PROJECT DESCRIPTION,

ORGANIC WASTE COMPOSTING FACILITY,

MILTOWNMORE,

FETHARD,

COUNTY TIPPERARY

Prepared For: -

Miltown Composting Ltd.,
Miltown More & Moorstown,
Fethard,
County Tipperary

Prepared By: -

O' Callaghan Moran & Associates,
Granary House,
Rutland Street,
Cork.

21st May 2009

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TABLE OF CONTENTS

PAGE

1. INTRODUCTION 1

2. WASTE MANAGEMENT POLICY 2

2.1 WASTE MANAGEMENT POLICY 2
2.1.1 National Policy 2
2.1.2 Regional Policy 3
2.2 NEED FOR THE DEVELOPMENT 3

3. SITE DESCRIPTION 4

3.1 SITE LOCATION 4
3.2 LAYOUT 4
3.3 SITE HISTORY 4
3.4 SURFACE WATERS 7
3.5 GEOLOGY AND HYDROGEOLOGY 7
3.5.1 Geology 7
3.5.2 Hydrogeology 7
3.5.3 Groundwater Quality 7
3.6 SURROUNDING LAND USE 8
3.7 CULTURAL HERITAGE 8

4. FACILITY DESIGN 10

4.1 OVERVIEW 10
4.2 SITE ACCESS 10
4.3 SITE SERVICES 10
4.4 SITE LAYOUT/BUILDINGS & HARDSTANDING 11
4.5 PROCESSING AREAS 11
4.5.1 Shed 1 11
4.5.2 Sheds 2 & 3 12
4.6 ODOUR CONTROL 13
4.7 SURFACE WATER 15
4.8 LEACHATE/WASTEWATER 15
4.9 FUEL / OIL STORAGE 16
4.10 SECURITY FENCING 16

5. OPERATIONS 17

5.1 OPERATIONAL & WASTE ACCEPTANCE HOURS 17
5.2 STAFF 17
5.3 FACILITY ACCESS 17
5.4 OPERATIONAL PROCEDURES 17
5.5 WASTE TYPES AND VOLUMES 18
5.6 PLANT & MACHINERY 19
5.7 WASTE ACCEPTANCE PROCEDURES 19
5.8 COMPOSTING PROCESS 20
5.8.1 Waste Reception Areas 20
5.8.2 Thermophilic Stage 20
5.8.3 Mesophilic Stage 20
5.9 COMPOST QUALITY REQUIREMENTS 21
5.10 COMPOST QUALITY TESTING 22

5.11 WASTES GENERATED 22
5.11.1 Solid Waste Types & Volumes 22
5.11.2 Leachate 23
5.11.3 Waste Oils / Oily Water 23
5.11.4 Waste Disposal / Treatment 23
5.12 ENVIRONMENTAL NUISANCE 24
5.13 SAFETY AND HAZARD CONTROL 24
5.14 CONTINGENCY ARRANGEMENTS 24
6. EMISSION ASSESSMENT & CONTROL 25
6.1 SURFACE WATER 25
6.1.1 Assessment 25
6.1.2 Control Measures 25
6.2 SOIL AND GROUNDWATER 26
6.2.1 Assessment 26
6.2.2 Control Measures 26
6.3 LEACHATE/WASTEWATER 27
6.3.1 Assessment 27
6.3.2 Control Measures 27
6.4 NOISE 28
6.4.1 Assessment 28
6.4.2 Control Measures 28
6.5 DUST & VEHICLE EXHAUSTS 28
6.5.1 Assessment 28
6.5.2 Control Measures 29
6.6 ODOURS 29
6.6.1 Assessment 29
6.6.2 Control Measures 29
6.7 BIOAEROSOLS 30
6.7.1 Assessment 30
6.7.2 Control Measures 30
7. ENVIRONMENTAL MONITORING 31
7.1.1 Dust 31
7.1.2 Noise 31
7.1.3 Bioaerosols 31
7.1.4 Groundwater 31
7.1.5 Surface Water 31

APPENDIX 1 - Waste Permit/Animal By-Products Approval

APPENDIX 2 - Geology/Hydrogeology

APPENDIX 3 - Waste Permit Annual Environmental Report 2008

APPENDIX 4 - Archaeological Assessment

APPENDIX 5 - Leachate Storage Tank Integrity Tests

APPENDIX 6 - Proposed Sanitary Wastewater Treatment System

APPENDIX 7 - Potential Wastes for Acceptance

APPENDIX 8 - Operational Procedures

1. INTRODUCTION

The Milltown Composting Ltd. (Milltown) in-vessel composting facility at Milltown More, Fethard, County Tipperary operates under a Waste Permit (Ref. WP 019 02) issued by South Tipperary County Council, a copy of which is included in Appendix 1. The facility also has an approval issued by the Department of Agriculture Fisheries and Food (DAFF) to operate as a composting plant accepting Animal By-Products, a copy of which is also included in Appendix 1.

The facility began operation in 2004 and originally had the capacity to process up to 10,000 tonnes annually. The predominant materials accepted was fines from the treatment of mixed municipal solid waste, with smaller amounts of non-hazardous industrial and municipal wastewater sludges, and off specification animal feed. The actual amount processed depends on market conditions and in 2008 the facility accepted 6,320 tonnes.

The roll out of source segregated collection of household organic waste in the South East Region, along with impending introduction of source segregation for commercial activities requires a significant expansion in biological treatment capacity. Milltown has identified a range of potential customers and has decided to increase capacity to 24,500 tonnes/year.

The expansion in capacity requires Milltown to obtain a Waste Licence from the Environmental Protection Agency (Agency), as the proposed total annual waste intake will be greater than 10,000 tonnes threshold set in the Waste Management (Facility Permit) Regulations S.I. No 821 of 2007, as amended.

This document was prepared as part of the Waste Licence application. It describes the site setting; facility design; types and volumes of materials accepted, and the handling procedures. It presents information on the emissions and associated potential environmental impacts, and details of the proposed mitigation measures to either eliminate, or minimise those impacts.

2. WASTE MANAGEMENT POLICY

2.1 Waste Management Policy

2.1.1 National Policy

National policy on waste management is currently subject to review and while this may result in changes to the preferred waste management technologies to be applied at a regional levels, it most unlikely that there will be any significant changes to the overall approach to waste management, as set out in the Department of the Environment Heritage and Local Government's policy statement of September 1998, "Changing Our Ways". In this document the Government affirmed its commitment to the EU hierarchy of waste management. In order of preference this is: -

- Prevention
- Minimisation
- Reuse
- Recycling
- Energy Recovery
- Disposal.

The policy statement was based on and is supported by EU legislation (Landfill Directive 99/339/EC) that requires the diversion of organic wastes from landfill to alternative waste treatment facilities in accordance with a defined timeframe.

"Changing our Ways" recognised that the achievement of landfill diversion targets requires the development of alternative waste recovery facilities, including composting. The subsequent government policy statement 'Preventing and Recycling Waste - Delivering Change' (2002) emphasised the objective of developing feasible biological treatment (including composting) facilities.

The most recent overarching policy statement 'Waste Management – Taking Stock and Moving Forward' 2004, confirmed Irelands national policy approach remains *'grounded in the concept of integrated waste management, based on the internationally recognised waste hierarchy, designed to achieve, by 2013, the ambitious targets set out in Changing Our Ways'.*

The National Strategy on Biodegradable Waste, published in 2006, presents Government policy in relation to diverting biodegradable wastes from landfill in accordance with the EU Landfill Directive. The document states *'For biodegradable waste that must be collected and managed, materials recycling and biological treatment are favoured, since they recover the material for new beneficial uses.'*

A review of national waste management policy is currently on-going, with a report due in Summer 2009. While it is not possible to pre-judge the outcome, it is considered, based on the presentations made at consultative group meetings held by the consultants conducting the review, that it will identify the need to promote the development and expansion of biological treatment so as to meet EU targets on the diversion of biodegradeable waste from landfill.

2.1.2 Regional Policy

Regional waste management policy is set out in the South East Region Waste Management Plan 2006-2001. The Plan anticipates that by 2011 approximately 60,000 tonnes of recovered biological waste will be recovered annually.

In relation to organic waste it is a policy objective to encourage the provision of biowaste facilities for segregated MSW and non MSW biowastes and promote the use of green waste as an amendment material in larger scale treatment plants. While the Plan states it is not policy to support the further establishment of smaller scale biological facilities (annual capacity less than 25,000 tonnes), it recognises that a number of small facilities currently operate in the region and that this will not change.

2.2 Need for the Development

The proposed expansion in capacity is designed to meet the increasing demand for the biological treatment capacity at national level and particularly in the South East and adjoining regions. This demand is driven by EU, national and regional waste policy objectives.

The Joint Waste Management Plan for the South East Region recognises that the expansion the existing biological treatment capacity in the Region is required to allow the progressive roll-out of source separated waste collection services, to both the domestic and commercial sectors.

The expansion will assist in addressing the infrastructural deficit that currently restricts the biological treatment within the South East and adjoining regions, and thereby contribute to achieving EU and national recovery targets and reducing the volumes of biodegradable waste disposed to landfill in accordance with the EU Landfill Directive.

3. SITE DESCRIPTION

3.1 Site Location

The site is located in the townland of Miltownmore, approximately 6 km to the east of Fethard and 10 km to the south west of Cashel, as shown on Figure 3.1. The site is accessed by a private road off the Rosegreen to Fethard third class public road.

3.2 Layout

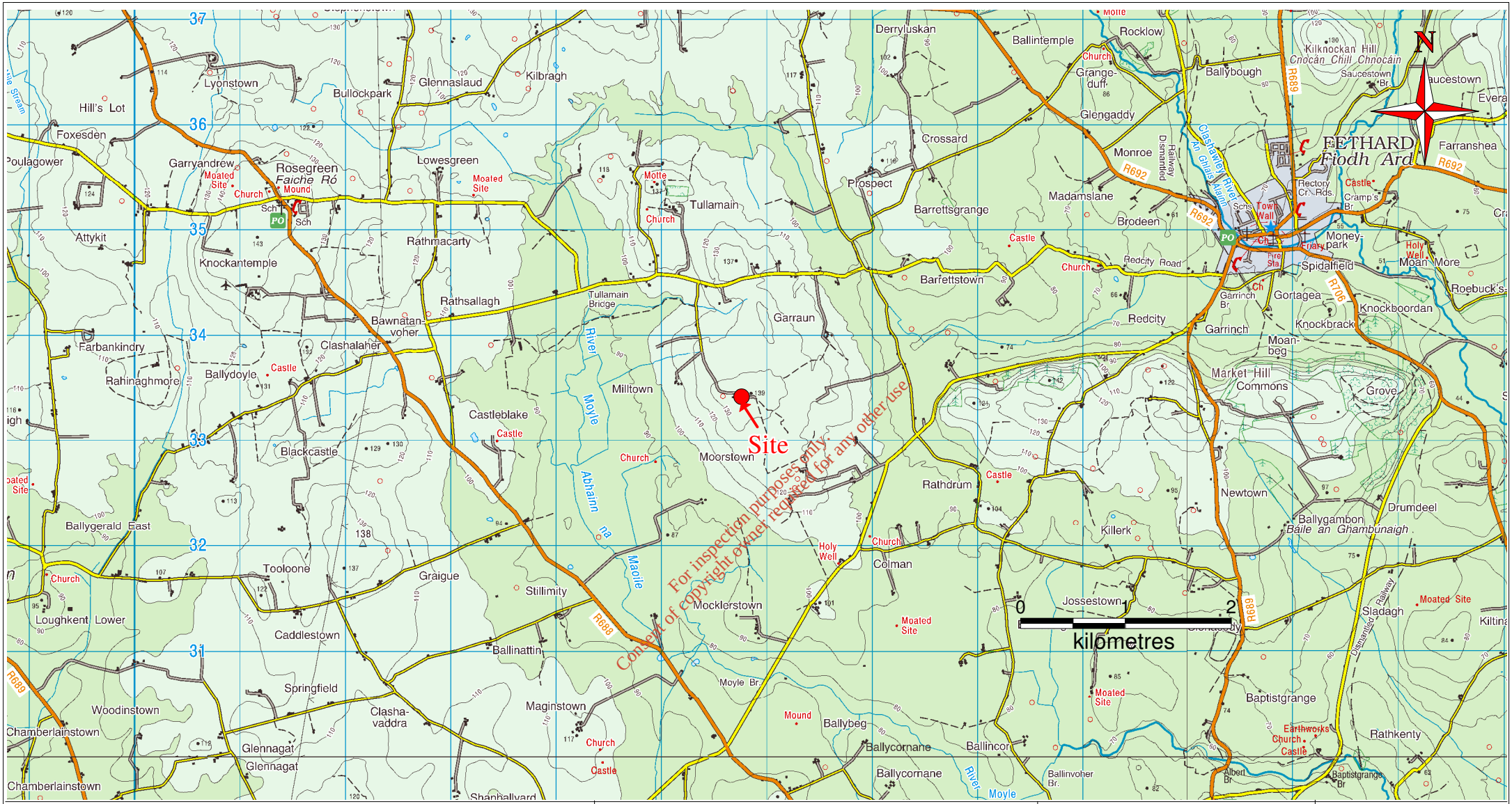
The site layout is shown on Figure 3.2. The site encompasses approximately 5.9 hectares. It is at an elevation of approximately 139m Ordnance Datum (OD) and slopes gently to the east from a high point in the west.

It is occupied by the three main composting buildings -Sheds 1, 2 and 3- paved open yards; weighbridge, office; canteen/changing room; storage shed; wetlands, biofilter and former cattle sheds. The base for a proposed lined slurry storage lagoon is located to the west of the cattle sheds and is currently used to store building materials. The area to the north of the shed is undeveloped and formerly used for animal grazing. The re is a series of constructed wetlands in the south west of the site.

3.3 Site History

The site was originally used for agricultural purposes. The cattle sheds and Shed 1 were originally constructed to house pigs, cattle, meat and bone meal and animal feed. In 2004 South Tipperary County Council granted planning permission and a Waste Permit for composting (in-vessel and maturation) to be carried out in Shed 1.

In 2007 Miltown moved the maturation process to Sheds 2 and 3. In January 2008 there was a fire at the site, when the compost turner went on fire. The turner was destroyed and the fabric of Shed 3 was damaged. The Council issued a revised Waste Permit in May 2008 and this is valid until May 2011. In March 2009 the Council granted planning permission for the retention of the offices, canteen/changing room, underground leachate storage tanks, and weighbridge.



