILITY**

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## C.1 Technical Competence and Site Management

### C.1.1 Company Management

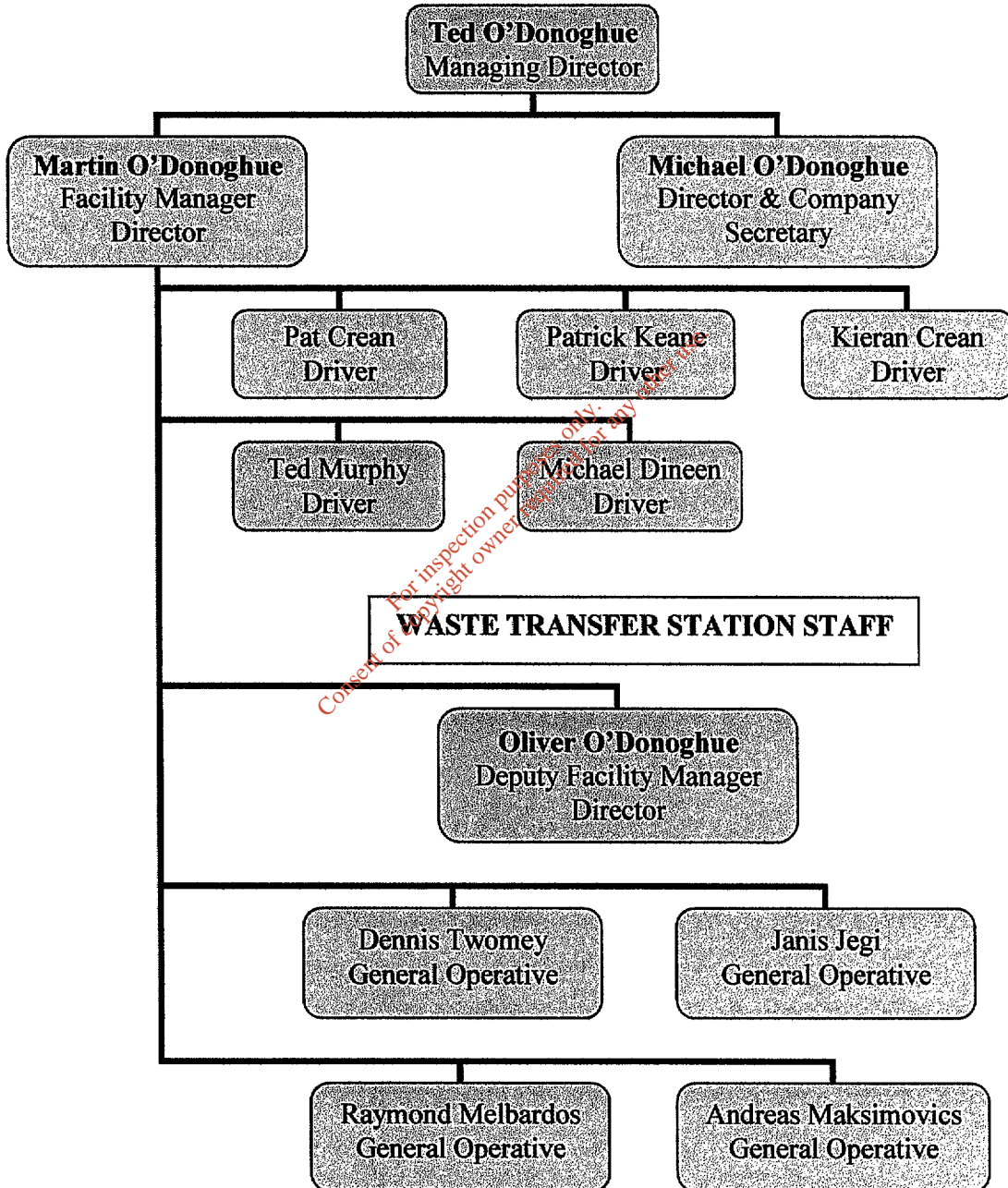
The following table C.1.1 briefly describes the duties, responsibilities and experience and qualifications of all relevant site personnel.

Table C.1.1 Company Management Details

Name	Position	Duties and Responsibilities	Experience / Qualifications
Ted O'Donoghue	Managing Director	Ted O'Donoghue has overall responsibility for the company and oversees all company activities.	Ted O'Donoghue established the waste collection business in 1979 and has over 25 years experience operating in the waste management industry.
Martin O'Donoghue	Director	<p>Martin is responsible for the day to day running of the company which includes managing the facility and organizing the fleet of collection vehicles. In terms of environmental compliance Martin also looks after the following:</p> <ul style="list-style-type: none"> <li>• Daily Nuisance Monitoring for litter, vermin and odours</li> <li>• Dealing with Correspondence from the Local Authority in relation to the site waste permit.</li> <li>• Compiles Records of all Waste Delivered to and Removed from the site.</li> <li>• Liaising with Pest Control Firms</li> <li>• Organises regular Noise, Dust and Water Monitoring</li> <li>• Organises Disposal and Recovery Outlets</li> <li>• Completes the Annual Environmental Returns required for the Waste Collection Permit and the Site Waste Permit.</li> </ul>	Martin O'Donoghue has 13 years experience operating in the waste management industry and will complete the FAS waste management training programme in 2005.
Michael O'Donoghue	Director & Company Secretary	Michael is responsible for running the office and all associated paperwork including invoicing. All correspondence of an environmental nature arrives first into the office and this is then passed onto Martin O'Donoghue to deal with.	Michael has five years experience working in the waste management industry.

**C.1.2 Company Organisational Chart**

The following company organisational chart indicates the staffing levels and management structure of the company. Further details on the companies main management personnel and specifically those responsible for environmental management are outlined in the previous section, C.1.1 "Company Management."





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**C.2 Environmental Management System (EMS)**

There has been no environmental management system developed for the facility as it was not a requirement of the site waste permit (Refer to B.3.2 Waste Permit Details). Regular monitoring has been put in place for site nuisances such as litter, vermin and odour. Records of this monitoring are maintained in the office on site. Regular monitoring for noise, dust and water has been carried out and records are maintained on site. The waste throughput tonnages are recorded electronically and compiled together on a weekly basis and all records are maintained on site. A complaints log is maintained in the office on site and all accidents that occur are recorded and all details are maintained in the office on site. Annual Environmental Returns are submitted for the Site Waste Permit and the Waste Collection Permit.

An environmental management system shall be maintained at the facility once a licence is granted from the EPA. The EMS shall be updated on an annual basis with amendments being submitted to the Agency for its agreement.

As a minimum the environmental management system shall include the following elements as outlined in the EPA BAT Guidance Notes for the Waste Sector: Waste Transfer Activities;

- Schedule of Environmental Objectives and Targets
- Corrective Action Procedures
- Awareness and Training Programme
- Details of Management Structure
- Communications Procedure
- Regular Reporting of Environmental Performance, and,
- Regular Audit of the EMS

### C.3 Hours of Operation

The following are the proposed hours of operation, waste acceptance and handling at the facility at Knockpogue, Waterfall, Co. Cork.

#### C.3.1 Proposed Hours of Operation

The proposed hours of operation of the facility are as follows:

- Monday → 6am to 8pm
- Tuesday → 6am to 8pm
- Wednesday → 6am to 8pm
- Thursday → 6am to 8pm
- Friday → 6am to 8pm
- Saturday → 6am to 6pm

#### C.3.2 Proposed Hours of Waste Acceptance / Handling

The following are the proposed hours of acceptance of waste at the facility:

- Monday → 8am to 6pm
- Tuesday → 8am to 6pm
- Wednesday → 8am to 6pm
- Thursday → 8am to 6pm
- Friday → 8am to 6pm
- Saturday → 8am to 5pm

#### C.3.3 Proposed Hours of any Construction and Development Works at the Facility and Timeframes

The proposed hours of construction and development works at the facility will take place during the proposed hours of operation as outlined above.

#### C.3.4 Any other relevant Hours of Operation Expected

There are two periods outside of the normal operating hours that are relevant to the operation of the facility. These are as follows:

1. Delivery and collection of a waste container i.e. a skip at customer's premises, outside of normal operating hours. In this case some customers can only have their waste container emptied outside of the normal operating hours which requires that a skip truck, which is parked at the facility, to be used to deliver an empty skip and / or collect a full skip at the customer's premises.

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If a full skip is then brought back to the facility it will only be parked in the waste transfer station and it will not be unloaded or handled outside of the normal waste acceptance / handling hours of the facility.

This activity generally takes place between the hours of 8pm to 12pm. Also on occasion similar work may need to be carried out on Saturdays and Sundays as skips can only be dropped or collected in the centre of Cork City during the weekend as enforced by Cork City Councils Bye-Laws on placing skips.

2. On occasion there may be a requirement to repair any broken down plant on site which is required for waste handling purposes. These repairs may need to be carried out outside of normal working hours in order for the plant to be available during the next period of waste handling on site and thus to prevent a build up of waste.

These activities mentioned above generally take place between the hours of 8pm to 12pm.