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environmental management for business

CLIENT

Miltown Composting Systems

TITLE

Site Location Map

DETAILS

O.S. Licence Agreement Number AR 0038709

Ordnance Survey Ireland
Government of Ireland

FIGURE No.

3.1

SCALE

1:50,000

LEGEND
Direction of Roofwater Flows
Water course
Storm Water Routes
Downpipe
Direction of Effluent Flows
Effluent Collection Routes
Gully
Spot Levels

AN3
Site Notice Location
AD3
AN2
AD1
AMW1
AMW3
AN1
AMW2
AD2
SW1
A1

Existing Road access to Sheds 2 & 3
Steeldeck Weighbridge
Site Boundary
Leachate Tank
Permanent Fence
Concrete Yard 2
Slatted Cattle Shed
Concrete Yard 1
Slatted Cattle Shed
Leachate Tank
Paved Roadway and Parking Area
Shed 1
Shed 2
Shed 3
Concrete Yard 3
Earthen Bank Lagoon
Earth Bank
Wetlands
Storage Shed
Container
Biofilter E1
Waste Water Treatment System
Stormwater Flow
Berm
Compost Bay
Weighbridge Area
Bio Filter
Septic Tank
Percolation Area

Unspecified waste only
Contaminated waste
Not for any other use.

83.36m
64.32m
53.60m
49.94m
17.06m
11.01m
9.75m
12.41m
21.05m
10.80m
17.41m
16.88m
R10.00m
22.20m
18.27m
11.06m
19.27m
28.06m
47.95m
55.33m
53.66m
73.40m
96.30m
43.78m
42.52m
20.39m
24.00m
16.13m
9.60m
7.70m
13.65m
18.71m
12.60m
35.00m

138.10
138.70
140.05
140.23
140.19
140.20
140.15
140.28
140.88
140.235
139.30 TBM
139.60 TBM
135.20
135.25
135.6
136.24
136.80
135.32
137.305
137.50
136.70

12-11-08

N
W
E
S

RGE
Mooresfort
Lattin
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Phone 062 55385
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Title: Site plan of Milltown Composting Ltd, Fethard Entire Complex Layout
Date: March 08
Scale: 1/1,000 @ A3
Drawing No: Figure 3.2
Drawn By:

3.4 Surface Waters

The site lies within the catchment of the River Moyle, which is approximately 1.6 km to the west of the site. An unnamed tributary of the Moyle, approximately 1 km south west of site boundary (Ref. Figure 3.1), is the closest surface water course to the site. The facility is located at a local high point with falls to the west, south and north. Drainage from the operational area is towards the west and south west to constructed wetlands. Drainage from the undeveloped fields north of the operational area is to the north.

3.5 Geology and Hydrogeology

The local geological and hydrogeological conditions were established from a review of databases maintained by the Geological Survey of Ireland (GSI) and the logs of groundwater monitoring wells installed at the site. Maps showing the subsoil distribution, the bedrock and the aquifer type and vulnerability are included in Appendix 2.

3.5.1 Geology

The subsoils at the site comprise Namurian Shale & Sandstone till (TNSS). The subsoils are shallow, ranging from 1 to 3 m below ground level. The underlying bedrock comprises muddy siltstone and silty mudstone belonging to the Killeshin Formation.

3.5.2 Hydrogeology

The subsoils are not significantly water bearing. The Killeshin Formation is classified by the GSI as a 'Poor Aquifer' which is generally unproductive except for local zones. Based on the available information on the thickness of the subsoils across the site, the aquifer vulnerability is Extreme. The direction of groundwater flow is expected to the west, towards the River Moyle.

There are no major groundwater abstractions in the surrounding area. There is no municipal mains water supply and the facility and private residences in the area obtain potable water from individual wells.

3.5.3 Groundwater Quality

There are three on-site wells one of which is used for production purposes and the other two were installed for monitoring purposes in 2008 at the request of the Council. The locations are shown on Figure 3.2. The production well (MW-1) is located in the west of the site and down gradient of the waste activities. MW-3 is upgradient and MW-2 is downgradient. The Waste Permit requires annual groundwater monitoring for pH, electrical conductivity, ammonia, chloride, biochemical oxygen demand (BOD), total coliforms and faecal coliforms.

The monitoring results for the production well (2006, 2007 and 2008) indicate that the water quality is good and there is no evidence of impact from site activities.

The new monitoring wells were sampled for the first time in November 2008. While the results show high chloride levels these are not considered to be due to on-site activity as the high levels are found in both up and down gradient wells. The remaining results confirm that groundwater quality is satisfactory. A copy of the laboratory test report for the most recent monitoring is included in the 2008 Annual Environmental Report submitted to the Council, a copy of which is in Appendix 3.

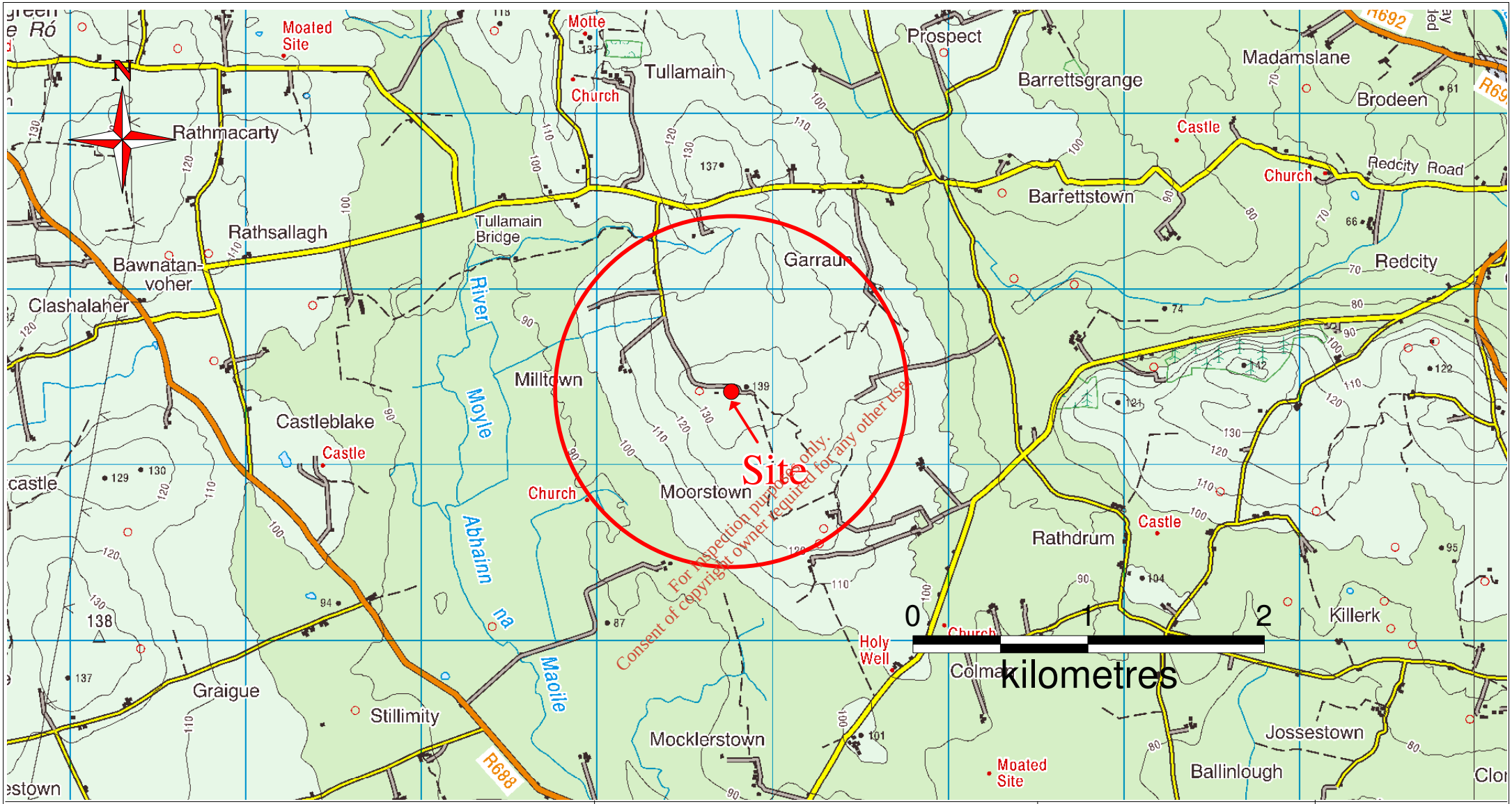
3.6 Surrounding Land Use

The site is located in a rural area used predominately for agriculture purposes, mainly grassland and tillage. A farm yard, approximately 600 meters (m) to the west, is the closest property to the site. The nearest residential property is approximately 900m to the north along the access road. There are three more residences within 1km of the site to the north, north east and south east of the facility (Ref. Figure 3.3).

The facility is not within the boundaries of any designated sites, such as candidate Special Areas of Conservation (cSACs), and Special Protection Areas (SPA's) for birds, or sites of national importance, such as proposed Natural Heritage Areas (pNHA's). Power's Woods, which is a proposed pNHA, is approximately 7 km to the north of the site. Grove Wood and Moneypark, which are both pNHAs, are approximately 7 km to the east of the site.

3.7 Cultural Heritage

As part of a planning application an archaeological desk study was carried out, which identified one existing archaeological feature located on the site. This is a roadway or track along the southern boundary of the site. A copy of the archaeology report is included in Appendix 4.



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environmental management for business

CLIENT

Miltown Composting Systems

TITLE

Houses Within 1km of Site

DETAILS

O.S. Licence Agreement Number AR 0038709

Ordnance Survey Ireland
Government of Ireland

FIGURE No.

3.3

SCALE

1:30,000

4. FACILITY DESIGN

4.1 Overview

The facility is a composting plant that accepts a broad range of compostable materials including source segregated household kitchen waste; catering wastes; non-hazardous industrial and municipal waste water sludges and organic fines generated in the treatment of mixed municipal solid waste (MSW).

The treatment process, depending on the nature of the source material, can involve initial screening to remove contaminants, blending with bulking agents, composting in separate enclosed tunnels and open bays, maturation in windrows and post treatment to remove impurities.

Due to the modular lay-out, the tunnels/bays can be operated independently, which provides flexibility in treating the different organic waste streams. The finished product can, depending on quality, either be used for horticultural and agricultural purposes, or as landfill cover.

4.2 Site Access

The site is accessed by a private road off the Fethard –Rosegreen third class road. The facility access gate is fitted with an electronic lock that is opened remotely by facility staff. There is separate on-site access road to the composting buildings and the cattle sheds, which was provided to comply with the European Communities (Animal By-products) Regulations 2003, as amended.

4.3 Site Services

Three phase electricity is provided by the Electricity Supply Board. Water for potable and sanitary use is obtained from the on-site well. There is no connection to a foul sewer and sewage from the toilets and canteen is currently discharged to an on-site septic tank. It is proposed to install a secondary treatment system and percolation area to treat effluent from the septic tank. More details on the proposed system are provided in Section 4.8.

4.4 Site Layout/Buildings & Hardstanding

Waste reception, blending and in-vessel composting is carried out in Shed No 1, which occupies an area of 1,700 square meters (m^2). Maturation is carried out in Sheds 2 and 3, which occupy 2,840 m^2. There are two empty cattle sheds in the centre of the site. These are currently empty, but may be used in the future either for maturation or finished product storage.

The site office is a portacabin located at the north-west corner of Shed 1. A small canteen/changing room is located to the south west of Shed 1. There is an open fronted shed to the west of the canteen, which is used for the storage of green waste bulking materials. A Container located at the northern side of the canteen is used to store lubricating/hydraulic oil and the power washer.

The open yards to the east and west of Shed 1, south of Shed 2 and west of the cattle sheds are paved with concrete. The biofilter is located on the southern side of Shed 1 and is accessed by an unpaved road running along the southern side of Sheds 1 and 2.

4.5 Processing Areas

4.5.1 Shed 1

All high rate composting is carried out in Shed 1, which is divided into two main sections in order to meet the requirements of the Dept of Agriculture in relation to the processing of animal by-products.

The western end of the building (where waste first enters the site) consists of eight (8) composting tunnels and a bunded area for waste acceptance. Six (6) of the tunnels are 11-12 meters long by 6 meters wide, while the other two (2) are double width bays (i.e. 11-12 by 12m wide).

Incoming wastes are blended in the waste acceptance area with appropriate bulking agents (mainly woodchip, compost overs or green waste). Source segregated domestic/commercial (Brown Bin) organic waste and various sludges may be mixed together and blended with woodchip, while MSW fines are kept separate from other wastes to prevent contamination with plastics etc.

Following blending the materials are placed to a height of approx. 1.8 – 3m high within the tunnel. The floor of each tunnel has a series of concrete channels that contain perforated 4inch pipes. Air is blown through these pipes from a stainless steal fan located outside the building. Each tunnel has its own fan. The air provided maintains adequate oxygen for optimum biological activity within the tunnel.

Each tunnel also has its own temperature probe, the information from which is relayed to a control panel. The purpose of the fans is not only to provide oxygen to the tunnel but also to control temperature. Once a temperature in excess of 60°C is reached (the desired temperature) the fans begin to speed up and thereby cool the tunnel and prevent excessive heat. This highly controlled system of composting is known as Static Pile Forced Aeration Composting, with temperature feedback.

Once a compost batch has been processed at 60°C for 48hrs on two consecutive occasions in the western end of the building, it is deemed to be treated in terms of the animal by-products regulations (ABPR). It is then passed over the large dividing wall that separates the western and eastern parts of the building.

Although sanitised in terms of the ABPR, the material is still biologically active and must be composted further in the eastern part of the building. This section contains eight (8) equally sized composting tunnels (6m wide by 11m long). The material is loaded into these tunnels for further composting. During loading the material is mixed, which helps stabilise and homogenise the product further. In many cases a batch is moved into another bay, within the Eastern section of Shed 1, solely to homogenise and reactivate biological activity.

Screening can also reactivate biological activity, as this breaks up any small clumps within the waste also. Screening may be carried out at this stage in the process, after which the material resembles a finished compost product. Precisely when screening is carried out depends on the moisture content and physical properties of the material. Composted MSW fines are generally not be screened until after maturation in Sheds 2 and 3.