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**ATTACHMENT D**  
**INFRASTRUCTURE & OPERATION**

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## D.1 Infrastructure

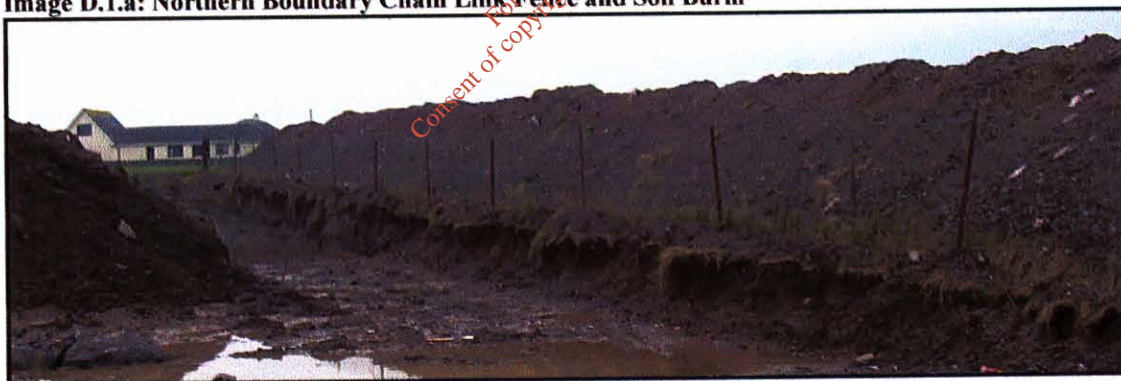
### D.1.a Site Security Arrangements Including Gates and Fencing

The site will be surrounded by a 2.4m high chain link fence on the Northern, Eastern, Western and Southern boundary of the site. A 4m high soil berm will be maintained outside the chain link fence on the Northern and Western boundary of the site. Image D.1.a shows the chain link fence and the soil berm. This will be used as a visual screen from local residence and it will be planted with suitable trees to prevent noise and dust emissions. Trees will also be sown along the Eastern and Southern boundaries to screen off the site and prevent noise and dust emissions.

The entrance road to the site, at the south western side of the facility, will have a 2.4m high chain link fence either side of the road and will be planted with suitable trees to act as a screen and to prevent noise and dust emissions emanating from the site. There are two gates on this road, one at the turn off from the main road and the other at the end of the road into the waste facility. The gate at the turn off from the main road is 1.8m high and is constructed of heavy duty box iron. The gate at the end of the road into the waste facility is a light aluminium agricultural gate which is 1.25m high.

During operating hours the site entrance will be supervised by the Facility Manager. Outside operating hours, the main gates will be locked and a CCTV System will be installed to monitor the site. Two German Shepard dogs are also housed on site to act as a deterrent to any intruders.

**Image D.1.a: Northern Boundary Chain Link Fence and Soil Berm**



### D.1.b Designs for Site Roads

Details of access roads into the site are shown in Drawing Number 2 (1100-03) Site Layout Map. Because the whole site will be on a hard stand area, the site roads are taken to be of the same detail as the hard stand area, i.e., a 300mm layer of compacted hardcore with a 300mm concrete covering.

### D.1.c Design of Hardstanding Areas

Hard-standing areas on site are provided as follows, depending on requirements:

- (a) As per site roads (Attachment D.1.b above);
- (b) Ready-mix concrete floors as used in the Waste Transfer Building and Workshop.

### D.1.b Plant

The plant to be utilized at the facility is as follows:

- Horizontal Baler for cardboard and plastic
- Powerscreen 725 LL Trommel with 25mm screen
- Powerscreen Picking Station with overband magnet and paper / plastic blower
- Komatsu PC 210LC 360<sup>0</sup> Excavator with bucket
- Fiat Hitachi FH 150 W2 360<sup>0</sup> Excavator with McQuaid Engineering Grab
- Hyster Forklift Truck
- Tim Enviropro SD-1010 Timber Shredder (See Image D.1.d)
- 2 FG Wilson Diesel 3-Phase Power Generators - 60 kva and 250 kva
- Schmidt 151 Compact Road Sweeper
- Two Forty Foot Articulated Truck Ejector Trailers
- Forty Foot Articulated Truck Curtain Side Trailer
- 4 Four cubic yard forklift tipping containers
- 2 Six cubic yard skips for storing rubble and soil
- DAF 1900 Chain Lift Skip Truck
- Two cubic yard skip for storing plate glass
- 14 cubic yard open-top skip for mixed plastic film
- 14 cubic yard skip used to store mixed newsprint and paper

There are also a number of on-the-road vehicles for waste collection and transfer. These include:

- 2 chain-lift skip trucks;
- 1 hook-lift skip trucks;
- 1 articulated truck;
- 2 refuse collection vehicles – commercial wheeled bin waste;
- 1 Skip Eater – skips and cardboard;

Image D.1.d: Tim Wood Shredder and Wood Processing Area



### D.1.g Design and Location of Fuel Storage Areas

A secure Fuel Storage Area is located on the north western boundary of the site, refer to Drawing Number 2 (1100-03) Site Layout Map and Image D.1.g. It is bounded in a concrete area and has a capacity of more than 110% of the volume of the largest storage tank. The bund capacity is approximately 19,000 gallons and the largest tank capacity is 5,000 gallons. The bund has been certified by a Chartered Engineer and a copy of the certificate can be seen in Appendix 9.

**Image D.1.g: Fuel Storage and Bund Area**



### D.1.h Waste Quarantine Area

A Waste Quarantine Area is located inside the Waste Transfer Building for items such as batteries, fluorescent tubes and unidentifiable liquid wastes mainly paints. In the event that hazardous waste or other non-complaint waste which cannot be seen on visual inspection of the skips at the customers premises and is inadvertently delivered to the Waste Transfer/Recycling facility, the waste will be removed to the designated Waste Quarantine Area. The waste shall be either removed from the site immediately by the waste generator or held at the Quarantine Area until such time that the waste generator can arrange for the waste to be transported off-site. Gas bottles are stored in a 20 foot storage unit located next to the weighbridge and waste tyres and electrical items are stored in external bays at the western end of the Waste Transfer Building.

**Image D.1.h: Tyre Storage Area**



**D.1.i Waste Inspection Areas**

A Waste Inspection and Tipping Area is located inside the Waste Transfer Building. An area will be marked out on the hardstand identifying it as a Waste Inspection Area and adequate lighting shall be provided in the area to ensure proper inspection of the waste on winter's evenings.

**D.1.j Traffic Control**

There is one entrance to the facility which will be used to access the site by Ted O'Donoghue and Sons Ltd vehicles as well as vehicles from other waste operators delivering waste too and collecting waste from the facility. All staff and contractors will be shown on induction training where to unload waste, park vehicles and park skips on site. All waste storage and tipping areas will be identified through signage and appropriate lighting will be installed on site to ensure safe driving on site during winter mornings and evenings.

When waste vehicle drivers arrive on site they will be directed by the Facility Manager around the Transfer/Recycling facility. Car parking will be facilitated at the Western end of the facility for staff and visitors and suitable signage directing vehicles to the parking area will be provided. See drawing Number 2 (1100-03) Site Layout Map for details.

**D.1.k Sewage and Surface Water Drainage Infrastructure**

Wash Water and Domestic Effluent generated from the Office and Toilets will pass through a proprietary treatment unit, refer to Appendix 6 for details, before passing onto percolation. Refer to Drawing Number 2 (1100-03) Site Layout Map for details of location of the proprietary treatment unit.

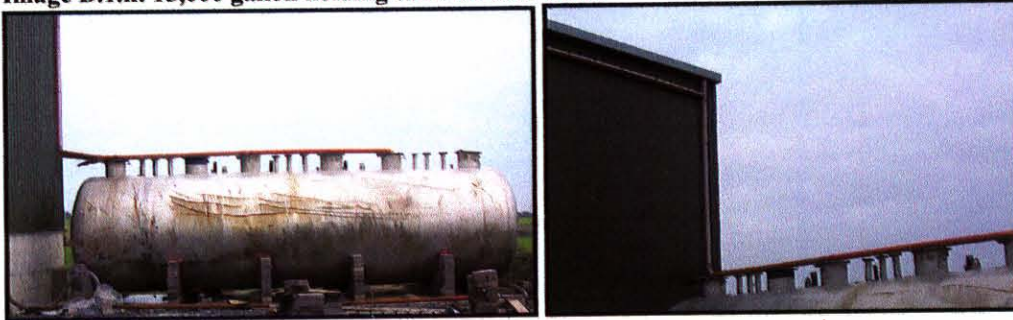
The yard surface water will be collected in gullies and box gully drains and will pass into a 2m<sup>3</sup> intercepting tank before passing through a 180m<sup>3</sup> holding tank and onto a local land drain which connects into the Curraheen River. The interceptor tank and holding tank are to be located at the southern end of the waste transfer building, refer to Drawing Number 2 (1100-03) Site Layout Map for details.

Water runoff from the waste transfer building is collected in an underground storage tank beneath the floor of the waste transfer building. This tank consists of 4300 gallon concrete tank which has been tested and certified by a chartered engineer. Refer to Appendix 9 for details of the bund integrity test.



Roof water from the facility building will be diverted into a 10,000 gallon holding tank at the south eastern end of the facility, see attached Image D.1.k. The water will be used for washing plant and equipment on the site as well as for use for fire fighting purposes. An overflow pipe will be attached to the storage tank to drain off excess water. This will be diverted onto a local land drain which connects to the Curraheen River at the South Eastern end of the facility. Refer to Drawing Number 2 (1100-03) Site Layout Map for further details.

**Image D.1.k: 15,000 gallon holding tank for roof water**



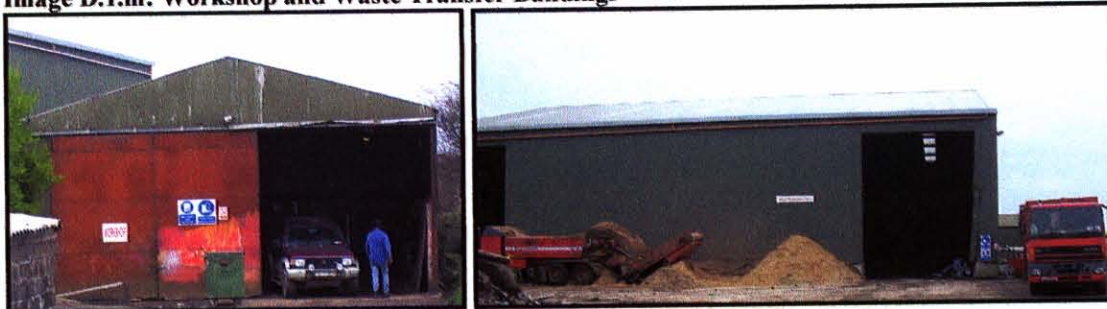
#### D.1.1 All Other Services

All site services and ducting layout including power, water and telephone are shown on Drawing Number 1 (1100-03), Site Layout Map.