In order to increase visibility within the building and treat odorous air, an air extraction fan removes air from the building and channels it into the woodchip biofilter located to the south of the building.

4.5.2 Sheds 2 & 3

Following the high rate composting in Shed 1, the finished product is transferred to Sheds 2 and 3, where it is formed into windrows. These are turned on a regular basis using either a specialised windrow turner, or a front loading shovel. The products are matured for as long as is feasible to stabilise the material as much as possible. As a guideline material is matured for at least 6 weeks.

At present aeration of maturing compost is achieved solely by mechanical turning of the windrows. Plans are currently being devised to install an aeration system to further enhance the stabilisation of the finished product.

When the maturation stage is completed the treated MSW compost (stabilised biowaste) is screened to remove contaminants-glass, plastic and stone. The finished product is then stored until it is sent off-site.

4.6 Odour Control

When composting began in 2004 Milltown Composting installed an air extraction and treatment system in Shed 1 to prevent the escape of odours from the building. At that time both thermophilic and the mesophilic stages were carried out in the building. This system has subsequently been upgraded.

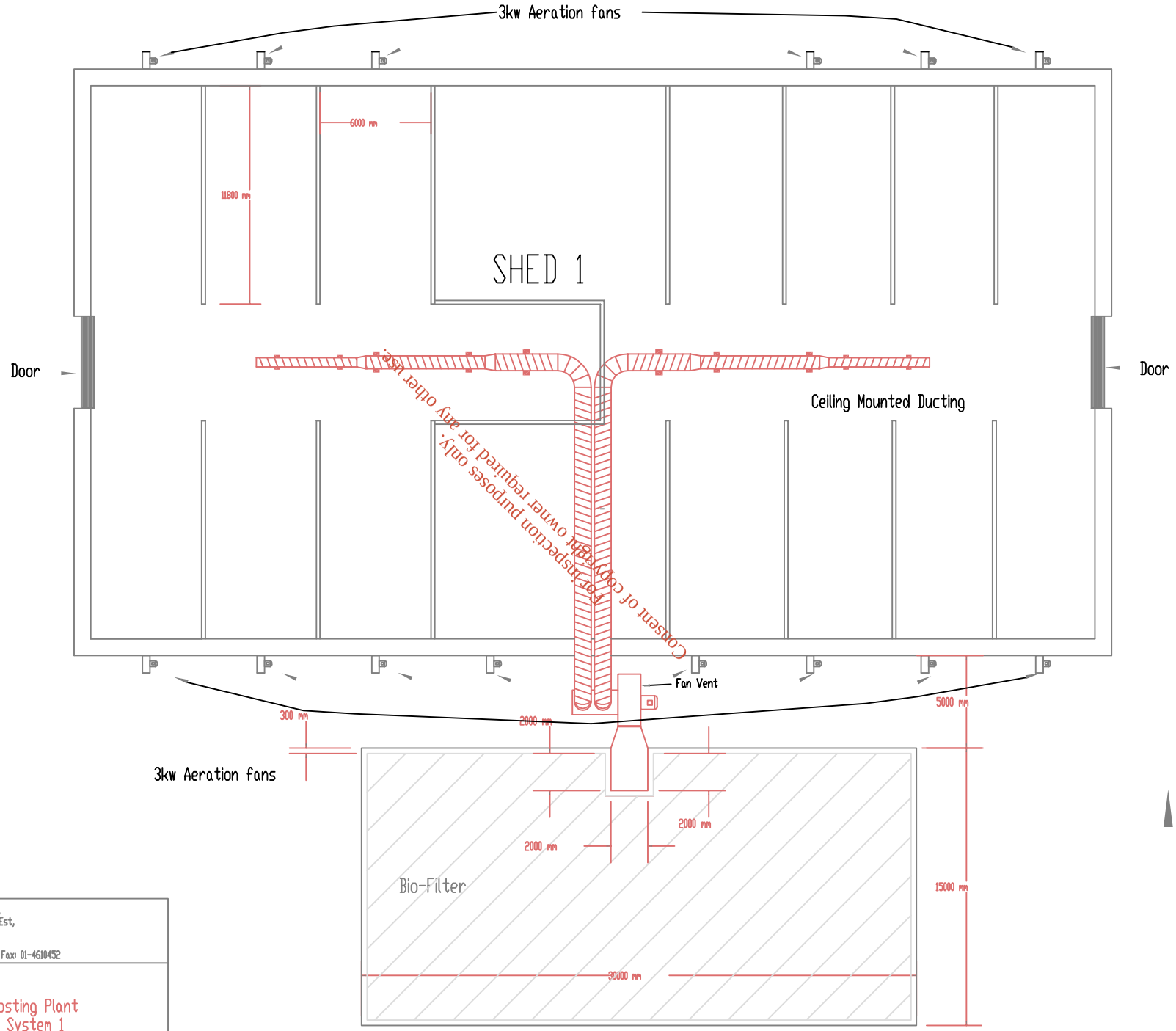
The original system comprised two wall mounted variable speed fans (Multifan 6E63), located on the northern side of the building, with ducting connecting to two modular woodchip biofilter units located outside the building. The fans drew air from inside the building into the biofilters. The fans operated continuously and the speeds were manually controlled by the facility operator. The maximum flow rate achievable by each fan was 12,000m^3 /hour, giving a total of 24,000m^3/hour.

Shed 1 occupies and area of approximately 1,700 m^2 and has volume of approximately 11,600 m^3. The tunnels and maturation windrows occupied approximately 1800m^3, so the volume of air in the building, when operating at full capacity, was approximately 9,800m^3.

The original extraction system could achieve 2.4 air changes per hour, which maintained effective negative pressure inside the building. However operational experience found that it was not necessary to continuously operate at maximum capacity, and an air change rate of 1 per hour was effective in controlling odour emissions.

Following the decision to expand the thermophilic processing in Shed 1 and move the maturation to Sheds 2 and 3, it was considered necessary to upgrade the air treatment system so as to ensure that odours did not cause a nuisance. The new system in Shed 1 required the installation of internal extraction ducting, air extractors and a replacement biofilter. Details of the design are shown on Drawing No A4808P1. This work is currently on-going and is expected to be completed by 30th June 2009.

Each composting bay has a 3.0kw stainless steel fan. These fans have been specifically developed for compost aeration purposes and have the correct fan characteristics. Each fan is controlled by its own independent temperature controller and a speed regulator. When the system is operating under automatic control, the fan air supply varies in response to temperature changes. Under manual operation, the fans have three levels of air supply, with 100% air flow generally used for drying and cooling. All preset speeds can be changed to any desired airflow from 0% to 100%.



Redwood Systems
Parkway Building,
Whitestown Ind Est,
Tallaght,
Dublin 24.
Tel: 01-4596756; Fax: 01-4610452

Proposal For: Acorn Recycling
Project: Green Glen Composting Ltd, Fethard
Drawn By: Fergus O'Brien
Date: 3-11-08
Scale: Not to scale
Reference: A4808P1

Composting Plant
System 1

4.7 Surface Water

Rainfall on the undeveloped northern part of the site infiltrates to the soil. Roof water and run off from concrete yards surrounding the empty cattle sheds is piped to a surface water drain that runs along the western site boundary.

Currently surface water from the paved open yards in the operational area is collected in drains and directed to wetlands via a silt trap. Clean run-off from the building roofs is also directed to the wetlands. The overflow from the wetlands discharges to the drain at the south west site boundary.

It is proposed to install an oil interceptor on the yard drainage system and subsequently divert the yard run-off away from the wetlands to discharge directly to the open drain. The wetlands will be retained as a wetland habitat, fed by the clean roof water. The proposed drainage system is shown on Figure 3.2.

4.8 Leachate/Wastewater

Leachate from the tunnels/bays is collected and reused in the process to maintain optimum moisture conditions. When the facility opened in 2004, the leachate was pumped to an above ground steel storage tank located to the south of the entrance to Shed 1. This tank is now empty, but has been retained to provide back-up storage in the event of the unexpected accumulation of surplus leachate.

Leachate from Shed 1 is now collected in an underground concrete storage tank located to the west of Shed 1 as shown on Figure 3.2. Liquid from the maturation area (Sheds 2 & 3) is collected in an underground concrete storage tank located to the north of Shed 3. Both tanks have been integrity tested, the results of which are included in Appendix 5.

The composting process on occasion may generate surplus leachate. While this has not occurred to date in the event of excess leachate being produce it will be stored in the underground leachate tanks and tankered off-site for treatment in a waste water treatment plant approved by the Agency.

The wheels of the trucks that deliver the waste are cleaned inside Shed 1 using steam power washers. The water used to supply the washers is stored in an above ground steel tank located at the south eastern external wall of the building. The washwater is collected in the underground leachate storage tank.

Sanitary and sink wastewater discharges to the septic tank system connected to the Canteen/Changing Room, which is separate from the surface water system. It is proposed to install a secondary wastewater treatment system and new percolation area downgradient of the septic tank and the existing percolation area. The treatment plant and percolation will be

designed and installed in accordance with guidance in the Agency's Wastewater Treatment Manual, Treatment System for Single Houses. Details of the proposed system are in Appendix 6.

4.9 Fuel / Oil Storage

Facility activities involve the storage and handling of diesel and lubricating/hydraulic oil for the mobile plant. Diesel is stored in a double skinned 1,000 litre plastic tank located at the south west corner of Shed 1. Lubricating and hydraulic oil are stored in drums in the Container located beside the canteen. Waste oils generated during plant maintenance are stored in drums inside the Container. Oil spill containment and clean-up equipment are provided.

4.10 Security Fencing

Stock proof fencing surrounding the composting area. The security gate at the entrance to the proposed licensed area is fitted with electronic locks operated remotely from the site offices.

5. OPERATIONS

5.1 Operational & Waste Acceptance Hours

The proposed normal operational hours are 06.00 to 18.00 Monday to Saturday. The facility will not normally open on Sundays. Materials are normally accepted between the hours of 08.00 and 18.00.

5.2 Staff

When operating at maximum capacity there will be 4 – 6 staff at the facility, which will include a Facility Manager and machine operators. Miltown Composting will ensure that the staff are provided with the appropriate training to ensure that the facility is managed in accordance with the Waste Licence conditions and in a manner that does not result in environmental pollution.

The Facility Manager, Mr. Neill Barry, completed the Cre Certificate in Compost Facility Operation course in 2008 and the FAS Waste Management Course in 2007. The Assistant Manager, Mr. Philip Maher, completed the Cre Certificate course in 2008.

5.3 Facility Access

There is only one public access to the facility and all vehicles will enter and leave the site via the access road off the Rosegreen to Fethard public road.

5.4 Operational Procedures

Milltown has developed a comprehensive set of Operational Procedures that include the following:-

- Waste Acceptance
- Compost Testing
- Leachate Management
- General Site Management

- Incident/Accident Response
- Incident Notification
- Record Management
- Public Information.

The procedures are based on the Conditions of the current Waste Permit and will be amended to reflect the conditions set in the Waste Licence.

5.5 Waste Types and Volumes

The facility accepts a broad range of compostable materials including source segregated household kitchen waste; catering wastes; industrial and municipal waste water sludges and organic fines generated in the treatment of mixed municipal solid waste. The household kitchen and catering wastes contain materials classified as Category 3 Material under the Animal By-products Regulations.

The types and volumes accepted in 2008 are presented in the AER in Appendix 3. Table 5.1 details the broad categories and quantities of waste that will be accepted when the facility is operating at maximum capacity, with the full list of potential wastes in Appendix 7**.**

Table 5.1 Projected Waste Inputs

Waste Type	**Main EWC Codes**	**Tonnes / Year**
Source separated household and commercial organic waste	20 01 08	7,000
MSW Fines	19 12 12	10,000
Industrial, municipal and commercial sludges	19 08 05 19 08 12 20 01 25 02 05 02 02 02 04	6000
Other non-hazardous biological wastes	Ref Appendix 7	1,500
Total		**24,500**

Note 1: The actual quantities of each type may vary, depending on market conditions
Note 2: Attached is a complete list of the EWC waste types suitable for acceptance at the facility

It is expected that, as the roll-out of the source segregated collection of household and commercial organic waste continues, there will be change in the waste profile, with an increase in the source segregated materials and a reduction in the volume of MSW fines.

5.6 Plant & Machinery

The plant used at the facility on a regular basis includes: -

3 No. Telescopic Loader,

2 No. Shredder,

1 No. Specialised Compost Turner,

1 No. Vibrating Screen,

2 No. Powerwashers.

These will provide 100% duty and 50% standby for processing up to 24,500 tonnes annually. If there is a break down, additional plant may be hired for use on-site for short periods to augment standby capability and ensure continued site operations.

5.7 Waste Acceptance Procedures

The wastewater treatment sludges are subject to an initial characterisation to confirm that they do not contain substances that would adversely affect the quality of the finished product. The sludge producer is required to provide Milltown Composting with the results of laboratory testing that demonstrates the sludges are suitable for composting. Milltown Composting retains records of all the test results.

All waste delivery vehicles are weighed at the weighbridge and accompanying documentation checked by the weighbridge operator to confirm that the material is suitable for acceptance. The following details are recorded:-

1. Date.
2. Vehicle registration number.
3. EWC code number.
4. Place of origin.
5. Weight of delivery.
6. Signature of delivery person counter signed by site staff.

The material is directed to the respective reception areas inside Shed 1 where it is inspected after off-loading. If it is deemed not suitable, it is reloaded and sent back to the producer.

5.8 Composting Process

5.8.1 Waste Reception Areas

In the reception area, the MSW fines may, depending on composition be shredded to enhance the composting process. The source segregated household and catering organic waste may be screened to remove contaminants. The wastewater treatment sludges are mixed with a bulking agent e.g. shredded green waste to improve porosity.

5.8.2 Thermophilic Stage

The materials are transferred from the reception area to the vessels using the telescopic loaders. The material placed in each of the vessels is assigned an individual batch number to allow performance monitoring during the treatment stages and ensure the maintenance of accurate records.

Three (3 No.) temperature probes are placed within the waste mass before the sheeting is placed over the top of the vessel. There is a computerised process control system, located in the site office, which records the temperature in each vessel to ensure that optimum composting conditions are maintained. In addition to the constant temperature monitoring, oxygen levels are monitored daily using a hand held probe. The moisture level is assessed either visually or using a hand held moisture meter.