#### D.1.m Plant Sheds, garages and equipment compound

Mechanical repairs will be carried out in the workshop located at the southern end of the facility and this will also be used to store repair equipment. The refuse vehicles will be stored on the hard standing area along the northern site boundary as indicated on Drawing Number 2 (1100-03) Site Layout Map, which also shows the location of the Repair Workshop building and the transfer station building. Detailed drawings of the Transfer Station building can be viewed in Drawing Number 4 (1100-02) Side Elevations.

**Image D.1.m: Workshop and Waste Transfer Buildings**



### D.1.n Site Accommodation

Site accommodation includes a small weighbridge cabin which houses the computer to record the weight and details of each waste load entering and exiting the facility and the docket printing machine. Also on site there is a port-a-cabin for the site office and a port-a-cabin for toilet and staff locker room facilities, see attached Image D.1.m. The area behind the offices to the south western end of the site will be used to store empty skips and wheeled bins. All vehicle parking will take place at the north western end of the facility and all car parking will be located along the western end of the facility. Refer to Drawing Number 2 (1100-03) Site Layout Map for details.

**Image D.1.n: Weighbridge Cabin, Staff Toilet, Locker Room and Site Office**



### D.1.o A fire control system, including water supply

Fire extinguishers are positioned at various locations around the site and these will be used to control any outbreak of fire. In the main, fire extinguishers are located in the repair workshop, the waste transfer station building, the office and the staff canteen facilities. The 10,000 gallon tank at the south eastern end of the facility, see Image D.1.k, will store rainwater from the waste transfer station roof area. This will then be used to pump water to two fire hose connections to be located at the north eastern and south western end of the waste transfer building to fight any fires that occur.

### D.1.q Any Other Waste Recovery Infrastructure

There will be external storage bays located at the facility for storing recovered waste for recycling. Concrete storage bays for soil, rubble, green waste and chipped wood will be located at the north eastern end of the facility, refer to Drawing Number 2 (1100-03) Site Layout Map for details of the location of these storage bays. At the south western end of the waste transfer building there will be bays located for glass and scrap metal and also a quarantine area for fridges, freezers, tyres and other electrical goods.

**Image D.1.q: External Glass Storage Bays**

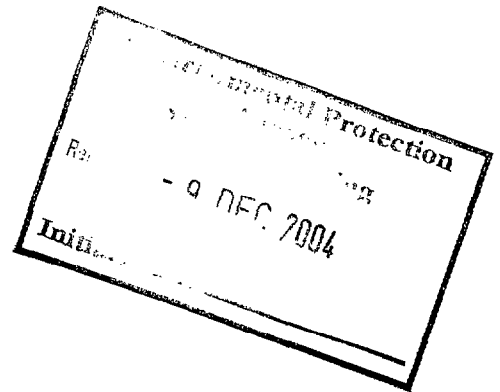


**D.1.s Construction and Demolition Waste Infrastructure**

All construction and demolition waste will arrive at the facility in skips. The mixed construction and demolition waste will be tipped onto the floor of the transfer station and any large recyclables such as cardboard, timber, plastic and metal will be removed from the tipped waste and stored in their designated storage areas. The remaining material will be loaded into the powerscreen trommel which will separate the soil and small stones from the rubble. The rubble will continue on along a conveyor belt and any small pieces of timber, cardboard and metal will be removed on the picking station manually. The remaining rubble will fall over the edge of the conveyor belt and any small pieces of paper and plastic will be blown from the rubble with the blower. The small pieces of paper and plastic will be loaded into the 40 foot ejector trailer for transfer to Mulleadys in Longford. Refer to attached Drawing Number 3 (1100-01) Floor Plans for details of the internal layout of the Waste Transfer Station.

The separated soil and the clean rubble will be stored in external storage bays to be constructed at the north eastern end of the facility, see Drawing Number 2 (1100-03) Site Layout Map for details. The metal, timber and cardboard will be removed and stored in their designated storage areas before transfer for recycling.

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## D.2 Facility Operation

The following is a description of the processes at the waste facility of Ted O'Donoghue and Sons Ltd.

### D.2.1 Unit Processes

#### *Types of Waste Accepted:*

The following are the main types of waste accepted at the facility in Knockpogue:

1. Mixed Construction & Demolition Waste
2. Mixed Municipal Waste (Household and Commercial Wheeled Bins),
3. Commercial & Industrial Waste (Skips), and,
4. Domestic Waste (Household Skips)

#### *1. Mixed Construction & Demolition Waste Processing:*

When the Mixed Construction & Demolition Waste arrives on site in skips it is weighed in over the weighbridge and the information is recorded on a software package known as **Industrial Weighbridge Waste Management Software**. The waste is then tipped onto the floor of the transfer station where large pieces of timber, green waste, metal, cardboard and plastics are removed manually by hand or using the grab on the 360<sup>0</sup> Rubber Tyre Excavator.

The timber and green waste is placed outside the building next to the TIM Shredder and is shredded and stored on site. When there is sufficient volume available they are loaded into a 30 foot articulated tipper trailer and is transported to Finsa Forest Products in Scariff or CTO Environmental in Cork for recovery.

The metal removed from the tipped construction & demolition waste is either placed into a thirty foot artic trailer stored outside the waste transfer station building or else stored in the scrap metal bay at the western end of the facility. When there is sufficient volume of metal in the 30 foot articulated trailer or the scrap metal storage bay is full, arrangements are made to have the metal transported to Cork Metal, Dublin Hill, Cork or to National Recycling in Cork City for recycling.

**Image D.2.1: Scrap Metal Storage Area**



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The cardboard removed is placed next to the horizontal baler and baled. The plastic is stored in a skip located in the waste transfer station building and when it is full it is baled. Any paper and newsprint removed from the tipped waste is stored in a skip located in the waste transfer station building and when this is full it is baled in the horizontal baler. All bales are stored in a forty foot curtain side trailer and when full they are transferred to Glyntown Enterprises Ltd, Sarsfield Court Industrial Estate, Glanmire, Co. Cork for recycling.

The remaining material, after manual and mechanical segregation on the floor of the transfer station building, is loaded into a Powerscreen trommel with a 25mm diameter screen, using the 360° Rubber Tyre Excavator. The trommel screen separates out the soil, sand and small stones i.e. the fines material, from the oversize material i.e. blocks, large stones, tiles, cardboard, glass, timber, metal, light paper and plastic.

The fines fall through the trommel screen and onto a conveyor belt which transfers the fines into a six cubic yard skip on the DAF 2500 skip truck. When this is full it is tipped outside and stored until there are sufficient quantities available to fill a thirty foot tipper trailer. The fines are then transported to permitted land reclamation activities in the Cork Region for recovery. Concrete bays will be constructed externally to store these fines.

The oversize continues on from the trommel onto a three bay picking station where cardboard, plastics, glass and timber are manually picked out from the oversize material and dropped into bays below. The cardboard and plastics are baled and the timber is shredded in the TIM shredder. Glass removed from the manual picking i.e. plate glass, is stored in a skip inside the transfer station and when full it is transported to Cork Mini Skips for recycling. Glass bottles picked from the picking station are stored in external bays and when the bays are full the glass is loaded into skips and transported to REHAB in Cork for recycling. A magnet removes any metal content from the over size material and this falls into a skip below the belt. The metal is either tipped into the thirty foot trailer or stored in the scrap metal storage bay. The remaining materials, mainly blocks, large stones and tiles, are then subjected to a blowing process which removes any remaining light paper and plastic from the remaining stone and blocks.

The small paper and plastic blown from the stone and blocks is loaded into a forty foot ejector trailer bound for Mulleadys Recycling in Drumlish, Co. Longford. The stones, blocks and tiles are stored externally until there are sufficient quantities available to fill a thirty foot tipper trailer. The stones, blocks and tiles are then transported to permitted land reclamation activities for recovery. Concrete bays will be constructed externally to store this oversize material and it is planned to crush this material on site for resale as fill material for roads.

**2. Mixed Municipal Waste (Household & Commercial Wheeled Bins) Processing:**

The Mixed Municipal Waste arrives on site in Refuse Collection Vehicles (RCV's) and they are weighed over the weighbridge. The RCV's reverse into the transfer station building and tip the contents of their load onto the floor of the transfer station building. Any large items of metal, timber, green waste, cardboard and plastic are extracted from the tipped waste and processed as per the construction & demolition waste outlined previously. The remaining residual material is loaded directly into a forty foot ejector trailer using the 360<sup>0</sup> Rubber Tyre Excavator and grab and when full it is transported to Mulleadys in Longford for further processing. When the material arrives on site at Mulleadys, it is treated using a three stage recycling process as follows: (Refer to Appendix 8 for details of a letter from Mulleadys outlining the process)

1. Primary sorting is carried out manually to remove large recyclable material such as timber, metal, plastics and cardboard.
2. Second stage sorting includes shredding and tromelling where the organic fraction is removed from the oversize material. The oversize material consisting of cardboard, paper and plastics will be sent to a waste to energy plant where the waste will be recovered. The trommel fines i.e. the organic fraction is sent for composting.
3. The organic material is composted off-site to a minimum standard that meets the "Stabilised Biowaste" criteria. Any material that is screened off at the end of the composting process is re-introduced in to fresh incoming organic fines where they are used as a bulking agent in the composting process.

**3. Commercial & Industrial Waste (Skips) Processing:**

Commercial & Industrial Skip Waste arrives on site in skips or in Rear End Loader Skip Eater Vehicles and is weighed over the weighbridge. The vehicles reverse into the transfer station building and the contents are tipped out onto the floor of the transfer station and all recyclables are removed i.e. timber, green waste, metal, glass, plastic, cardboard, either manually or mechanically. These recyclable waste streams are then processed as outlined in the paragraph for the construction and demolition wastes.