In order to comply with the Animal By-Products Regulations a 'two barrier' system is operated in the MSW/kitchen/catering waste processing area. The objective is to ensure a maximum particle size of 40mm and achieve a sustained temperature of 60°C over two separate 48 hour periods.

The MSW fines as delivered typically have a particle size less than 40mm. Large items are manually removed before the materials are composted. Maintaining the temperature at 60°C for the two separate time periods is done by composting the same batch in two different vessels.

In the first vessel, or Barrier 1, the process usually takes one week. When completed, the material is removed to a second vessel-Barrier 2-where it is thoroughly mixed and again composted until the temperature requirements are met. To avoid cross contamination different buckets are used on the front end loader to move the materials into and out of the vessels.

5.8.3 Mesophilic Stage

When the material has completed the thermophilic stage it is removed from the vessel and transferred to Sheds 2 and 3 where it is formed into windrows. Depending on the source of the materials it may be blended with shredded green waste to improve porosity. The

windrows are formed using the telescopic loader and are turned daily using either the specialized turner or the loader.

Temperature, oxygen and moisture content are regularly monitored and moisture and the turning regime amended as required to ensure optimum conditions. The mesophilic stage can take up to 6 weeks.

When complete the compost may, depending on the nature of the source material, be screened to remove contaminants. These are stored on-site in a skip pending consignment to off-site disposal/treatment facilities.

5.9 Compost Quality Requirements

The Waste Permit sets standards in relation to the microbiological, chemical and physical quality of the final product, which define three environmental quality classes for the end product. The product must meet two of the specified maturity tests (respiration activity; germination of cress; reheat; elimination of test organisms and Carbon:Nitrogen ratio)

Table 5.2 Class of Compost

Parameter	Class 1	Class 2	Stabilised Biowaste
Cd (mg/kg dm)	0.7	1.5	5
Cr (mg/kg dm)	100	150	600
Cu (mg/kg dm)	100	150	600
Hg (mg/kg dm)	0.5	1	5
Ni (mg/kg dm)	50	75	150
Pb (mg/kg dm)	100	150	500
Zn (mg/kg dm)	200	400	1,500
PCBs (mg/kg dm)	-	-	0.4
PAHs (mg/kg dm)	-	-	3
Impurities > 2 mm	< 0.5%	< 0.5%	< 3%
Gravel and stones > 5 mm	< 5%	< 5%	-

Stabilised biowaste is defined as *"resulting from the mechanical/biological treatment of unsorted waste or residual municipal waste as well as any other treated biowaste which does not comply with the environmental quality Classes 1 or 2."*

Whether the compost meets the quality standards of Class 1, Class 2 or Stabilised Biowaste, depends on the waste composition, in particular the level of contamination with non—compostables and heavy metal concentrations.

Source segregated kitchen/catering waste and wastewater treatement sludges allow for the consistent production of Class 1 or Class 2 compost. Contaminants contained in the source segregate kitchen and canteen waste are generally large and can be screened out very effectively post active composting.

Due to the non source segregated nature of MSW fines and the high level of small contaminants (broken glass, small plastics etc), this material can never be considered to be a product, even if in terms of heavy metals etc and other compost quanlty criteria it meets the standards for Class 1 or 2 compost. However it can meet the stabilised biowaste classification criteria.

The roll out of the source separated household and commercial organic waste collections will reduce the volume of MSW fines, with a consequent fall in the amount of stabilised biowaste produced.

5.10 Compost Quality Testing

The compost quality is currently checked at quarterly intervals. Samples are taken during the post treatment screening of the mature compost. The samples are sent to an accredited laboratory for analysis for the following: -

- Maturity (Oxygen uptake rate; self heating test; carbon/nitrogen ratio)
- Plant nutrient and organic matter content (water soluble nutrients)
- Total plant nutrients and carbon content (dry weight)
- Heavy metals (cadmium, chromium, copper, nickel, lead, zinc and mercury);
- Microbiological parameters (faecal coliforms and salmonella);
- Moisture content
- Particle size analysis.

The reports on the most recent testing carried are included in Appendix 3.

5.11 Wastes Generated

5.11.1 Solid Waste Types & Volumes

The facility is designed to consistently produce a Class 1 or Class 2 compost and stabilised biowaste. Class I and Class 2 compost is not categorised as a waste and can be used for

agricultural, horticultural, and gardening purposes. The stabilised biowaste is currently used as landfill cover and for other suitable engineering/restoration applications as may be approved by the Agency.

The oversize recovered during the pre and post screening of the materials are stored on site and depending on the nature may either be used as bulking agents or sent off-site for disposal/recovery. Milltown Composting is investigating potential alternative recovery outlets for this material. The facility generates small volumes of wastes from the canteen and office. Milltown Composting operates a source segregation policy to maximise the recovery of potential recyclable and compostable materials from these waste streams.

5.11.2 Leachate

Milltown Composting has prepared a documented leachate handling procedure to ensure that it is properly managed. A copy of the procedure is included in Appendix 7. The composting process on occasion may generate surplus leachate. While this has not occurred to date in the event of excess leachate being produce it will be stored in the underground leachate tanks and tankered off-site for treatment in a waste water treatment plant approved by the Agency.

5.11.3 Waste Oils / Oily Water

The mobile plant items are subject to on-site maintenance. Waste oils and batteries generated during maintenance are stored in the container pending removal off-site for disposal/recovery at appropriately permitted licensed treatment/recovery facilities. The oil interceptor on the surface water drainage system will be routinely cleaned and the contents removed off-site for disposal at an appropriately licensed waste treatment/disposal facility.

5.11.4 Waste Disposal / Treatment

Milltown Composting only uses appropriately licensed or permitted waste disposal/treatment facilities for all wastes generated at the facility. Details of those currently used are included in the 2008 AER in Appendix 3.

Milltown Composting will provide details of any new proposed disposal/treatment facilities, including the relevant permit and or licence registration numbers, to the Agency for prior approval before any waste is moved off-site. All wastes leaving the facility are weighed at the on-site weighbridge and Milltown Composting retains records of the waste types (EWC codes), volumes (tonnes) and the destination.

5.12 Environmental Nuisance

The source segregated organic wastes are potentially attractive to birds, vermin and insects. All of the waste handling and processing is carried out internally, which eliminates the attractiveness to birds. Milltown Composting has employed a contract pest controller who implements a vermin and fly control programme.

The compost process has the potential to generate emissions, which could cause nuisance e.g. dust, noise and odours. The potential nuisances and the control measures are discussed in Section 6.

5.13 Safety and Hazard Control

All site personnel and visitors to the site including waste collectors are obliged to comply with Milltown Composting safety guidelines. The guidelines regulate access to and from the site and traffic movement within facility.

All Milltown Composting personnel are provided with and obliged to wear the requisite personal protective equipment (PPE), which includes face masks, gloves, safety glasses, steel-toed footwear, overalls, reflective jackets and helmets.

Fire extinguishers are provided at the site offices, the wood chip storage shed and on the shredders. These are serviced annually.

5.14 Contingency Arrangements

Miltown has prepared Incident/Accident Response Procedures for the facility to ensure a rapid response to any incident by trained staff, which will minimise the impact on the environment of any associated emissions. A copy of the procedure is included in Appendix 8.

In the event of a fire/explosion at the facility, the emergency response procedure will be activated and the emergency services called to the facility. Firewater generated in combating a fire in Sheds 1, 2 and 3 will be collected in the underground leachate collection tanks serving those buildings. The above ground back-up leachate storage tank may also be used to store firewater run-off.

6. EMISSION ASSESSMENT & CONTROL

Emissions associated with facility operations include surface water, sanitary wastewater, leachate, odours, noise, dust and bioaerosols. The site location, layout and operation are designed to eliminate, or where this is not possible to effectively mitigate any adverse environmental impacts associated with these emissions.

The increase in waste volumes will not significantly alter the types or scale of emissions currently regulated by the waste permit. The emissions assessment is based on the environmental monitoring carried out since operations began.

6.1 Surface Water

6.1.1 Assessment

There are separate collection systems for the run-off from the yards and the roofs. Currently both collection systems are directed to constructed wetlands, which has an outflow to an open field drain. It is proposed to install an interceptor and then divert the flow away from the wetlands and to the field drain. The roof water, which is uncontaminated, will continue to discharge to the wetlands so that they can be maintained as a wetland habitat.

Site activities with the potential to impact on surface water quality are limited to:-

- Storm water from the paved open yard areas;
- Oil/leachate spills and leaks;
- Sanitary wastewater.

Surface water monitoring is carried out annually and has established that emissions comply with the emission limits set in the Permit. The most recent monitoring event was carried out in February 2008 and included two samples. A copy of the laboratory test report is included in the 2008 AER in Appendix 3.

6.1.2 Control Measures

Surface water from the paved areas may potentially contain sediment and small amounts of oils arising from minor leaks from road vehicles and the mobile plant. It is proposed to install an oil interceptor on the drainage system, at the location shown on Figure No 3.2. Following the installation the yard run-off will be diverted away from the constructed wetlands.

The volume of oil stored at the facility is kept to the minimum required for continued operation. Diesel is stored in a double skin above ground storage tank, located on a concrete paved area. Engine and hydraulic oil and waste oils are stored in drums inside the Container. Spill containment kits are provided and maintained on-site and facility personnel are trained in the proper use of the kits to contain and clean up any major spills.

Sanitary and sink wastewater discharges to the septic tank system connected to the Canteen/Changing Room and which is separate from the surface water system. It is proposed to install a secondary wastewater treatment system between the septic tank and the existing percolation area. The treatment plant will be installed in accordance with guidance in the Agency's Wastewater Treatment Manual, Treatment System for Single Houses, which will ensure that it does not present a risk to surface water.

6.2 Soil and Groundwater

6.2.1 Assessment

Groundwater quality is monitored in the two on-site monitoring wells and the production well. The monitoring has established that the water quality is generally good and there is no evidence that facility activities have impacted on the groundwater.

The only emission to ground is the sanitary wastewater from the Canteen/Changing Room. At present this is discharged to a conventional septic tank and percolation area, which are located to the south west of Shed 1.

6.2.2 Control Measures

It is proposed to upgrade this by providing a proprietary treatment plant, which will be positioned between the septic tank and the percolation area. Details of the proposed system are included in Appendix 6.

The treatment plant will be installed in accordance with guidance in the Agency's Wastewater Treatment Manual, Treatment System for Single Houses. It is considered that the indirect discharge of treated effluent will have an imperceptible effect on groundwater quality beneath the site.

Leachate from the processing buildings is collected in underground concrete storage tanks. These tanks have been integrity tested and confirmed as being fit for purpose. The extensive paved areas minimises the potential for short term direct or indirect discharges to ground or groundwater in the event of spill or leak.

6.3 Leachate/Wastewater

6.3.1 Assessment

Composting typically generates the following wastewater streams: -

- Leachate from fresh and composting biowaste, and
- Condensate collecting in the air extraction system.

The exact volume of wastewater will depend on the composition of the materials to be composted, in particular the dry solids content and the method of operation. Typically the volume generated in the mesophilic stage is approximately 10 litres / tonne over the cycle.

In addition to the leachate from the process, the wheels of the waste delivery vehicles are washed down inside Shed 1. Sanitary wastewater from the Canteen/Changing room is discharged to a septic tank.

6.3.2 Control Measures

Leachate and condensate from the in-vessel units are collected and directed to the underground leachate storage tanks. From there it is recirculated back into the in-vessel units. Although the in vessel stage is generally a closed loop system in terms of water usage, there may be occasions where the waste has an elevated moisture content resulting in a surplus of wastewater emanating from the process. The above ground storage tank that was originally used to store leachate has been retained on-site to act as an emergency back-up.

If surplus leachate is generated and cannot be used in the process it will be collected and removed off-site by a vacuum tanker for disposal to an appropriate treatment facility. As it has not yet been necessary to send any surplus leachate off-site, leachate quality testing has not been required. An estimate of the likely quality is presented in Table 6.1.

Table 6.1 Leachate Quality

Parameter	Concentration
BOD	5,000-10 000 mg/l
COD	15,000-30 000 mg/l
pH	5 - 10
Ammoniacal Nitrogen	100-250 mg/l
Suspended Solids	2000 -3000mg/l
Sulphates (as SO_4)	1000 1500 mg/l
Detergents (as MBAS)	100 -200 mg/l
Fats, Oils, Grease	250 -500 mg/l

The disposal facility will be agreed in advance with the Agency. This is a contingency measure only, as in general the composting operation will be a net water user.

It is proposed to install a proprietary wastewater treatment system and new percolation area down gradient of the existing septic tank, which will provide secondary treatment of the sanitary wastewater. The treatment plant will be installed in accordance with guidance in the Agency's Wastewater Treatment Manual, Treatment System for Single Houses, which will ensure that it does not present a risk to surface water.

6.4 Noise

6.4.1 Assessment

The potential sources of noise are waste transport vehicles, mobile plant and materials processing. The current Permit requires that the ambient/environmental noise levels should not exceed 55 dB(A) during the daytime and 45dB(A) during night time hours at the site boundary. The nearest noise sensitive locations are private dwellings located more than 900m to the north and southeast of processing areas.

Noise monitoring is carried out annually and has established that emissions from the activity comply with the limits set in the Permit. The most recent monitoring event was carried out in October 2008 and included two survey points, one at the facility entrance and the second in a field to the north of the buildings. A copy of the survey report is included in the 2008 AER in Appendix 3.

6.4.2 Control Measures

It is not proposed to change the type or number of plant items currently operating at the facility. It is likely that the likely noise emission limits required by the Licence will relate to noise sensitive locations rather than the site boundary locations specified in the existing permit. The monitoring programme has shown that the facility is compliant with the permit emission limits and therefore additional control measures are not required.

6.5 Dust & Vehicle Exhausts

6.5.1 Assessment

Dust is not a significant problem at the facility. All waste processing activities with the potential to generate dust (shredding and screening) are carried out internally. The vehicle manoeuvring and parking areas are concrete paved and cleaned at regular intervals to remove any debris. The wheels of the waste delivery vehicles are washed down before they leave Shed 1.

Dust monitoring is carried out annually. The monitoring, has established that emissions from the activity comply with the limits set in the Permit. The most recent monitoring event was carried out in September-October 2008 and included three survey points, one each to the north and south of Shed 1 and one to the north east and down prevailing wind side of Sheds 1, 2 and 3. A copy of the survey report is included in Appendix 3.