The remaining residual waste is mixed with the tipped household waste and loaded into the forty foot ejector trailers using the 360<sup>0</sup> Excavator before being transferred to Mulleadys for further processing.

**4. Domestic Waste (Household Skips) Processing:**

Domestic Skip Waste arrives on site in skips and is weighed over the weighbridge. The waste material is processed as per the commercial and industrial skip waste outlined in the preceding paragraph number three.

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Increased waste recovery at the facility will occur through the refining of the segregation process on site and through implementation of segregation of waste streams at source where possible. Other waste operators delivering household waste to the facility will be audited to ensure that they are introducing waste segregation for households in line with the conditions of their waste collection permits.

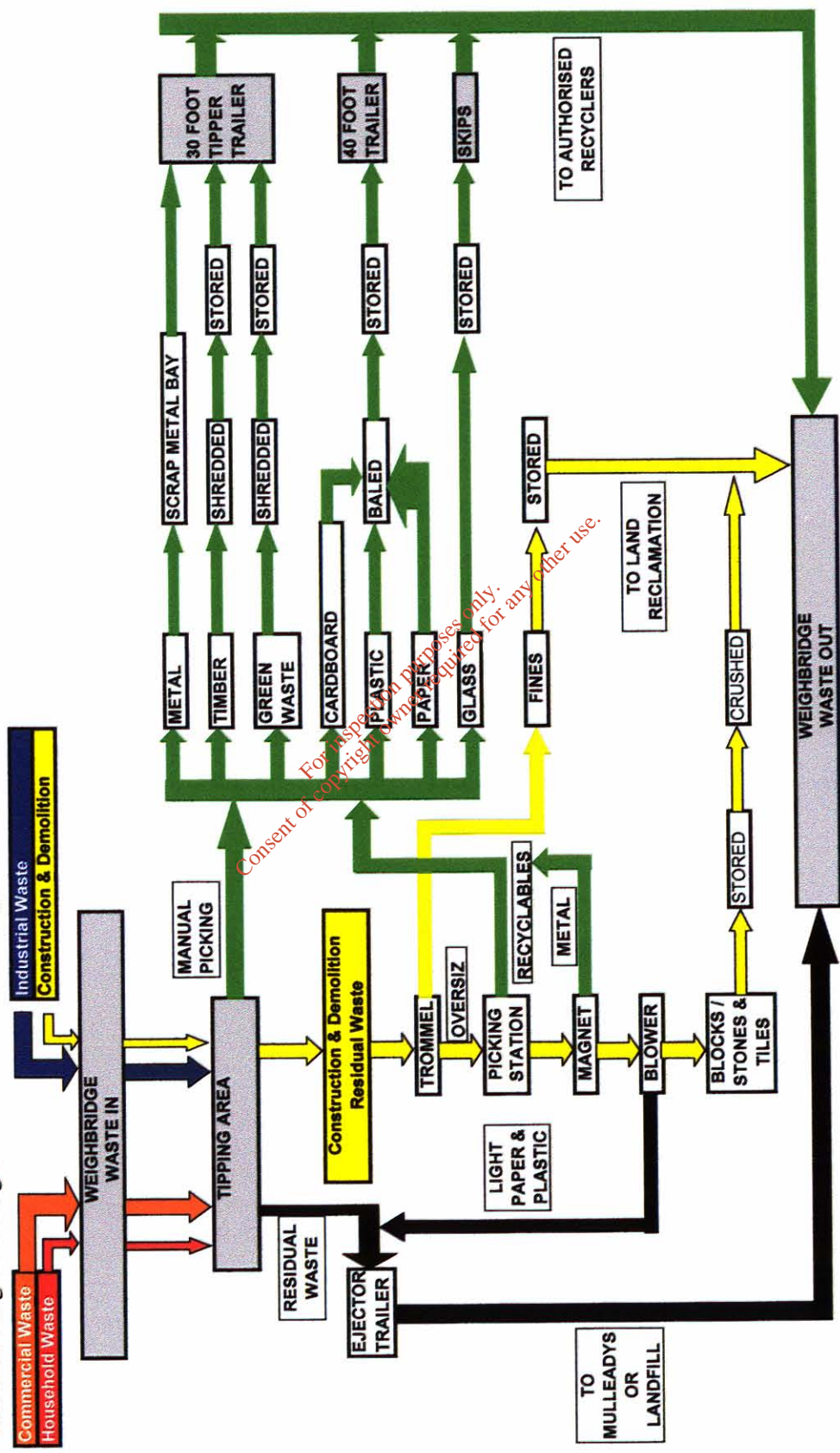
### *Waste Quarantine Process*

Hazardous waste materials such as batteries, paints, fluorescent tubes, oil, fridges, freezers, washing machines, tyres and gas bottles which cannot be identified on visual inspection in the skips or wheeled bins when collecting them at the customers premises and as a result are tipped onto the floor of the transfer station, are all segregated and Quarantined on site. The batteries, paints, fluorescent tubes and oil are stored in receptacles located in the waste quarantine area within the waste transfer station building. Fridges, freezers, washing machines and tyres are stored in external storage bays at the western end of the waste transfer station building. Gas Bottles are housed in a twenty foot container next to the weighbridge. These materials are temporarily stored and transferred back to the original waste generator or else transferred to authorised facilities for recycling or disposal.

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D.2.2 Process Flow Diagram

The following flow diagram illustrates the waste processes described in D.2.1 above.





### D.2.3 Cleaning and Maintenance

**Cleaning:** At the end of each day the floor of the Transfer/Recycling Facility and the tipping areas will be cleaned of residual waste. Any liquid around the waste handling areas will be swept and washed into the gullies of the leachate collection system.

**Plant Maintenance:** A number of different properties of the various plant on site, need to be checked on a daily, monthly or annual basis. Factors such as oil temperature, oil levels and oil filters need to be inspected every day, along with the hose pipe connections and the pump motors. Once per month all sliding parts will need to be greased and checked for wearing. Regular plant and vehicle maintenance is carried out and will form part of the company's maintenance schedule.

### D.2.4 Management

Management of the activity will be as described in Attachment C.

### D.2.5 Emissions

The only emissions during normal operation will be dust, noise and leachate. The dust and noise will be generated by waste collection vehicles entering and exiting the Transfer/Recycling Station and operation of the plant on site. Dust emissions will be monitored regularly and controlled by regularly spraying water over the site hardstand surface and access roads. Noise emissions will be monitored regularly and controlled by carrying out the recovery operations inside the Waste Transfer/Recovery Facility. Leachate will be generated from the tipping of waste in the Transfer/Recovery Facility. This Leachate will be gathered in the Leachate collection system.

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**ATTACHMENT E  
EMISSIONS**

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## E.1 Emissions to Atmosphere

There will be no point emissions to atmosphere from the waste management facility. However, fugitive atmospheric emissions will include wind-blown dusts and some odours from time to time.

### E.1.1 Fugitive Dusts Emissions

These will occur at site boundaries. Table E.1.1 below gives a summary of the dust emissions from the proposed activity.

**Table E.1.1 Dust Emissions**

Emission Ref	Location	Composition	Frequency	Sampling proposed
A2-1	at site entrance	Windblown particulates	Mostly during summer and other dry weather periods	Dust deposition by Bergerhoff method
A2-2	site boundary	Windblown particulates	As above	As above
A2-3	site boundary	Windblown particulates	As above	As above
A2-4	site boundary	Windblown particulates	As above	As above

It is expected that dust emissions from the site will be effectively controlled by proposed control measures described in section F.1.1.

### E.1.2 Fugitive Odour Emissions

Odours may arise from the facility due to the handling of domestic waste or refuse waste which may contain organic fractions. Odours generally become a problem if residents take issue to certain smells. However, as detailed in attachment F.1.2 odours are not expected to be a problem with the site and historically have not been an issue with the site.

In summary odour emissions are not expected from the facility.

## E.2 Emissions to Surface Water

There will be 1 point emission to surface water (land drain) from the waste management facility. There is no emission to land drain from the site at present as the site infrastructure to direct surface water run-off is not yet in place.

**Table E.2 Surface Water Emissions**

Emission Ref	Location	Composition	Frequency	Sampling proposed
SW1	Discharge downstream of retention tank and flowing to land drain.	Treated surface water run-off No List I or II substances are expected	Constant	Standard methods acceptable to the EPA

Only the following substances listed in the Schedule of the EPA (Licensing)(amendment) Regulations 2004 (S.I. No. 394 of 2004) are expected to be included in the emissions to surface water from the waste management facility. The levels of these substances will be insignificant due to effective treatment technologies employed.

- Materials in suspension (suspended solids in treated effluent)
- Substances which contribute to eutrophication (in particular, nitrates and phosphates) in treated effluent
- Substances which have an unfavourable influence on the oxygen balance (and can be measured using parameters such as BOD, COD, etc.) i.e. treated effluent.

Details on emissions from on-site surface water collection systems are as follows:

### E.2.1 Drawings with dimensions of the surface water retention system and the interceptors.

See specification drawings attached.

### E.2.2 Catchment areas of the site for water run-off.

See drainage plans attached (drawing no 1100-03)

### E.2.3 Meteorological data for the site including rainfall intensities and duration's.

According to the Cork County Waste Management Plan 1999, the southwest coast of Cork is the mildest part of Ireland, with average January temperatures of 7°C (5°C in the northeast of the country) and July temperatures averaging 16°C. Annual rainfall is 2,000mm on the mountains of the west and 1,000mm in the southeast.

The tables below gives some historical rainfall and temperature data for Cork Airport (approximately 7.5 km east of the site and the closest meteorological station to the site at Knockpoge, Waterfall, Co. Cork).