There are exhaust emissions from the materials delivery and transfer vehicles. All deliveries and transfer are in bulk, to minimise the number of vehicle movements. All of the vehicles are diesel fuelled and use AdBlue to reduce nitrogen oxide emissions.

6.5.2 Control Measures

As the emissions are not and are unlikely to become a cause of nuisance, no additional mitigation measures are required.

6.6 Odours

6.6.1 Assessment

The incoming waste is odorous and the composting process also generates odours. As described above the process air from both the in-vessel unit and the maturation area is collected and treated in biofiters. This minimises the risk of bioaerosols and odour generation. The nearest sensitive locations are the private residences and public road approximately 900m to the north and the private residences to north east and south east of the site.

Monitoring of the biofilter medium and emissions from the biofilter is carried out annually. The monitoring, has established that emissions from the biofilter comply with the limits set in the Permit. The most recent monitoring event was carried out in October 2008 and included monitoring of air samples taken at the inlet to the original biofilter and from the surface of the biofilter, and testing of a sample of the biofilter medium. A copy of the survey report is included in the 2008 AER in Appendix 3.

6.6.2 Control Measures

The new biofilter, which is designed to accommodate the increased waste volumes, consists of a large concrete box, in which a thick layer of coarse shredded wood chips is placed, with a manifold and a system of air ducts on the bottom to ensure an even distribution of air.

The biofilter is visually monitored every working day by the operator on duty. This includes a check on the moisture content and temperature. The moisture content is the single most important parameter for the efficient microbial activity. The optimum water content depends

on the media composition and the characteristics of the air emission stream. For a typical natural biofilter media (e.g. wood chips plus peat) the water content should be maintained in the range of 40 to 60 percent. Water is applied to the filter as required to ensure optimum efficiency.

Every 1 - 2 years, part of the biofilter material (wood chips) are replaced by fresh material, in order to maintain the odour removal efficiency of the filter. Since biofiltration is a microbiological process, a sudden mechanical breakdown or failure of a complete biofilter is unlikely to happen. However, in the unlikely event a failure of the biofilter, or during the regular replacement of biofilter media, no process air will be directed to the biofilter.

The odour removal efficiency of the biofilters is estimated at minimum 95%, which is based on biofilter operations of existing biological treatment facilities. The remaining 5% or less of the produced odour emissions are released via the biofilters into the atmosphere. These emissions are not a cause of nuisance, since not only the quantity is reduced by a minimum factor 20, but also the type of odour changes during biofiltration to that similar to the media, e.g. wood, bark or compost.

6.7 Bioaerosols

6.7.1 Assessment

Bioaerosols (airborne micro-organisms typically <5 um in diameter) can be generated during the turning and handling of the composting materials. They present a potential health impact at composting facilities. A study conducted by Cre (the Composting Association of Ireland) concluded that, based on a review of international literature, the general population is not at risk and that there is no clear evidence that either the public or workers at composting facilities have been affected by bioaerosols.

Bioaerosol monitoring is carried out annually. The monitoring, has established that emissions from the activity are not impacting on the levels of bioaerosols in the vicinity of the site. The most recent monitoring event was carried out in October 2008 and included include the vicinity of the nearest sensitive receptor; 25m up prevailing wind and 25m down prevailing wind of the facility. A copy of the survey report is included in the 2008 AER in Appendix 3.

6.7.2 Control Measures

The thermophilic and mesophilic stages are carried out indoors, which reduces the potential for the spread of the bioarerosols. The air extraction and treatment system and biofolter further reduces the risk of the escape of bioaerosols from the building. As the monitoring has demonstrated that the facility is not impacting on bioaerosol levels in the vicinity of the site, no additional control measures are required.

7. ENVIRONMENTAL MONITORING

Miltown Composting implements the environmental monitoring programme specified in the Waste Permit. The programme includes groundwater, surface water, dust, noise and bioaerosol monitoring. The monitoring locations are shown on Figure 7.1.

7.1.1 Dust

Dust is monitored at three locations on the property boundary annually. The measurements are carried out using Bergerhoff gauges specified in the German Engineering Institute VDI 2119 document entitled "Measurement of Dustfall Using the Bergerhoff Instrument (Standard Method).

7.1.2 Noise

Noise is monitored at two locations on the site annually. The monitoring will be representative of daytime 30-minute L(A)eq and will be carried out in accordance with the ISO1996: Acoustics - Description and Measurement of Environmental Noise.

7.1.3 Bioaerosols

Bioaerosols are monitored at three locations annually. The locations include the vicinity of the nearest sensitive receptor; 25m up prevailing wind and 25m down prevailing wind of the facility. The methods used are based on the UK Composting Association 'Standardised Protocol for the Sampling and Enumeration of Airborne Micro-organisms at Composting Facilities'.

7.1.4 Groundwater

Groundwater quality is monitored annually in the three on-site wells. The water samples are analysed for pH electrical conductivity, ammonia, nitrate, chloride and faecal and total coliforms.

7.1.5 Surface Water

The surface water discharges are intermittent and rainfall dependent. Annual monitoring of the surface water emissions is carried out. The monitoring includes pH, electrical conductivity, biochemical oxygen demand total suspended solids, and ammonia.

AN3

Site Boundary

AD3

Existing Road access to Sheds 2 & 3

Steeldeck Weighbridge

AN2

AD1

Leachate Tank

AMW3

Shed 3

Shed 2

Concrete Yard 2

Slatted Cattle Shed

Leachate Tank

Paved Roadway and Parking Area

Concrete Yard 1

Slatted Cattle Shed

AN1

Concrete Yard 2

Shed 1

Concrete Yard 3

AMW1

Earthen Bank Lagoon

Earth Bank

AMW2

Storage Shed

Container

A1

Biofilter E1

Bio Filter

Berm

Wetlands

Stormwater Flow

Waste Water Treatment System

AD2

SW1

NOTES

Location	Eastings	Northings
AD1	215964	133521
AD2	215716	133431
AD3	215811	133560
AMW-1	215565	133481
AMW-2	215661	133447
AMW-3	215820	133536
SW-1	215630	133394
AN1	215670	133468
AN2	215666	133529
AN3	215587	133505
A1	215708	133506

N W E S

REV	DATE	DESCRIPTION	DRN	CHKD	APP

O' Callaghan Moran & Associates.
Granary House, Rutland Street,
Cork, Ireland.
Tel. (021) 4321521 Fax. (021) 4321522
email : info@ocallaghanmoran.com

CLIENT

Miltown Composting Systems

TITLE

Monitoring Locations

SCALE	FIGURE No.	REV.
1:1000 A3	7.1	

APPENDIX 1

Waste Permit/Animal By-Products Approval

THE DEPARTMENT OF
AGRICULTURE & FOOD
AN ROINN TALMHAÍOCHTA AGUS BIA

Date: 3rd October, 2006.

Mr. Stephen Griffin,
Milltown Composting Facility,
CTO Greenclean,
Blake House,
Carrigtwohill,
Co. Cork.

Dear Mr. Griffin,

Please find enclosed your approval to operate as a Composting Plant, which is valid from 1st October, 2006.

If you have any queries, please contact Ms Joan Delaney on 057 – 8694345

Dated this 3rd Day of October 2006

For the Minister of Agriculture and Food

Geraldine Lanigan,
Higher Executive Officer

An Officer authorised on that behalf by the said Minister

Pavillion B, Grattan Business Centre, Dublin Road, Portlaoise,Co Laois
Pailliún B, Ionan Gnó Grattan, Bóthar átha Cliath, Portlaoise, Co Laoise
Fax: 057 8694381
Email: info@agriculture.gov.ie Web: www.agriculture.gov.ie
Tel:
VAT.Reg. IE4773186Q

THE DEPARTMENT OF
AGRICULTURE & FOOD
AN ROINN TALMHAÍOCHTA AGUS BIA

RNP 6-1 (COMP15)

Date 3rd October 2006

Mr. Stephen Griffin,
Milltown Composting Facility,
CTO Greenclean,
Blake House,
Carrigtwohill,
Co. Cork.

RE: **European Communities (Animal By-Products) Regulations of 2003 – SI 248 of 2003, as amended by SI 707 of 2005 and EC Council Regulation No. 1774/2002**

Dear Mr Griffin,

I am directed by the Minister of Agriculture & Food to inform you that your premises has been approved to operate as a Composting Plant from 1st October 2006 in accordance with Regulations 6,6(b) of the European Communities (Animal By-Products) Regulations of 2003 – SI 248 of 2003, as amended by SI 707 of 2005.

The official **approval number** allocated to your premises is **COMP – 15.**

Your approval is subject to the following conditions:

1. Catering waste as detailed in Article 6,1,(l) of Regulation (EC) 1774/2002 and defined in Annex I of the same regulation may be accepted at your plant.

2. Manure, digestive tract content separated from the digestive tract, milk and colostrums as detailed in Article 5,2,(e) of Regulation (EC) 1774/2002 may be accepted at your plant

3. No other Animal by-products as defined in Article 2,1,(a) of Regulation (EC) 1774/2002 may be accepted at your plant.

4. Representative samples of compost for microbiological analysis at a Department of Agriculture and Food approved laboratory must be taken on a monthly basis. (5 samples to be taken as per paragraph 7.2 of attached conditions document)

5. All necessary conditions as outlined in the Department of Agriculture and Food's document "*Conditions for approval and operation of composting and biogas plants treating animal by-products in Ireland*"(Attached)

Please note that failure to comply with these conditions may result in the withdrawal of your approval

Pavillion B, Grattan Business Centre, Dublin Road, Portlaoise,Co Laois
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South Tipperary County Council
County Hall
Emmett St.
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Co Tipperary

WASTE PERMIT

Waste Permit Reference Number:	**WP 019 02**
Permit holder:	Milltown Composting Systems Ltd
Location of Facility:	Milltown More & Moorstown, Fethard, Co. Tipperary.

Permit Expires: **36 months from date of issue**

Glossary of Terms

All terms in this permit should be interpreted in accordance with the definitions in the Waste Management Acts 1996 to 2005, unless otherwise defined in this section.

Aerosol	A suspension of solid or liquid particles in a gaseous medium.
Adequate lighting	20 lux measured at ground level.
AER	Annual Environmental Report.
Agreement	Agreement in writing.
Annually	At approximately twelve monthly intervals.
Attachment	Any reference to Attachments in this permit refers to attachments submitted as part of this permit application.
Application	The application by the Permit holder for this permit.
Appropriate facility	A waste management facility, duly authorised under relevant law and technically suitable.
BAT	Best Available Techniques.
Bi-annually	All or part of a period of six consecutive months.
Biennially	Once every two years.
Bioaerosol	An aerosol of biological particles.
Biodegradable waste	Any waste that is capable of undergoing anaerobic or aerobic decomposition, such as food, garden waste, sewage sludge, paper and paperboard.
BOD	5 day Biochemical Oxygen Demand.
CEN	Comité Européen De Normalisation – European Committee for Standardisation.
COD	Chemical Oxygen Demand.
Compost	Stable, sanitised and humus like material rich in organic matter and free from offensive odours resulting from composting, of seperately collected biowaste which complies with the environmental quality classes outlined in *Schedule C: Compost Quality* of this permit.
C & D Waste	Wastes that arise from construction, renovation and demolition activities: Chapter 17 of the EWC or as otherwise may be agreed.
Containment boom	A boom which can contain spillages and prevent them from entering drains or watercourses or from further contaminating watercourses.
Daily	During all days of plant operation, and in the case of emissions, when emissions are taking place; with at least one measurement on any one day.
Day	Any 24 hour period.
Daytime	0800 hrs to 2200 hrs.

DB(A)	Decibels (A weighted).
DO	Dissolved Oxygen.
Documentation	Any report, record, result, data, drawing, proposal, interpretation or other document in written or electronic form which is required by this permit.
Drawing	Any reference to a drawing or drawing number means a drawing or drawing number contained in the application, unless otherwise specified in this permit.
EMP	Environmental Management Programme.
Emission Limits	Those limits, including concentration limits and deposition rates established in *Schedule E: Emission Limits* of this permit.
EPA	Environmental Protection Agency.
European Waste Catalogue (EWC)	A harmonised, non-exhaustive list of wastes drawn up by the European Commission and published as Commission Decision 2000/532/EC and any subsequent amendment published in the Official Journal of the European Community.
Facility	Any site or premises used for the purposes of the recovery or disposal of waste.
Forced aeration	The supply of air to a compost pile, by pumping (positive pressure) or by sucking air through the composting material (negative pressure).
Fortnightly	A minimum of 26 times per year, at approximately two week intervals.
GC/MS	Gas Chromatography/Mass Spectroscopy.
Green waste	Waste wood (excluding timber), plant matter such as grass cuttings, and other vegetation.
Heavy Metals	This term is to be interpreted as set out in “Parameters of Water Quality, Interpretation and Standards” published by the EPA in 2001. ISBN 1-84095-015-3.
HFO	Heavy Fuel Oil.
Hours of Operation	The hours during which the facility is authorised to be operational.
ICP	Inductively Coupled Plasma Spectroscopy.

Incident The following shall constitute an incident for the purposes of this permit:

(i) an emergency;
(ii) any emission which does not comply with the requirements of this permit;
(iii) any exceedence of the daily duty capacity of the waste handling equipment;
(iv) any trigger level specified in this permit which is attained or exceeded; and
(v) any indication that environmental pollution has, or may have, taken place.

Industrial Waste	As defined in Section 5(1) of the Waste Management Acts 1996 to 2005.
Inert waste	Waste that does not undergo any significant physical, chemical or biological transformations. Inert waste will not dissolve, burn or otherwise physically or chemically react, biodegrade or adversely affect other matter with which it comes into contact in a way likely to give rise to environmental pollution or harm human health. The total leachability and pollutant content of the waste and the ecotoxicity of the leachate must be insignificant, and in particular not endanger the quality of surface water and/or groundwater.
In-vessel composting	Different composting methods in which material for composting is contained in a building, reactor or vessel.
IPPC	Integrated Pollution Prevention & Control.
K	Kelvin.
KPa	Kilo Pascals.
Landfill Directive	Council Directive 1999/31/EC.
Leq	Equivalent continuous sound level.
Permit	A Waste Permit issued in accordance with the Acts.
Permit holder	Milltown Composting Systems Ltd, Milltown More & Moorstown,Fethard, Co. Tipperary.
Liquid Waste	Any waste in liquid form and containing less than 2% dry matter.
List I	As listed in the EC Directives 76/464/EEC and 80/68/EEC and amendments.
List II	As listed in the EC Directives 76/464/EEC and 80/68/EEC and amendments.
Local Authority	South Tipperary County Council.
Maintain	Keep in a fit state, including such regular inspection, servicing, calibration and repair as may be necessary to adequately perform its function.
Mass Flow Limit	An Emission Limit Value that is expressed as the maximum mass of a substance that can be emitted per unit time.
Mass Flow Threshold	A mass flow rate, above which a concentration limit applies.
Monthly	A minimum of 12 times per year, at approximately monthly intervals.
Municipal waste	As defined in Section 5(1) of the Acts.
Night-time	2200 hrs to 0800 hrs.
Noise Sensitive Location (NSL)	Any dwelling house, hotel or hostel, health building, educational establishment, place of worship or entertainment, or any other facility or area of high amenity which for its proper enjoyment requires the absence of noise at nuisance levels.

Oil Separator	Device installed according to the International Standard I.S.EN 858-2:2003 (Separator systems for light liquids, (e.g. oil and petrol)-Part 2:Selection of nominal size, installation, operation and maintenance.
Ppm	Parts per million.
Quarterly	All or part of a period of three consecutive months beginning on the first day of January, April, July or October.
Regional Fisheries Board	Southern Regional Fisheries Board.
Sanitary Authority	South Tipperary County Council.
Sanitary Effluent	Wastewater from facility toilet, washroom and canteen facilities.
Sample(s)	Unless the context of this permit indicates to the contrary, samples shall include measurements by electronic instruments.
Sludge	The accumulation of solids resulting from chemical coagulation, flocculation and/or sedimentation after water or wastewater treatment, with greater than 2% dry matter.
SOP	Standard Operating Procedure.
Specified Emissions	Those emissions listed in *Schedule B: Emission Limits* of this permit.
Stabilised Biowaste	Waste resulting from the mechanical/biological treatment of unsorted waste or residual municipal waste including treated biowaste, which does not comply with the environmental quality classes outlined in *Schedule C: Compost Quality*, of this permit.
Standard Method	A National, European or internationally recognised procedure (eg, I.S. EN, ISO, CEN, BS or equivalent), as an in-house documented procedure based on the above references, a procedure as detailed in the current edition of "Standard Methods for the Examination of Water and Wastewater", (prepared and published jointly by A.P.H.A., A.W.W.A & W.E.F), American Public Health Association, 1015 Fifteenth Street, N.W., Washington DC 20005, USA; or, an alternative method as may be agreed by the Council.
Storm Water	Rain water run-off from roof and non-process areas.
TOC	Total Organic Carbon.
Trade Effluent	Trade Effluent has the meaning given in the Local Government Water Pollution Acts 1977 and 1990.
Trigger Level	A parameter value, the achievement or exceedance of which requires certain actions to be taken by the licensee.
Weekly	During all weeks of plant operation, and in the case of emissions, when emissions are taking place; with at least one measurement in any one week.
Windrow	An elongated pile of composting material.
WWTP	Waste Water Treatment Plant.

INTRODUCTION

This introduction is not part of the permit and does not purport to be a legal interpretation of the permit.

This permit is for a composting facility at, Milltown More & Moorstown, Fethard, Co. Tipperary.

The Permit holder must manage and operate the facility to ensure that the activities do not cause environmental pollution and complies with the requirements of S.I. No. 597 of 2001 Disease of Animals Act 1966(Prohibition on the Use of Swill) Order, 2001. The Permit holder is required to submit specified reports on the operation and management of the facility to South Tipperary County Council.

The permit sets out in detail the conditions under which Milltown Composting Systems Ltd is required to operate and manage this site.

WASTE MANAGEMENT (PERMIT) REGULATIONS 1998

WASTE PERMIT No. WP 019 02

In pursuance of the powers conferred on it by the Waste Management Act 1996 and the Waste Management (Permit) Regulations 1998, (S.I. No. 165 of 1998), South Tipperary County Council hereby grants a Waste Permit under article 5(1) of the said regulations to **Milltown Composting Systems Ltd, Milltown More & Moorstown, Fethard, Co. Tipperary** to carry on the recovery of waste (other than hazardous waste) at a facility (other than a facility for the composting of waste where the amount of compost and waste held at the facility exceeds 1000 cubic meters at any time) at **Milltown More & Moorstown, Fethard, Co. Tipperary** in accordance with the plans and particulars furnished with the application and subject to conditions, with the reasons therefor and the associated schedules attached thereto set out in the permit. The period of validity of this permit is for **three** years from the date of issue.

The permitted Waste Activity in accordance with the Fourth Schedule of the Waste Management Act 1996 is:

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

Class 13: Use of waste obtained from any activity referred to in a preceding paragraph of this Schedule.

The permitted Waste Activity in accordance with the First Schedule of the Waste Management (Permit) Regulations 1998 is:

Activity 5: The recovery of waste (other than Hazardous Waste) at a facility (other than a facility for the composting of waste where the amount of compost and waste held at the facility exceeds 1000 cubic metres at any time).

It is the responsibility of Permit holder to ensure that the permitted waste activities are carried on in accordance with the General Conditions specified in the Regulations and quoted below, and the Schedule of Conditions attached herein.

The General Conditions specified in the Regulations are as follows:

(a) The activity concerned shall not cause, or be likely to cause, environmental pollution.

(b) Any emissions from the activity concerned will not result in the contravention of any relevant standard, including any standard for an environmental medium, or any relevant emission limit value, prescribed under any enactment.

(c) The best available technology will be used to prevent or eliminate or, where that is not practicable, to limit, abate or reduce an emission from the activity concerned.

Signed: _____ _____

A.O. Environment Date of Issue

NOTE: the granting of this permit, and any condition imposed by it, does not exempt the holder of the permit from the need to comply with the statutory obligations of any other legislation, including The Local Government (Water Pollution) Acts 1977 - 1990, Air Pollution Act 1987, Litter Pollution Act 1997, Planning and Development Acts 2000 - 2006.

Table of Contents

	Page No.
Decision and Reasons for the Decision	9
Part I Activities Permitted	9
Part II Conditions	10
Condition 1 Scope of the permit	10
Condition 2 Management of the Facility	11
Condition 3 Facility Infrastructure	14
Condition 4 Interpretation	18
Condition 5 Restoration & Aftercare	19
Condition 6 Facility Operation	19
Condition 7 Emissions	21
Condition 8 Nuisance	22
Condition 9 Monitoring	23
Conditions 10 Resources & Energy Efficiency	25
Condition 11 Contingency Arrangements	26
Condition 12 Records	27
Condition 13 Reports & Notification	28
Condition 14 Charges & Financial Provisions	29
Schedule A Waste Acceptance	30
Schedule B Monitoring	33
Schedule C Compost Quality	36
Schedule D Process Management	38
Schedule E Emission Limits	39
Schedule F Recording and reporting to South Tipperary County Council	40

Decision & Reasons for the Decision

South Tipperary County Council is satisfied that, on the basis of the information available, that subject to compliance with the conditions of this permit, any emissions from the activity will comply with and will not contravene any of the requirements of Section 40(4) of the Waste Management Acts 1996 to 2005.

In reaching this decision, South Tipperary County Council has considered the application and supporting documentation received from the applicant, all submissions received from other parties and the report of its officer.

Part I Activities Permitted

In pursuance of the powers conferred on it by the Waste Management Act 1996 and the Waste Management (Permit) Regulations 1998, (S.I. No. 165 of 1998), South Tipperary County Council, being satisfied that

- The activity will not cause environmental pollution,
- Any emissions from the activity will not result in contravention of any relevant standard, including any standard for an environmental medium, or any relevant emission limit value, prescribed under any enactment
- The best available technology not entailing excessive costs will be used to prevent or eliminate or, where that is not practicable, to limit, abate or reduce an emission from the activity concerned",

Hereby grants a Waste Permit under article 5(1) of the said regulations to Milltown Composting Systems Ltd Milltown More & Moorstown, Fethard, Co. Tipperary to carry on the recovery of waste (other than hazardous waste) at a facility (other than a facility for the composting of waste where the amount of compost and waste held at the facility exceeds 1000 cubic metres at any time) at Milltown More & Moorstown, Fethard, Co. Tipperary, in accordance with the plans and particulars furnished with the application and subject to fourteen conditions set out in the permit.

Permitted Waste Recovery Activities in accordance with the Fourth Schedule of the Waste Management Act, 1996

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

Class 13	**Use of waste obtained from any activity referred to in a preceding paragraph of this Schedule.**

PART II CONDITIONS

CONDITION 1 SCOPE OF THE PERMIT

1.1 This permit is for the purposes of waste permitting under the Waste Management (Permit) Regulations, 1998 only and nothing in this permit shall be construed as negating the Permit holder's statutory obligations or requirements under any other enactments or Regulations, including the Water Pollution Acts, the Air Pollution Acts, the Waste Management Act, the Litter Pollution Act, or the Planning And Development Acts.

1.2 This Waste Permit is issued under the Waste Management (Permit) Regulations 1998 to Milltown Composting Systems Ltd, Milltown More & Moorstown, Fethard, Co. Tipperary.

1.3 Waste activities at the facility shall be restricted to those listed and described in Part I: Activities Permitted and authorised by this permit.

1.4 This permit is granted for a period not **exceeding 36 months from the date of issue.**

1.5 For the purposes of this permit, the facility is the area of land outlined in red on the Drawing referred to as *'Entire Complex Layout'* as attached to the application. Any reference in this permit to "facility" shall mean the area outlined in red.

1.6 The Permit holder shall not alter the infrastructure of the Permitted Facility in such a manner so as to lead to a breach of any of the provisions of this Permit.

1.7 Only waste categories and quantities listed in *Schedule A: Waste Acceptance* of this permit shall be accepted at the facility.

1.8 If it is proposed to treat a waste, which is not included in Schedule A, the approval of the Council must be sought beforehand.

1.9 No hazardous wastes shall be accepted at the facility.

1.10 The following shall constitute an incident for the purposes of this permit

- an emergency
- any emission, which does not comply with the requirements of this permit;
- any exceedance of the daily duty capacity of the waste handling equipment;
- any trigger level specified in this permit which is attained or exceeded; and
- any indication that environmental pollution has, or may have, taken place.

1.11 Where South Tipperary County Council considers that a non-compliance with any condition of this permit has occurred, it may serve a notice on the Permit holder specifying:

- that only those wastes as specified, if any, in the notice are to be accepted at the facility after the date set down in the notice;
- that the Permit holder shall undertake the works stipulated in the notice, and/or otherwise comply with the requirements of the notice as set down therein, within the time-scale contained in the notice

- that the Permit holder shall carry out any other requirements specified in the notice.

When the notice has been complied with, the Permit holder shall provide written confirmation that the requirements of the notice have been carried out. No waste, other than that which is stipulated in the notice, shall be accepted at the facility until written permission is received from South Tipperary County Council.

1.12 Every plan, programme or proposal submitted to South Tipperary County Council for its agreement pursuant to any Condition of this permit shall include a proposed timescale for its implementation. South Tipperary County Council may modify or alter any such plan, programme or proposal in so far as it considers such modification or alteration to be necessary and shall notify the Permit holder in writing of any such modification or alteration. Every such plan, programme or proposal shall be carried out within the timescale fixed by South Tipperary County Council but shall not be undertaken without the agreement of South Tipperary County Council.

1.13 Waste Acceptance Hours and Hours of Operation**.**

- The facility shall only be operated during the hours of 8.00 and 18.00 Monday to Friday and 08.00 – 18.00 on Saturdays.
- Waste shall not be accepted at the facility on Sundays or Bank Holidays.

Reason: To clarify the scope of this permit

CONDITION 2 MANAGEMENT OF THE FACILITY

2.1 The Permit holder shall acquaint all staff, employees, lessees and agents, including replacement personnel, of the provisions and conditions of this permit.

2.2 The Permit holder shall employ a suitably qualified and experienced facility manager who shall be designated as the person in charge. The facility manager or a nominated, suitably qualified and experienced deputy shall be present at the facility at all times during its operation.

2.3 Recovery activities shall only be undertaken by persons authorised to do so by the Permit holder. Employees with responsibilities in the waste control area shall receive training adequate to enable them to properly execute their tasks in relation to pollution control.

2.4 The Permit holder shall ensure that there is no unauthorised access to the site.

2.5 A copy of the permit must be kept on site at all times.

2.6 South Tipperary County Council shall have unrestricted access to the premises at all reasonable times on production of identification, if required, for the purpose of its functions under the Waste Management Act, 1996.

2.7 Environmental Management System (EMS)

2.7.1 The Permit holder shall establish and maintain an Environmental Management System (EMS) within six months of the date of grant of this permit. The EMS shall be updated on an annual basis.

2.7.2 The EMS shall include as a minimum the following elements:

2.7.2.1 Management and Reporting Structure.

2.7.2.2 Schedule of Environmental Objectives and Targets. The Permit holder shall prepare and maintain a Schedule of Environmental Objectives and Targets. The schedule shall as a minimum provide for a review of all operations and processes, including an evaluation of practicable options, for energy and resource efficiency, the use of cleaner technology, cleaner production, and the prevention, reduction and minimisation of waste, and shall include waste reduction targets. The schedule shall include time frames for the achievement of set targets and shall address a five year period as a minimum. The schedule shall be reviewed annually and amendments thereto notified to the Council for agreement as part of the Annual Environmental Report (AER).

2.7.2.3 Environmental Management Programme (EMP)

The Permit holder shall, not later than six months from the date of grant of this permit, submit to the Council for agreement an EMP, including a time schedule, for achieving the Environmental Objectives and Targets prepared under Condition 2.7.2.2. Once agreed the EMP shall be established and maintained by the Permit holder. It shall include:

(i) designation of responsibility for targets;

(ii) the means by which they may be achieved;

(iii) the time within which they may be achieved.

The EMP shall be reviewed annually and amendments thereto notified to the Council for agreement as part of the Annual Environmental Report (AER)

A report on the programme, including the success in meeting agreed targets, shall be prepared and submitted to the Council as part of the AER. Such reports shall be retained on-site for a period of not less than seven years and shall be available for inspection by authorised persons of the Council.

2.7.2.4 Documentation

(i) The Permit holder shall establish and maintain an environmental management documentation system, which shall be to the satisfaction of the Council.