#### Total rainfall for Cork Airport;

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual (mm)
2004	106.6	78.8	114.0	65.3	46.2	100.0	51.9						562.8
2003	76.0	78.6	70.3	126.7	100.3	115.5	96.2	23.1	55.4	27.8	125.0	72.8	967.7
mean	148.3	115.9	97.1	70.2	84.1	67.7	65.4	89.9	97.4	125.8	108.7	136.5	1206.9

#### Mean temperatures for Cork Airport;

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual (°C)
2004	6.1	5.7	7.1	8.3	11.4	14.2	14.1						9.5
2003	5.3	5.8	7.5	9.2	10.2	13.3	15.1	16.2	13.7	9.8	8.2	6.4	10.1
mean	5.1	5.1	6.3	7.9	10.3	13.0	14.9	14.6	12.8	10.4	7.2	6.1	9.5

After reviewing the above annual rainfall statistics for Cork Airport and taking into account the historical rainfall data, one may assume that the average annual rainfall at the Ted O'Donoghue and Sons Ltd Waste Disposal site is approximately 900mm.

Similarly, taking into consideration the data from Cork Airport, one can estimate that the January mean daily air temperature for the site is approximately 5.7 °C while the July mean daily air temperature is 14.6°C.

The prevailing winds in the Cork region are a mixture of north-west, west, south-west and southerly in origin with approximately 0.6% of the wind defined as calm.

### E.2.4 Potential points of contamination/areas most at risk

All treated surface water run-off and treated wash water will be discharged to the open land drain located at the south east corner of the site. This is the potential area most at risk from surface discharge contamination. However, due to the control measures proposed in attachment F.1.4 the risk of contamination at this location is minimal.

### E.3 Emissions to Sewer

Ted O'Donoghue and Sons Ltd Waste Disposal do not discharge any effluent or sewage from the site to sewer. All domestic sewage generated on-site will be treated by a waste water treatment system with a subsequent percolation area.

Consequently, there will be no discharge to sewer from the facility.

### E.4 Emissions to Groundwater

Presently there is one borehole installed at Ted O'Donoghue and Sons Ltd Waste Disposal site and is used as a municipal water source (the supply being the underlying groundwater). Sampling of this well is proposed in Attachment F.5.

There will be 1 point emission to ground from the waste management facility (percolation area associated with the sewage treatment plant).

**Table E.4 Ground Water Emissions**

Emission Ref	Location	Composition	Frequency	Sampling proposed
SL1	Percolation area to ground from the sewage treatment plant	Treated effluent from treatment plant	Constant	none

It is not expected that the emission to ground will contain any of the following dangerous substances:

List I and List II of the Directive on the Protection of Groundwater Against Pollution Caused By Certain Dangerous Substances (80/68/EEC)

**LIST 1**

- Organo halogen, organo phosphorous and organo tin compounds.
- Carcinogenic or tetragenic substances.
- Mercury and cadmium compounds.
- Mineral oils, hydrocarbons and cyanides.

**LIST 2**

- 20 metalloids and metal compounds.
- Biocides and their derivatives not appearing on List 1.
- Substances having a deleterious effect on the taste or odour of groundwater.
- Toxic or persistent organic compounds of silicon.
- Inorganic phosphorous compounds.
- Fluorides.
- Ammonia and Nitrites.

**E.5 Noise Emissions**

There will be 2 point source noise emissions from the waste management facility.

**Table E.5 Noise Emissions**

<b>Emission Ref</b>	<b>Location</b>	<b>Composition</b>	<b>Frequency</b>	<b>Sampling proposed</b>
NE1	Waste trommel inside the transfer station	Noise from waste processing	Intermittent	ISO 1996/1 - annual noise survey
NE2	Waste timber shredder outside the transfer station	Noise from waste timber processing	Intermittent	As above

As stated in F.1.3 the overall noise output from the site is minimal due to the control measures specified in F.1.3. Most importantly, all waste tipping and processing will occur inside the transfer station. Therefore section F.6 highlights that an annual environmental noise survey will be conducted at the waste management facility and will focus on noise measurements at boundary and noise sensitive locations.

A summary of all environmental emissions locations are shown on the attached Figure E.1.1

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**E.6 Environmental Nuisances****E.6.1 Vermin/birds/flies**

The Ted O'Donoghue & Sons Ltd Waste Disposal site will function as a waste transfer station. All incoming waste loads to the site will be processed on a fast turnaround time and there will be no biodegradable or putricible waste stored at the facility for long periods of time. Attachment H of this waste license application gives further operational details of the waste management facility.

**E.6.2 Litter**

All waste loads will be tipped inside the transfer station and all baled waste will be stored indoors also. Only glass, metals and some processed construction and demolition waste will be stored temporarily outside the transfer station prior to off-site removal. These waste types do not lend themselves to windblown litter.

**E.7. Emissions to Humans****E.7.1 Human Beings and Traffic**

Ted O'Donoghue and Sons Ltd Waste Disposal have operated a waste collection and recycling service at the site since 1989. The site is located in the townland of Knockpoge, Waterfall, County Cork approximately 6.5 km south west of Bishopstown, Cork. The site is located in a rural, agricultural setting.

The closest dwelling to Ted O'Donoghue and Sons Ltd Waste Disposal's site is the O'Connor Household approximately 90m from the north west perimeter. All residential dwellings within a 500metre radius of the waste management site have been identified in Table E.6.3 below and Map E.6.3. There have never been any complaints from the houses regarding Ted O'Donoghue and Sons Ltd Waste Disposal operations.



Table E.6.3 All residential dwellings within 500metres of the waste management site

Map E.6.3 ref no	Residence name	Distance from site (metres)
1	O'Donoghue	100
2	Mc Carthy	103
3	O'Connor	88
4	Ford	188
5	Rodgers	355
6	Quaid	366
7	Cussen	345
8	Walsh	411
9	Downey	230
10	Murphy (Senior)	263
11	Murphy (Esquire)	288
12	Conway	300
13	O'Mahoney	477

The immediate area surrounding Ted O'Donoghue and Sons Ltd Waste Disposal site is not used for recreation or amenity. There are no sensitive buildings e.g. school, hospitals etc in the immediate vicinity of the site, the closest school is a national school located in Ballyhegarty (OS W 610 670) approx. 3km north east of the site.

Effective site management should ensure that the waste transfer and recycling facility does not have a negative impact on the local residents. Furthermore, proposed site developments described in attachment D will improve the visual aspects of the facility and provide better working conditions for site staff.

Current traffic movements to and from the site do not have a negative impact on the traffic volumes and traffic impacts in the area. The vast majority of vehicles entering and exiting the Ted O'Donoghue and Sons Ltd Waste Disposal site are in the direction of Cork City to the north east and the primary proportion of Cork County to the north of the site (accessed mostly by the Cork City road direction). The waste management site also accepts waste from other operators who mostly travel to the site from Cork City direction.

### E.7.2 Human Beings and Waste Management

According to the National Waste Database Factsheet Series 2001-Municipal Waste issued by the EPA the average per capita household waste generation in 2001 was 375kg. A further investigation on a county basis showed that Cork County had a household waste per capita value of 361kg in 2001 and Cork City had a household waste per capita value of 458kg for the same year.

The total number of households in County Cork in 2002 was 105,248, suggesting an average of 3.02 persons per household. Therefore assuming that the average dwelling is occupied by 3 people each household in Cork County may generated on average 1,083kg of waste (based on 2001 statistics).

Table E.7.2 below summarises the major waste streams arisings in Cork County 2001 and 2002 as taken from the 1999-2004 Cork County Waste Management Plan.

Table E.7.2 major waste streams arisings in Cork County 2001 and 2002

Sector	Total Arising 2001 (Tonnes)	Total Arising 2002 (Tonnes)
Household	117,185 <sup>1</sup>	**119,777
Commercial	94,413 <sup>2</sup>	**96,018
Non-Hazardous Industrial	*438,403 <sup>3</sup>	*438,403
Hazardous Industrial	*115,347 <sup>4</sup>	*115,347
Municipal Sludges	4,489 <sup>5</sup>	4,489
C&D Waste	*500,000 <sup>6</sup>	*500,000

\*Accounts for both City and County region.

\*\*2002 figures based on growth figures outlined in "National Overview of Waste Management Plans", DOEHLG, April 2004.

1 National Waste Database Report, EPA, 2001.

2 National Waste Database Report, EPA, 2001.

3 National Waste Database Report, EPA, 2001.

4 National Waste Database Report, EPA, 2001.

5 Actual collection figures, Cork County Council 2002

6 Bacon Report, 2001

There is no restriction imposed on individual municipal waste producers in Cork regarding the location at which they legally dispose of their waste. The individual producer or contractor may travel to another county to dispose of his/her waste subject to having the necessary permits in place. This situation is evident in County Cork whereby some of the waste generated in the administrative area of Cork County Council is recycled, treated and in some cases landfilled outside of the county. Waste quantification studies carried out in Cork suggests that 50% of commercial and non hazardous industrial waste (excluding sludge) are exported out of the county for treatment, recovery or recycling.

Cork County Council landfill sites are listed below :

No	Facility name
1	Youghal Landfill (South Cork)
2	East Cork Landfill (Rossmore, South Cork)
3	Derryconnell Landfill (West Cork)
4	Benduff Landfill (West Cork)

As highlighted above, with an increase in population there will be an increase in waste generation. The Ted O'Donoghue and Sons Ltd Waste Disposal's facility will be able to manage and recycle this waste. Therefore the facility will have an overall positive impact on the population of County Cork and Cork City.

### E.7.3 Human Beings and Cultural Heritage Features

County Cork has a wealth of features of archaeological, architectural, historical and/or artistic interest. The following sources were reviewed in order to assess these features in relation to the Ted O'Donoghue & Son's Ltd. Waste Transfer site;

- 2003 Cork County Development Plan.
- No. 86 and 87 Discovery Series Maps compiled, printed and published by the Ordnance Survey, Phoenix Park, Dublin 8.
- Waste Management Plan for the Cork Region October 2004

It is the stated objective of the Cork Planning Authority 'To seek the protection of all structures within the county which are of special architectural, historical, archaeological, artistic, cultural, scientific or technical interest'.

The Planning Authority also intends to facilitate public access to the National Monuments in State care in its area and preserve and maintain the Recorded Archaeological Monuments and the integrity of their setting within the County.

A desk review and examination of the above documents, confirmed that there are no known recorded archaeological finds or features of cultural importance on Ted O'Donoghue & Son's Ltd. Waste Transfer site.

The following tables detail a full list of cultural heritage sites and features in close to the site.

**Table E.7.3. Features of Cultural Importance (Discovery Series Map No. 86, 87) within a 3km radius of the site**

<b>Structures of Archaeological Interest Within 3km of Ted O'Donoghue and Sons Ltd. Site.</b>			
<b>Structure</b>	<b>Location</b>	<b>Approx. Distance from Ted O'Donoghue and Sons Ltd.</b>	<b>Map Ref. No.</b>
Fulacht Fia	596 648	0.85km	1
Fulacht Fia	570 644	1.85km	2
Fulacht Fia	604 639	1.9km	3
Fulacht Fia	606 657	2.05km	4
Fulacht Fia	607 645	2.1km	5
Fulacht Fia	579 673	2.35km	6
Fulacht Fia	564 641	2.55km	7
Fulacht Fia	604 674	2.7km	8
Fulacht Fia	593 624	2.7km	9
Fulacht Fia	614 652	2.7km	10
Fulacht Fia	615 651	2.75km	11
Fulacht Fia	614 660	2.75km	12
Fulacht Fia	616 650	2.85km	13
Fulacht Fia	616 642	3.0km	14
Fulacht Fia	557 649	3.05km	15
Ring Fort	580 645	0.9km	16
Ring Fort	603 643	1.65km	17
Ring Fort	591 671	2.1km	18
Ring Fort	606 665	2.35km	19
Ring Fort	564 651	2.4km	20
Ring Fort	612 648	2.5km	21
Ring Fort	614 644	2.7km	22
Ring Fort	609 668	2.75km	23
Ring Fort	584 623	2.75km	24
Ring Fort	563 664	2.8km	25
Ring Fort	617 645	3.05km	26
Moated Site	582 647	0.65km	27
Moated Site	577 664	1.75km	28
Graveyard	596 656	1.05km	29
Holy Well	573 636	2.05km	30
Friary	608 653	2.1km	31
Standing Stone	615 643	2.85km	32
Barrow	608 625	3.25km	33

The closest features and items of cultural heritage to the site from the **Cork County Development Plan 2003** are listed in Table E.7.4 below:

**Table E.7.4 List of protected features and buildings closest to Ted O'Donoghue & Son's Ltd.'s site.**

<b>Protected Features Within the Area of Ted O'Donoghue &amp; Son's Ltd. Waste Transfer Site, Co. Cork</b>			
<b>RPS No.</b>	<b>Structure</b>	<b>Map No.</b>	<b>Distance from Ted O'Donoghue &amp; Son's Ltd Site. (km's)</b>
00802	Thatch House	1	6.3
00622	Crossbarry Bridge	2	5.1
00623	Dunkereen House	3	6.3
00624	Annaghmore House, Chimney and Forge	4	5.2
00465	Former St. Mary's Church	5	5.8
00563	Chetwynd Viaduct	6	5.5
pNHA 1249	Ballincollig Cave	1	4.25

Both Tables E.7.3 and E.7.4 are illustrated on Map E.7 and show that there are no known features of architectural, archaeological or historical importance within Ted O'Donoghue & Son's Ltd. site. Furthermore, Ted O'Donoghue & Son's Ltd. is at a sufficient distance away from these sites for operations to have an impact on any of these sites.

In conclusion, the cultural importance of Ted O'Donoghue & Son's Ltd. site and the potential impact of site operations on nearby features of cultural importance are considered to be insignificant.

**ATTACHMENT F**  
**CONTROL & MONITORING**

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## F.1 Treatment, Abatement and Control Systems

The potential environmentally significant air and effluent emissions from the Ted O'Donoghue and Sons Ltd Waste Disposal operations are dust, odours, noise and surface water.

### F.1.1 Dust

Due to the quantity and nature of waste that is handled at Ted O'Donoghue and Sons Ltd Waste Disposal site, there is the potential for dust generation, especially on hardstanding ground and in dry weather through waste unloading, sorting and vehicle movements. Dust deposition monitoring has been carried out at four locations at the site boundary during site operations.

Dust deposition monitoring at the site boundary show that present dust emissions are unlikely to cause a nuisance.

However, Ted O'Donoghue and Sons Ltd Waste Disposal plans to implement the following further mitigation measures in order to ensure that dust emissions will not cause a nuisance beyond the site boundary.

#### *Control measures*

Control measures will include;

- Sprinkling water or applying a fine water mist over dusty waste as its unloaded inside the transfer station building (especially construction and demolition waste). Mist Air details are attached.
- Covering/dampening any external dusty waste stockpiles of construction and demolition waste.
- Sweeping the transfer station building floor regularly and washing down the floor on a regular basis.
- Regularly washing down waste collection vehicles.
- Using a road sweeper on the facility yard during dry weather conditions.
- Other mitigation measures suggested by the EPA.

Site staff regularly clean and sweep the yard throughout the day (as needed). Waste collection vehicles are also regularly washed to remove mud from the tyres/undercarriage. Other mitigation measures suggested by the EPA will be considered.

### F.1.2 Odour

Odours from waste facilities are usually caused by the decomposition of readily degradable organic waste. Ted O'Donoghue and Sons Ltd Waste Disposal currently handles approximately 8,400 tonnes of domestic waste or refuse at the facility. This waste is presented by the householder in either wheelie bins or bags and is collected using REL trucks (bin lorries) by other waste contractors (Wiser Bins Ltd, Nyhan Waste Disposal and Instant Waste Disposal Ltd)

A table of the typical composition of household waste is given below (taken from the **National Waste Database Factsheet Series 2001 issued by the EPA**).

Household waste	
Material	Composition %
Organics	32.2
Paper	22.3
Glass	4.4
Plastic	11.6
Ferrous metals	2.1
Aluminium	0.9
Other metals	0.7
Textiles	3.7
Others	22.1

Therefore the organic fraction of this waste accounts for 32.2% of the total breakdown of the waste. It is the organic fraction that may give rise to mal-odours at the facility.

Nevertheless, for waste types such as dry, solid, non-hazardous commercial, industrial, household white goods and construction and demolition waste these usually contain very little biodegradable material, and odours are not generally an issue.



**Control measures**

All domestic waste will be accepted at the transfer station building only and tipped on the concrete floor indoors. This waste will then be loaded using a teleporter to a bulk ejector trailer. When the ejector trailer is full the waste will be sent to landfill and/or recovery processes. All waste tipping, loading and temporary storage occurs indoors in the transfer station building only. Waste loads arriving at the site are only temporarily stored prior to off-site removal. There will be no waste disposal occurring at the facility.

The nearest dwellings to the site are tabulated below:

Map ref number	Residential Dwelling name	Location and distance in relation to the site
1	O'Donoghue - applicant	100 west of the site
2	Mc Carthy	103 west of the site
3	O'Connor	88 west of the site
4	Ford	188 north-west of the site
5	Rodgers	355 north, north-west of the site
6	Quaid	366 north, north-west of the site
7	Cussen	345 north of the site
8	Walsh	411 north of the site
9	Downey	230 south-west of the site
10	Murphy (Senior)	263 south-west of the site
11	Murphy (Esquire)	288 south-west of the site
12	Conway	300 south-west of the site
13	O'Mahoney	477 south-west of the site

Any potential odours (should they leave the site) will be carried along with the prevailing wind in that direction. After a review of wind directions measured at Cork Airport (approximately 7km east of the waste management site) it was discovered that the prevailing wind is south westerly, followed by southerly and westerly breezes. Therefore the Ford residence is most prone to experiencing wind from the direction of the waste management site (southerly) as wind coming from a south west and west direction will not be passing over any residences within a 500m radius of the site. To date there has been no complaints received from any neighbours in relation to odours from the Ted O'Donoghue and Sons Ltd Waste Disposal site.

Any potential leachate or liquid spills arising from the organic fraction of domestic waste in the transfer station building, will be collected internally using the blind sump and temporarily stored prior to tankering off-site to a licensed treatment facility. De-odourising chemicals e.g. disinfectants, can be used in the transfer station if needed to eliminate potential odours from this area from time to time. The overall volume of expected liquids generated in this area will be small due to the building being fully roofed and thus avoiding the mixing of rainwater with occasional small liquid volumes inside the transfer station.

### F.1.3 Noise

A noise survey was carried out at the Ted O'Donoghue and Sons Ltd Waste Disposal site on the 29<sup>th</sup> of July 2004 as part of the waste license application. The noise survey was carried out during normal site operations.

The EPA guidelines stipulate a day-time Laeq of 55dBA and a night-time Laeq of 45dBA at noise sensitive locations. The noise survey shows that the Laeq noise levels at the site boundaries were between 47.5 dBA and 72.6 dBA Laeq. Noise levels at the nearest sensitive locations were recorded as being between 43.2 dBA and 63.0 dBA Laeq. It should be noted that the noise reading measured at the nearest noise sensitive location (McCarthy and O'Connor residences which are approximately 120 meters from the center of the waste management site) was 43.2dBA Laeq.

Noise emissions from site operations were **not** deemed to have a nuisance effect on the surrounding environment. Furthermore, the nature and future scale of site operations is not expected to have an overall increase in noise emissions in the area.