(ii) The Permit holder shall issue a copy of this permit to all relevant personnel whose duties relate to any condition of this permit.

2.7.2.5 Corrective Action

The Permit holder shall establish procedures to ensure that corrective action is taken should the specified requirements of this permit not be fulfilled. The responsibility and authority for initiating further investigation and corrective action in the event of a reported non-conformity with this permit shall be defined.

2.7.2.6 Awareness and Training

The Permit holder shall establish and maintain procedures for identifying training needs, and for providing appropriate training, for all personnel whose work can have a significant effect upon the environment. Appropriate records of training shall be maintained.

2.7.2.7 Communications Programme

The Permit holder shall establish and maintain a Public Awareness and Communications Programme to ensure that members of the public are informed, and can obtain information at the facility, at all reasonable times, concerning the environmental performance of the facility.

2.7.2.8 Maintenance Programme

The Permit holder shall establish and maintain a programme for maintenance of all plant and equipment based on the instructions issued by the manufacturer/supplier or installer of the equipment. Appropriate record keeping and diagnostic testing shall support this maintenance programme. The Permit holder shall clearly allocate responsibility for the planning, management and execution of all aspects of this programme to appropriate personnel.

2.7.2.9 Efficient Process Control

The Permit holder shall establish and maintain a programme to ensure there is adequate control of processes under all modes of operation. The programme shall identify the key indicator parameters for process control performance, as well as identifying methods for measuring and controlling these parameters. Abnormal process operating conditions shall be documented, and analysed to identify any necessary corrective action.

Reason: To make provision for the proper management of the activity on a planned basis having regard to the desirability of ongoing assessment, recording and reporting of matters affecting the environment.

CONDITION 3 FACILITY INFRASTRUCTURE

3.1 Facility Notice Board

3.1.1 The Permit holder shall maintain a Facility Notice Board at the facility so that it is legible to persons outside the main entrance to the facility. The minimum dimensions of the board shall be 1200mm by 750mm.

3.1.2 The board shall clearly show:

- the name and telephone number of the facility ;
- the normal hours of opening;
- the name of the Permit holder;
- the emergency out of hours contact telephone number;
- the permit reference number; and that South Tipperary County council was the issuing body.

3.2 Facility Office

3.2.1 The Permit holder shall maintain an office on site. The office shall be constructed and maintained in a manner suitable for the processing and storing of documentation. The Permit holder shall provide and maintain a working telephone at the facility and a method for electronic transfer of information at the facility.

3.3 Waste Inspection and Quarantine Areas

- a waste inspection and quarantine area shall be provided within the store building and maintained at the facility.
- these areas shall be constructed and maintained in a manner suitable, and be of a size appropriate, for the inspection of waste and subsequent quarantine if required.
- the waste inspection area and the waste quarantine area shall be clearly identified and segregated from each other.
- drainage from these areas shall be directed to the contamination tank

3.4 The Permit holder shall ensure that all surfaces where contaminated surface water or process water arise are impermeable.

3.5 Surface Water Management

Surface water management infrastructure shall be provided and maintained at the facility. As a minimum, the infrastructure shall consist of the following:

- a rainwater collection and drainage system for all buildings on-site and this shall include the diversion of all roof water and run-off from all non-contaminated impervious areas of the site;
- the system shall be designed so as no contaminated water may enter the surface water drainage system;
- the system may be designed so as rainwater may be diverted to the on-site water storage tanks for use in the process;

3.6 Process Water Management

Effective process water management infrastructure shall be provided and maintained at the facility. As a minimum, the infrastructure shall be capable of the following:

- the collection of all process water and any contaminated water that may arise at the facility and drainage to the on-site storage tanks/sumps;
- the screening of all process water prior to entering any enclosed drain/pipe;

- the maintenance of a freeboard of at least 0.5m on all process water storage tanks;

3.7 Monitoring Infrastructure

3.7.1 *Groundwater*

- The Permit holder shall provide two monitoring point(s) (upgradient and downgradient of the facility) to allow for the sampling and analysis of groundwater as set out in *Schedule B: Monitoring*.

3.7.2 *Replacement of Infrastructure*

- Monitoring infrastructure, which is damaged or proves to be unsuitable for its purpose shall be replaced within three months of it being damaged or recognised as being unsuitable.

3.8 The Permit holder shall ensure that all tanks, machinery and equipment are maintained. in so far as to ensure no spillages, leaks, explosions or risk to the environment.

3.9 The Permit holder shall ensure that no obstruction is caused to any drains or watercourses.

3.10 Odour Control

3.10.1 The Permit holder shall manage/maintain the waste activities at the facility, the Permit holder shall manage/maintain the odour abatement system as outlined in the waste permit application. In addition, the following additional measures shall be included:

- A system for the maintenance of integrity and negative pressure shall be installed and maintained throughout the biowaste reception building(s) to ensure no significant escape of odours. A report which confirms negative and integrity pressure within the waste transfer building shall be submitted to the Council for its agreement.
- Provision of 100% duty capacity and 50% stand by capacity, back ups and spares must be provided for the air handling, ventilation and abatement plant.

3.11 Waste Handling, ventilation and processing plant

3.11.1 Items of plant deemed critical to the efficient and adequate processing of waste at the facility shall be provided on the following basis:-

(i) 100% duty capacity;

(ii) 50% standby capacity available on a routine basis; and

(iii) Provision of contingency arrangements and/or back up and spare in the case of breakdown of critical equipment.

3.11.2 Within **three months from the date of issue** of this permit, the Permit holder shall provide a report for the agreement of the Council detailing the duty and standby capacity in tonnes per day, of all waste handling and processing equipment to be used at the facility. These capacities shall be based on the permitted waste intake, as per *Schedule A: Waste Acceptance*, of this permit.

3.11.3 The quantity of waste to be accepted at the facility on a daily basis shall not exceed the duty capacity of the equipment at the facility. Any exceedance of this intake shall be treated as an incident

3.12 The Permit holder shall provide and maintain a Wastewater Treatment Plant at the facility for the treatment of sanitary effluent arising on-site. Any percolation area shall satisfy the criteria set out in the *Wastewater Treatment Manual, Treatment Systems for single Houses*, published by the Environmental Protection Council.

3.13 Weighbridges and Wheel Cleaning

3.13.1 The Permit holder shall provide and maintain a weighbridge and access to appropriate wheel cleaning equipment at the facility.

3.13.2 All vehicles leaving the facility as required to ensure that no process water or waste is carried off-site shall use the wheel cleaner. All water from the wheel cleaning area shall be directed to the trade effluent drainage network.

3.13.3 The wheel-wash shall be inspected on a daily basis and drained as required. Silt, stones and other accumulated material shall be removed as required from the wheel-wash and disposed of appropriately.

3.14 Leachate Management Infrastructure

3.14.1 Leachate management infrastructure shall be provided and maintained at the facility as described in the Application documentation, or as may be varied by a permit condition.

3.14.2 All structures for the transportation, storage and/or treatment of leachate shall be fully enclosed except for inlet and outlet piping.

3.14.3 Headspace gases from the leachate holding tank shall be vented to an appropriate treatment system prior to release to the atmosphere. The proposed treatment method shall be agreed, in advance, by the Council.

3.15 Silt Traps and Oil Separators

3.15.1 The Permit holder shall install and maintain silt traps and oil separator at the facility to ensure that all storm water discharges from the facility pass through a silt trap and oil separator in advance, of discharge. The separator shall be a Class I full retention separator and the silt traps and separator shall be in accordance with I.S. EN 858-2:2003 (separator systems for light liquids).

3.16 The Permit holder shall install on all emission points such sampling points or equipment, including any data-logging or other electronic communication equipment, as may be required by the Council. All such equipment shall be consistent with the safe operation of all sampling and monitoring systems.

3.17 In the case of composite sampling of aqueous emissions from the operation of the facility a separate composite sample or homogeneous sub-sample (of sufficient volume as advised) should be refrigerated immediately after collection and retained as required for Council use.

3.18 The Permit holder shall clearly label and provide safe and permanent access to all on-site sampling and monitoring points and to off-site points as required by the Council.

3.19 The integrity and water tightness of all underground pipes and tanks and their resistance to penetration by water or other materials carried or stored therein shall be tested and demonstrated by the Permit holder and shall be reported to the Council following their installation prior to their use. This testing shall be carried out by the Permit holder at least once every three years thereafter and reported to the Council on each occasion. A written record of all integrity tests and many maintenance or remedial work arising from them shall be maintained by the Permit holder.

3.19 Tank, Container and Drum Storage Areas

3.19.1 All tank, container and drum storage areas shall be rendered impervious to the materials stored therein. Bunds should be designed having regard to Environmental Protection Agency guidelines 'Storage and Transfer of Materials for Scheduled Activities' (2004).

3.19.2 All tank and drum storage areas shall, as a minimum, be bunded, either locally or remotely, to a volume not less than the greater of the following:-

(i) 110% of the capacity of the largest tank or drum within the bunded area; or

(ii) 25% of the total volume of substance which could be stored within the bunded area.

3.19.3 All drainage from bunded areas shall be treated as hazardous waste unless it can be demonstrated to be otherwise. All drainage from bunded areas shall be diverted for collection and safe disposal.

3.19.4 All inlets, outlets, vent pipes, valves and gauges must be within the bunded area.

3.19.5 All tanks, containers and drums shall be labelled to clearly indicate their content

3.20 Compost Facility

3.20.1 Appropriate infrastructure for the composting of waste shall be established and maintained at the facility in advance of any waste being composted. This infrastructure shall at a minimum comprise the following:

3.20.1.1 *In-vessel Composting*

The Permit holder shall provide a composting area and associated infrastructure at the location shown on Drawing No. 03 "Entire Complex Layout" of the application.

3.20.2 To provide for aerobic composting (indoor or outdoor), the Permit holder shall provide the composting material with: a 5% minimum concentration of oxygen within the pore spaces, appropriate moisture levels, pH 6.0-9.0 and appropriate C:N ratio.

Reason: To provide appropriate infrastructure for the protection of the environment.

CONDITION 4 Interpretation

4.1 Emission limit values for emissions to the atmosphere in this permit shall be interpreted in the following way:

4.1.1 Continuous Monitoring:

(i) No 24 hour mean value shall exceed the emission limit value.

(ii) 97% of all 30 minute mean values taken continuously over an annual period shall not exceed 1.2 times the emission limit value.

(iii) No 30 minute mean value shall exceed twice the emission limit value.

4.1.2 For Non-Continuous Monitoring

(i) For any parameter where, due to sampling/analytical limitations, a 30 minute sample is inappropriate, a suitable sampling period should be employed and the value obtained therein shall not exceed the emission limit value.

(ii) For flow, no hourly or daily mean value, calculated on the basis of appropriate spot readings, shall exceed the relevant limit value.

(iii) For all other parameters, no 30 minute mean value shall exceed the emission limit value.

4.2 The concentration and volume flow limits for emissions to atmosphere specified in this permit shall be achieved without the introduction of dilution air and shall be based on gas volumes under standard conditions of:-

4.2.1 In the case of non-combustion gases:

Temperature 273K, Pressure 101.3 kPa (no correction for oxygen or water content).

4.2.2 In the case of combustion gases:

Temperature 273K, Pressure 101.3 kPa, dry gas; 3% oxygen for liquid and gas fuels; 6% oxygen for solid fuels.

4.3 Emission limit values for emissions to sewer/waters in this permit shall be interpreted in the following way:-

4.3.1 Continuous monitoring:

(i) No flow value shall exceed the specified limit.

(ii) No pH value shall deviate from the specified range.

(iii) No temperature value shall exceed the limit value.

4.3.2 Composite Sampling:

(i) No pH value shall deviate from the specified range.

(ii) For parameters other than pH and flow, eight out of ten consecutive composite results, based on flow proportional composite sampling, shall not exceed the emission limit value. No individual result similarly calculated shall exceed 1.2 times the emission limit value.

4.3.3 Discrete Sampling For parameters other than pH and temperature, no grab sample value shall exceed 1.2 times the emission limit value.

4.4 Where the ability to measure a parameter is affected by mixing before emission, then, with agreement from the Council, the parameter may be assessed before mixing takes place.

4.5 Noise

Noise from the facility shall not give rise to sound pressure levels (Leq,T) measured at the boundary of the facility which exceed the limit value(s).

4.6 Dust and Particulate Matter

Dust and particulate matter from the activity shall not give rise to deposition levels which exceed the limit value(s).

Reason: To clarify the interpretation of limit values fixed under the permit.

CONDITION 5 RESTORATION AND AFTERCARE

5.1 In the event of this Permit being revoked or a new Permit not being issued on the expiration of this Permit, whether by way of the Permit holder not applying for a new Permit or the Council not granting a new Permit, the Permit holder shall immediately cease the recovery of material at the facility.

5.2 A proposal for a Decommissioning and Aftercare Plan for the facility shall be submitted to the Council within twelve months from date of issue of this permit. The applicant shall update these schemes when required by the Council.

Reason: To provide for the decommissioning of the facility and aftercare of the facility on which the facility is located.

CONDITION 6 FACILITY OPERATION AND WASTE MANAGEMENT

6.1 Waste Acceptance

- All wastes accepted at the facility shall be in fully covered trailers/containers.

- Within **two months of the date of issue** of this Permit, the Permit holder shall implement procedures at the facility for the inspection of incoming waste so as to ensure that unauthorised waste or foreign bodies are not present in the waste.
- The Permit holder shall implement procedures to ensure that waste accepted at the facility is processed as soon as possible after its arrival at the facility.
- Any waste deemed unsuitable for processing at the facility and/or in contravention of this Permit shall be immediately separated and removed from the facility at the earliest possible time to an appropriate facility agreed with the Council. Temporary storage of such wastes shall be in fully enclosed containers to avoid putrefaction, odour generation, the attraction of vermin and any other nuisance or objectionable condition.
- All waste-imported into/exported from Ireland shall have the appropriate documentation.
- All sewage and effluent plant sludges accepted shall be analysed (on a client by client basis) for metals (as detailed in *C.2*) prior to acceptance at the facility. Subsequent to this initial characterisation, all sewage sludges shall be analysed twice a year and other effluent sludges shall be analysed on an annual basis (all on a client by client basis). Sludges from any new source shall not be accepted without the agreement of the Council

6.2 Operational controls

- All entry and exit doors to the store reception building shall remain locked/closed when not in use. Personnel doors shall have self closing mechanisms
- The floor of the preparation area shall be cleaned of waste on a daily basis.
- All shredding and screening shall be carried out indoors.
- Fuels shall be stored only at appropriately bunded locations on the facility.
- All waste handling/processing plant shall be cleared of all waste and washed down on a weekly basis.
- All wastewater from composting operations shall be collected and re-used in the composting process where possible. Any wastewater from the composting operations that is not re-used shall be either discharged to the wastewater drainage system or tankered off-site for treatment at a location to be agreed in advance by the Council.
- Any biowaste accepted at the facility for composting (other than bulking agents, e.g. woodchip, cardboard) shall be processed and put into the aerated composting area within twelve hours of its arrival at the facility.
- The Permit holder shall ensure that the doors to the biowaste treatment building remain closed at all times other than to facilitate the delivery/removal of wastes from the building.
- The Permit holder shall on a daily basis monitor and record the temperature and the moisture content of the material at a number of locations to be agreed in advance by the Council.