#### Control measures

The main potential noise sources from Ted O'Donoghue and Sons Ltd Waste Disposal operations includes;

- Waste vehicle movements
- Waste handling (tipping, sorting, baling, shredding, trommelling and moving)

The highest noise level at the noise sensitive locations (63.0 dBA Laeq) can be associated completely with passing traffic as opposed to waste activities at the waste management site. The remainder noise sensitive locations all had noise readings below 55 dBA Laeq which is within the EPA BATNEEC Guidance Note relating to noise from industrial sites.

However in order to ensure that there will be no potential nuisance noise conditions coming from the site due to future site operations, Ted O'Donoghue and Sons Ltd Waste Disposal proposes the following control measures:

These measures will include;

- Waste acceptance, tipping and sorting all occurring inside the transfer station building. The roller shutter door of this building will be full enclosed during trommelling. All waste sorting, trommelling, baling, shredding and moving will occur inside this building.
- Cardboard and paper baling and storage of the bales operations will remain indoors at the transfer station.
- The site boundaries will remain as high berms and screened sufficiently with foliage to mitigate any noise and visual aspects from the waste management site.
- A diesel plant is used for electricity generation at the site to power large machines (shredder and trommel). This plant will only be used on an intermittent basis.
- Any other mitigation measures proposed by the EPA or Planning Authority will be considered.

#### F.1.4 Discharge to Surface Water

The potential impacts to surface water from the Ted O'Donoghue and Sons Ltd Waste Disposal site are minimal.

In summary, surface water discharge impacts from the site will be as follows:

- Surface water runoff from the proposed concreted site yard will flow via gullies which direct the flow into a 180 m<sup>3</sup> retention tank (to detail) before discharge to an open land drain in the direction of the south-east corner of the site. A Class 1 interceptor unit (oil separator and sludge trap, 2m<sup>3</sup> capacity) will be present between the retention tank and the land drain to treat the water discharge for oils and silts.
- Roof rainwater from the transfer station building will be directed to a 45,500 litre capacity holding tank (acting as a reservoir for washing water and a fire hydrant source). Any subsequent overflow from this holding tank will be diverted to soak-away in the direction of the south-east corner of the site.
- Roof rainwater run-off from the proposed administration building and the repair workshop will be directed separately to their own soak-away systems.

- A waste water treatment system is proposed on site to deal with domestic sewage. The effluent from this plant is then subject to release to a percolation area (soak-away) in the direction of the west boundary of the site (left of the site entrance).
- All effluent generated at the truck wash bay will be treated by a 3 stage interceptor unit (oil separator and sludge trap) prior to discharged to soak-away in the direction of south-east corner of the site.
- All internal wash down liquids and any potential spills inside the transfer station will be collected in a blind sump area. These liquids can be pumped out at required intervals and sent off-site for treatment a licensed treatment facility.

### ***Control measures.***

Proposed control measures will include the bulleted items referenced above.

Any potential firewater run off from the site could be a potential source of surface water contamination. However, due to the nature of the activity being carried out on site and the types of waste handled the risk of fire is low. There will be minimal quantities of hazardous, flammable or dangerous chemicals stored on site (these will be stored in the workshop / garage building on site). The small maintenance garage area is located inside the yard area for routine vehicle servicing. Any spills inside this area will be contained internally. All major repairs will be carried out off-site.

Ted O'Donoghue and Sons Ltd Waste Disposal intends to implement an environmental management system (EMS) for the site. As part of the EMS, the emergency response procedure will include provision for protecting the open drain and any percolation areas from firewater run off in the unlikely event of a fire occurring at the site.

Ted O'Donoghue and Sons Ltd Waste Disposal will also include a manual shut off valve on the 180 m<sup>3</sup> retention tank that can be closed off in the event of a major spill or firewater being generated on the site. Containment booms and drain covers (contained in a spill kit barrel to be situated close by the retention tank) will be used to further contain the offending liquids above ground. This will further prevent contamination of the land drain from the site.

### **F.1.5 Discharges to Sewer**

There will be no discharge to sewer from the facility. All domestic sewage from the facility will be treated by a waste water system with percolation area and will be maintained in accordance with the manufacturer's specifications.

### **F.1.6 Climate**

Due to the size, nature and emissions from Ted O'Donoghue and Sons Ltd Waste Disposal, there are no expected impacts on the climate on the area. Therefore no control measures are planned.

### **F.1.7 Cultural Heritage**

There are a number of important sites within 3 km of the site. Ted O'Donoghue and Sons Ltd Waste Disposal operations will not impact on any of these features. The site is currently operational and being used as a waste management facility. There are no archaeological finds/features on the site. It is expected that any archaeological or important items would have been removed or recorded at the time the site was established approximately 15 years ago. There are no control measures planned.

### **F.1.8 Ecology**

The site covers an area of approximately 3.362 acres (13,606m<sup>2</sup>). Approximately 10% of the site is covered with concrete and buildings and the remainder is a hardstanding covered surface. The site is located approximately 6.5 km south-west of Bishopstown, Cork and is surrounded by farmland with some residential dwellings nearby.

Site ecology consists of some hedgerow and grassland species on the site. Ted O'Donoghue and Sons Ltd Waste Disposal operations have no significant impact on the ecology of the surrounding area. Vermin are controlled using a specialist contractor, on a monthly basis. There are no further control measures planned.

### **F.1.9 Human Beings**

Ted O'Donoghue and Sons Ltd Waste Disposal have operated the waste management facility at Knockpoge, Waterfall for over 15 years (planning permission was obtained in 5<sup>th</sup> November 2001 for a 'waste transfer and recovery station'). In this time there have been no complaints from neighbours.

Traffic movements to the site do not have a negative impact on the traffic movements in the surrounding area. Noise monitoring has shown that noise emissions from the facility do not have a negative impact on the surrounding area especially at the nearest dwellings to the site. Consequently, Ted O'Donoghue and Sons Ltd Waste Disposal operations do not have a negative impact on the local community.

The population of County Cork in 2002 was 324,700 persons excluding Cork City and this figure is expected to grow to 365,300 by 2011. During the same time, the number of households is expected to grow to 132,550. This projected growth, should it take place, is planned to take place based on the Cork Area Strategic Plan and the North and West Cork Strategic Plan. The largest population centre in the county is Cork City and is located approximately 6.5km south-west of the Ted O'Donoghue and Sons Ltd Waste Disposal site.

The same development plan also proposes a further steady increase in county population. With an increase in population there will be an increase in waste generation. According to the **National Waste Database Factsheet Series 2001** issued by the EPA the average per capita household waste generation in 2001 was 375kg. A further investigation on a county basis showed that County Cork had a household waste per capita value of 361kg in 2001 and Cork City had a household waste per capita value of 458kg for the same year.

Ted O'Donoghue and Sons Ltd Waste Disposal proposed site will manage and recycle much of this waste. Therefore Ted O'Donoghue and Sons Ltd Waste Disposal will have an overall positive impact on the population of Cork and the City. The proposed site operations will also have a positive contribution to the Cork Waste Management Plan.

#### ***Control measures.***

The Ted O'Donoghue and Sons Ltd Waste Disposal facility has an overall significant positive human impact. These include the provision of jobs, the collection, removal, recovery and disposal of up to 15,000 tonnes/year of waste from County Cork and Cork City.

Ted O'Donoghue and Sons Ltd Waste Disposal's operations provide employment for local people, provide a public health service by collecting waste and help the Local Authority to meet the regional (and national) waste recycling targets.

Potential adverse impacts on local residents and the environment include dust, odour, noise, litter and vermin. These have been addressed in this application.

Dust, odour, vermin and noise impacts have been addressed elsewhere in this application. These impacts will be managed and controlled by Ted O'Donoghue and Sons Ltd Waste Disposal to reduce the impact on local residents and surrounding environment. Litter will be controlled by ensuring good house keeping measures at the site, handling waste inside the transfer station building, covering waste skips and daily litter patrols at the site boundary. There are no further control measures planned.

#### **F.1.10 Hydrogeology**

Presently most of the Ted O'Donoghue and Sons Ltd Waste Disposal site surface is hardstanding with a small area covered in concrete (mostly the areas under roof such as buildings). The company does not dispose of waste on site. There have been no detailed groundwater site investigations carried out, however a well exists at the site for water supply and is approximately 30m in depth. A fully bunded diesel fuel storage tank is in place at the facility and is located away from the site entrance and vehicle turning areas.

After discussions with Cork County Council (Inniscarra Laboratory, Inniscarra, Co Cork) it was confirmed that there was no data available to the Council for groundwater or private wells in the area.

#### ***Control measures***

As part of future site development plans, Ted O'Donoghue and Sons Ltd Waste Disposal intends to extend the concrete areas of the site to cover all areas where waste handling and storage will occur. All site machinery and road vehicles (skip trucks) will be fuelled on site. These diesel fuel storage tanks which are bunded will be tested to ensure their sound structure and suitable capacity for the tanks contained inside on a periodic basis. A proposed waste quarantine area for liquid wastes will also be fully bunded at the facility yard. Proposed site drainage will ensure that all storm water run-off from concreted areas will be diverted to soak away via an interceptor unit.

These site developments will further help to reduce the potential impact of the activity on ground and groundwater quality. There are no further mitigation measures planned.

### F.1.11 Landscape

Ted O'Donoghue and Sons Ltd Waste Disposal is situated approximately 6 km from Bishopstown, south west of Cork City in a rural setting. The site itself is located behind the O'Donoghue family residence. The entrance to the waste management facility is approximately 5 meters off the main road and the access road to the site is approximately 125 metres long and 6 metres wide.

The site comprises of an existing transfer station building, small workshop building (for routine maintenance of the waste collection vehicles), weighbridge and concrete storage bays. The surface is a mixture of hardstanding and concrete in places. An administration building is proposed for the site which will function as a reception, record keeping, canteen and toilets building. Further concrete storage bays and a fully concreted yard area are also proposed. The waste management site has been in operation for approximately 15 years. The site entrance is appropriate to the nature and scale of operations.

#### *Control measures.*

Presently the front of the site and the remaining western boundary of the site consists of a mixture of mature evergreen trees and a soil berm (approximately 3 metres high). This landscaping effectively screens the site from view from the main road and the two nearest residential units west of the site (see plate 1).

The northern boundary of the site consists of a berm wall (approximately 3 metres high) constructed of soil and planted with some shrubs and grasses. A metal post and chain link fence (approximately 2 metres high) is positioned outside of the berm and separates the site from the immediate neighbouring land. A view was taken from the field near Ford's residence and illustrates the actual screening measures taken and the net effects (see plate 2).

The southern boundary of the site consists of a mature hedgerow and this effectively separates this portion of the site from the farmland to the immediate south. The site is slightly elevated in comparison to the land south and therefore this factor adds to the increased screening of the site from view by the public (see plate 3).

The east boundary of the site is facing agricultural land only with no residences in that immediate direction. This boundary consists of a metal post and chain link fence (approximately 2 metres high) and an electric cattle fence at the south east corner of the boundary. A view was taken from the land east of the site (plate 4) and shows the view from this direction looking onto the waste management site. A summary of the plate views are illustrated on Map F.1.11.



Proposed control measures include:

- Maintaining the existing screening along the boundaries of the site which shall include planting foliage appropriate to the nature of the surrounding area.
- Other mitigation measures suggested by the EPA will be considered.

## F.2 Air Monitoring

### F.2.1 Dust

Proposed Dust deposition monitoring will be based on the Bergerhoff method, 'Measurement of Dustfall Using the Bergerhoff Instrument (Standard Method)' VDI 2119.

The following table outlines the proposed dust monitoring programme for Ted O'Donoghue and Sons Ltd Waste Disposal. Monitoring points are shown on the attached Figure F.1.1

**Table F.2.1 Proposed Dust Monitoring Programme**

Ref	Monitoring Location	Parameter	Proposed Frequency	Sampling Equipment/Analysis
A2-1	at site entrance	mg/m <sup>2</sup> /hr	Bi-annually	Dust deposition by Bergerhoff method
A2-2	site boundary	mg/m <sup>2</sup> /hr	Bi-annually	Dust deposition by Bergerhoff method
A2-3	site boundary	mg/m <sup>2</sup> /hr	Bi-annually	Dust deposition by Bergerhoff method
A2-4	site boundary	mg/m <sup>2</sup> /hr	Bi-annually	Dust deposition by Bergerhoff method

Dust monitoring and analysis will be carried out by a suitably qualified external consultant and laboratory. Monitoring results will be recorded and submitted in a format found to be satisfactory to the EPA. The report will highlight any breaches of trigger levels or other limit emission values. In the case of any breach of emission limit, Ted O'Donoghue and Sons Ltd Waste Disposal will investigate the cause of the breach and attempt to rectify the situation.

It is expected that dust emissions from the site will be effectively controlled by proposed control measures described in section F.1.1.

### F.2.2 Odours

Odours may arise from the facility due to the handling of industrial/commercial municipal solid waste which may contain organic fractions. Odours generally become a problem if residents take issue to certain smells. For this reason odour analysis is carried out by a subjective method called olfactometry. However, as detailed in attachment F.1.2 odours are not expected to be a problem with the site and historically have not been an issue with the site. For this reason Ted O'Donoghue and Sons Ltd Waste Disposal do not propose to carry out odour monitoring.

Nevertheless, in the case of any odour problem arising, Ted O'Donoghue and Sons Ltd Waste Disposal will investigate the cause of the odour problem and attempt to rectify the situation.

It is expected that potential odour from the site will be effectively controlled by mitigation measures described in section F.1.2.

No odour monitoring is proposed.

### F.3 Surface Water Monitoring

As part of future site developments, Ted O'Donoghue and Sons Ltd Waste Disposal will install a sampling point downstream of the storm water interceptor to ensure that regular surface water sampling can occur and the quality of the water discharges are monitored.

The following table outlines the Ted O'Donoghue and Sons Ltd Waste Disposal proposed surface water monitoring programme. Monitoring points are shown on the attached Figure F1.1

**Table F.3 Proposed Surface Water Monitoring Programme**

Ref	Monitoring Location	Parameter	Proposed Frequency	Sampling Equipment/Analysis
SW1	Discharge downstream of retention tank and flowing to land drain.	pH BOD COD Ammoniacal nitrogen Chloride Suspended solids Conductivity Minerals/oils Oils, fats & greases Temperature	Quarterly	Standard methods acceptable to the EPA

#### F.4 Sewer Discharge Monitoring

Ted O'Donoghue and Sons Ltd Waste Disposal do not discharge any effluent or sewage from the site to sewer. All domestic sewage generated on-site will be treated by a waste water treatment system with a subsequent percolation area.

Consequently, Ted O'Donoghue and Sons Ltd Waste Disposal do not propose to carry out sewer discharge monitoring.

#### F.5 Groundwater Monitoring

Presently there is one borehole installed at Ted O'Donoghue and Sons Ltd Waste Disposal site and is used as a municipal water source (the supply being the underlying groundwater).

Hazardous or liquid wastes will not be accepted at the facility. A fully bunded storage tank is also in place which effectively acts as a measure for groundwater protection (as detailed in F.1.10). It is proposed to cover the complete site area where waste acceptance, processing and temporary storage occurs with a concrete apron. In addition there will be drainage gullies and interceptors in place to treat the rainwater run-off from yard areas. Furthermore there is no waste disposal at the Ted O'Donoghue and Sons Ltd waste management site.

Nevertheless, in order to demonstrate that there is no pollution to the underlying groundwater as a result from site activities Ted O'Donoghue and Sons Ltd Waste Disposal proposes to carry out groundwater monitoring annually.

**Table F.5 Proposed Groundwater Monitoring Programme**

Ref	Monitoring Location	Parameter	Proposed Frequency	Sampling Equipment/Analysis
GW1	Existing groundwater well (tapped for municipal supply)	pH BOD COD Ammoniacal nitrogen nitrates Chloride Suspended solids Conductivity Total phenols DROs/PROs Ortho phosphates Temperature	Annually	Standard methods acceptable to the EPA

### F.6 Noise Monitoring

Proposed noise emissions monitoring will be based on the International Standard ISO 1996/1 'Acoustics – Description & measurement of environmental noise', using appropriate instrumentation.

The following table outlines Ted O'Donoghue and Sons Ltd Waste Disposal's proposed noise monitoring programme. Monitoring points are shown on the attached Figure F1.1

**Table F.6 Proposed Noise Monitoring Programme**

Ref	Monitoring Location	Parameter	Proposed Frequency	Sampling Equipment/Analysis
N1	At site entrance	LA <sub>eq</sub> (dB)*	Annually	ISO 1996/1 (as above)
N2	South east corner of site	LA <sub>eq</sub> (dB)*	Annually	ISO 1996/1 (as above)
N3	North west corner of site	LA <sub>eq</sub> (dB)*	Annually	ISO 1996/1 (as above)
N4	North east corner of site	LA <sub>eq</sub> (dB)*	Annually	ISO 1996/1 (as above)
N5	West of site at nearest residences	LA <sub>eq</sub> (dB)*	Annually	ISO 1996/1 (as above)
N6	At nearest residence south west of site	LA <sub>eq</sub> (dB)*	Annually	ISO 1996/1 (as above)
N7	At nearest residence north west of site	LA <sub>eq</sub> (dB)*	Annually	ISO 1996/1 (as above)

\* = L5, L10, L50, L90, LA<sub>eq</sub>, Lmax and Lmin to be measured.

Noise monitoring and analysis will be carried out by a suitably qualified external consultant and laboratory. Monitoring results will be recorded and submitted in a format that is to the satisfaction of the EPA. The report will highlight any breaches of trigger levels or other limit emission values. In the case of any breach of emission limit, Ted O'Donoghue and Sons Ltd Waste Disposal will investigate the cause of the breach and strive to rectify the situation.

It is expected that noise emissions from the site will be effectively controlled by existing and proposed measures described in section F.1.3 of this application.

#### **F.7 Meteorological Data Monitoring**

The Ted O'Donoghue and Sons Ltd Waste Disposal facility is not expected to have an impact on the local climate. However, should Ted O'Donoghue and Sons Ltd Waste Disposal receive complaints from neighbours regarding odours etc, they will take into account meteorological data e.g. wind direction, speed, weather conditions etc during investigations into the cause of the complaint. Data will be obtained from the meteorological office in Glasnevin, Dublin 9 as required. This data can also be used in the unlikely event of a fire at the site. Apart from the above, Ted O'Donoghue and Sons Ltd Waste Disposal do not propose to carry out meteorological data monitoring, or install a weather station at the facility.

### F.8 Ecological Monitoring

Approximately 10% of the site is covered with concrete and the remainder is hardcore surfaced land. The site is located approximately 6.5 km south west of Bishopstown, Cork and is surrounded by a mixture of residential and farming land. There is no flora and fauna of any significance on the site. Therefore, Ted O'Donoghue and Sons Ltd Waste Disposal operations do not have a significant negative impact on the ecology of the area.

Ted O'Donoghue and Sons Ltd Waste Disposal do not propose to carryout further ecological monitoring.

The Ted O'Donoghue and Sons Ltd Waste Disposal proposed monitoring programme, location points and grid references are summarised below.

Monitoring Point	Description	Grid Reference
A2-1	Dust	E158592 N065181
A2-2	Dust	E158779 N065271
A2-3	Dust	E158696 N065367
A2-4	Dust	E158753 N065376
N1	Noise	E158592 N065189
N2	Noise	E158779 N065279
N3	Noise	E158701 N065359
N4	Noise	E158748 N065370
N5	Noise	E158639 N065320
N6	Noise	E158517 N065078
N7	Noise	E158599 N065499
Sw1	Surface water to land drain	E158779 N065271
Gw1	Ground water well (at site and tapped for municipal use)	E158707 N065258

A summary of all proposed monitoring locations are shown on the attached Figure F.1.1