6.3 Process Management and Validation

- All composting processes shall be executed in line with the treatment regimes outlined in *Schedule D: Process Management* of this permit.
- An indicator organism shall be used to validate the compost sanitation steps. This shall be carried out as outlined in *Schedule D: Process Management* of this permit.

6.4 Compost use:

- All stabilised composted organic material is proposed for landfill cover only upon agreement with Environmental Protection Agency.

6.4.1 Compost of Class 1 Standard shall be considered a product.

6.4.2 Compost of Class 2 Standard shall be considered a product.

6.4.3 The recovery or disposal of compost not reaching the standards designated Class 1 or Class 2, shall be recorded as required under Condition 12.1.

6.5 Maintenance

- All treatment/abatement and emission control equipment shall be calibrated and maintained, in accordance with the instructions issued by the manufacturer/supplier or installer. Written records of the calibrations and maintenance shall be made and kept by the Permit holder.
- The Permit holder shall maintain and clearly label and name all sampling and monitoring locations.
- The process water and surface drainage systems shall be inspected twice weekly and cleaned as required. Silt, stones and other accumulated material shall be removed as required to ensure the free movement of water in the systems.

6.6 All wastes removed off site for recovery or disposal shall only be conveyed by an authorized contractor, and shall be transported from the facility to the consignee in a manner, which will not adversely affect the environment.

Reason: To provide appropriate infrastructure for the protection of the environment.

CONDITION 7 EMISSIONS

7.1 No specified emissions from the facility shall exceed emission limit values set out in *Schedule E: Emissions* of this permit. There shall be no other emissions of environmental significance.

7.2 No substance shall be discharged in a manner, or at a concentration that, following initial dilution, causes tainting of fish or shellfish.

7.3 In order to be considered a product, compost must comply with the Quality Standards as outlined in *Schedule C: Compost Quality* of this permit unless otherwise agreed with the Council. Compost not complying with these Quality Standards shall be considered a waste and shall be disposed/recovered to an authorised outlet, as agreed with the Council.

7.4 The Permit holder shall ensure that all operations on-site shall be carried out in a manner such that air emissions including dust and/or odours and/or noise do not result in

significant impairment of or significant interference with amenities or the environment beyond the site boundary.

7.5 Activities on-site shall not give rise to noise levels off site, at the noise sensitive location, as specified in *Schedule B: Monitoring* of this permit, which exceed the sound pressure limits specified in *Schedule E: Emission Limits* of this permit.

7.6 Emissions to Surface Water

- The trigger levels (the achievement or exceedance of a parameter level which requires certain actions to be taken by the Permit holder) for surface water discharges from the facility measured at monitoring point SW-1 are:(a) BOD 25mg/l (b) Suspended Solids 35 mg/l
- No process water or contaminated surface water shall be discharged to surface waters.
- Following the completion of the surface water management infrastructure required by Condition 3.7, there shall only be one surface water discharge from the facility, i.e. SW-1.

7.7 The Permit holder shall ensure that all or any of the following:–

- Vermin
- Birds
- Flies
- Mud
- Dust
- Litter

Which are associated with the activity do not result in an impairment of, or an interference with, amenities or the environment at the facility or beyond the facility boundary or any other legitimate uses of the environment beyond the facility boundary. Any method used by the Permit holder to control or prevent any such impairment/interference shall not cause environmental pollution.

Reason: To control emissions from the facility and provide for the protection of the environment

CONDITION 8 NUISANCES

8.1 The Permit holder shall ensure that the activities at the site shall be carried out in a manner such that emissions do not result in significant impairment of, or significant interference with, the environment beyond the site boundary.

8.2 The Permit holder shall ensure that all vehicles entering or leaving the facility are clean and do not deposit any foreign material on the roadway. Any sludge debris or deposited materials shall be removed without delay.

8.3 The Permit holder shall be deemed liable for any damage to public roads caused as a result of the activities at the facility.

8.4 No wastes shall be stored outside the store building, unless agreed in advance with the Council.

8.5 Any loose litter accumulated within the site and its environs shall be removed daily and appropriately disposed of.

8.6 The Permit holder shall at least weekly, inspect for nuisances caused by vermin, litter or odours. A record shall be kept of all inspections and any actions taken as a result of these inspections.

8.7 The Permit holder shall remove any waste placed on or in the vicinity of the facility other than in accordance with the requirements of the permit immediately such waste is discovered.

Reason: To provide for the control of nuisances.

CONDITION 9 MONITORING

9.1 The Permit holder shall carry out such monitoring and at such locations and frequencies as set out in *Schedule B: Monitoring.* All monitoring shall commence within 2 months from date of issue of this permit, unless otherwise agreed with the Council.

9.1.1 Analysis shall be undertaken by competent staff in accordance with documented operating procedures.

9.1.2 Such procedures shall be assessed for their suitability for the test matrix and performance characteristics determined.

9.1.3 Such procedures shall be subject to a programme of Analytical Quality Control using control standards with evaluation of test responses.

9.1.4 Where analysis is sub-contracted it shall be to a competent laboratory.

9.2 Compost quality shall be monitored at frequencies set out in *Schedule C: Compost Quality* of this permit

9.3 Monitoring of the composting process shall be carried out in respect of the parameters, frequency and methods outlined in *Schedule B*. Monitoring locations are to be agreed with the Council

9.4 The Permit holder shall amend the frequency, locations, methods and scope of monitoring as required by this Permit only upon the written instruction of the Council and shall provide such information concerning such amendments as may be requested in writing by the Council. Such alterations shall be carried out within any timescale nominated by the Council.

9.5 Monitoring and analysis equipment shall be operated and maintained in accordance with the manufacturers' instructions (if any) so that all monitoring results accurately reflect any emission, discharge or environmental parameter.

9.6 The Permit holder shall provide and maintain all sampling and monitoring points so that they may be used for the representative sampling and monitoring of emissions from the facility.

9.7 The Permit holder shall provide safe and permanent access to all on-site sampling and monitoring points and to off-site points as required by the Council.

9.8 Sampling and analysis of all pollutants as well as reference measurement methods to calibrate automated measurement systems shall be carried out in accordance with CEN-standards. If CEN standards are not available, ISO, national or international standards, which will ensure the provision of data of an equivalent scientific quality, shall apply.

9.9 All automatic monitors and samplers shall be functioning at all times (except during maintenance and calibration) when the activity is being carried on unless alternative sampling or monitoring has been agreed in writing by the Council for a limited period. In the event of the malfunction of any continuous monitor, the Permit holder shall contact the Council as soon as practicable, and alternative sampling and monitoring facilities shall be put in place. Agreement for the use of alternative equipment, other than in emergency situations, shall be obtained from the Council.

9.10 Monitoring and analysis equipment shall be operated and maintained as necessary so that monitoring accurately reflects the emission or discharge.

9.11 The Permit holder shall ensure that groundwater monitoring well sampling equipment is available/installed on-site and is fit for purpose at all times. The sampling equipment shall be to Council specifications.

9.12 The frequency, methods and scope of monitoring, sampling and analyses, as set out in this permit, may be amended with the agreement of the Council following evaluation of test results.

9.13 The drainage system, bunds, silt traps and oil separators shall be inspected weekly, desludged as necessary and properly maintained at all times. All sludge and drainage from these operations shall be collected for safe disposal.

9.14 Monitoring Locations

9.14.1 Within three months of the date of grant of this permit, the Permit holder shall submit to the Council an appropriately scaled drawing(s) showing all monitoring locations. The drawing shall include the eight-digit national grid reference of each monitoring point.

9.15 Litter Control

9.15.1 All loose litter or other waste, placed on or in the vicinity of the facility, other than in accordance with the requirements of this permit, shall be removed, subject to the agreement of the landowners, immediately and in any event by 10.00am of the next working day after such waste is discovered.

9.15.2 The Permit holder shall ensure that all vehicles delivering waste to and removing waste and materials from the facility are appropriately covered.

9.16 Compost Quality

9.16.1 In order not to be considered a waste, compost produced by the facility shall, unless otherwise agreed by the Council comply with the quality standards established in *Schedule C: Compost Quality,* of this permit. Analysis of the compost shall be in accordance with the requirements of that Schedule.

9.16.2 Any compost not meeting any standard as per *Schedule C: Compost Quality*, of this permit may be reused in the process or handled as a waste and details recorded as per Waste Records condition 12.2.

9.16.3 No waste shall be deposited outside the biodegradable waste composting area without the prior permission of the Council.

Reason: To provide for the protection of the environment.

CONDITION 10 Resource Use & Energy Efficiency

10.1 The Permit holder shall carry out an audit of the energy efficiency of the site within one year of the date of grant of this permit. The audit shall be carried out in accordance with the guidance published by the Environmental Protection Agency; "Guidance Note on Energy Efficiency Auditing". The energy efficiency audit shall be repeated at intervals as required by the Council.

10.2 The audit shall identify all opportunities for energy use reduction and efficiency and the recommendations of the audit will be incorporated into the Schedule of Environmental Objectives and Targets under Condition 2.7.2.2 above.

10.3 The Permit holder shall identify opportunities for reduction in the quantity of water used on site including recycling and reuse initiatives, wherever possible. Reductions in water usage shall be incorporated into Schedule of Environmental Objectives and Targets.

10.4 The Permit holder shall undertake an assessment of the efficiency of use of raw materials in all processes, having particular regard to the reduction in waste generated. The assessment should take account of best international practice for this type of activity. Where improvements are identified, these shall be incorporated into the Schedule of Environmental Objectives and Targets.

Reason: To provide for the efficient use of resources and energy in all site operations.

CONDITION 11 CONTINGENCY ARRANGEMENTS

11.1 Unless otherwise notified in writing by the Council, in the event that any monitoring, sampling or observations indicate that an incident has, or may have, taken place, the Permit holder shall immediately:

- Identify the date, time and place of the incident;
- Carry out an immediate investigation to identify the nature, source and cause of the incident and any emission arising there from;
- Isolate the source of any such emission;
- Evaluate the environmental pollution, if any, caused by the incident;
- Identify and execute measures to minimise the emissions/malfunction and the effects thereof; and
- Provide a proposal to the Council for its agreement within one month of the incident occurring to:

  (i) Identify and put in place measures to avoid recurrence of the incident.
  (ii) Identify and put in place any other appropriate remedial action.

11.2 The Permit holder shall have in storage an adequate supply of containment booms and/or suitable absorbent material to contain and absorb any spillage at the facility. Once used the absorbent material shall be disposed of at an appropriate facility.

11.3 The Permit holder shall ensure that an Emergency Response Procedure (EPR) is in place to address any emergency situation, which may originate at the site. This procedure shall include provision for minimising the effects of any emergency on the environment. It shall include a risk assessment to determine the requirements at the facility for fire fighting and firewater retention facilities. This EPR should be submitted to the Council not more than 6 months after the grant of the permit.

- All significant spillages occurring at the facility shall be treated as an emergency and immediately cleaned up and dealt with so as to alleviate their effects.
- No waste shall be burnt within the boundaries of the facility. A fire at the facility shall be treated as an emergency and immediate action shall be taken to extinguish it and notify the appropriate authorities.
- In the event that monitoring of local wells indicates that the facility is having a significant adverse effect on the quantity and/or quality of the water supply this shall be treated as an emergency and the Permit holder shall provide an alternative supply of water to those affected.

11.4 In the event of a complete breakdown of equipment or any other occurrence which results in the closure of the biowaste reception building (including the anaerobic digestion building), any putrescible waste arriving at or already collected at the facility, where necessary shall be transferred directly to appropriate landfill sites or any other appropriate facility until such time as the building(s) is returned to a fully operational status. Such a breakdown event will be treated as an emergency and rectified as soon as possible.

Reason: To ensure compliance with the conditions of this permit by the provision of a satisfactory system of recording and dealing with incidents.

CONDITION 12 RECORDS

12.1 The Permit holder shall maintain records of each load (including any contaminated/process water removed off site) of waste arriving and departing from the facility. The Permit holder shall record the following:

- The date;
- The name of the carrier (including if appropriate, the waste carrier registration details);
- The vehicle registration number;
- The name of the producer(s)/collector(s) of the waste as appropriate;
- A description of the waste including the associated EWC codes;
- The quantity of the waste, recorded in tonnes;
- The name of the person checking the load;
- Where loads or wastes are removed or rejected, details of the date of occurrence, the types of waste and the facility to which they were removed; and,
- C1/TFS documentation where relevant.

12.2 Written Records

The following written records shall be maintained by the Permit holder:

- The types and quantities of waste recovered at the facility each year. These records shall include the relevant EWC Codes;
- The quantities of compost produced each year;
- Copies of compost quality monitoring results for the facility for the preceding twelve months;
- All training undertaken by facility staff;
- Results of all integrity tests of bunds and other structures and any maintenance or remedial work arising from them;
- Details of all nuisance inspections;
- Details of all surface water and process water system inspections;
- Details of all process control parameters that are routinely monitored;
- Details of all waste materials and finished product that are removed off-site; and
- The names and qualifications of all persons who carry out all sampling and monitoring as required by this permit and who carry out the interpretation of the results of such sampling and monitoring.
- Register of all landspreading of compost containing sewage sludge as per the Waste Management (Use of Sewage Sludge in Agriculture) Regulations, 1998-2001.

12.3 The Permit holder shall record all complaints of an environmental nature related to the operation of the activity. Each record shall give details of the date and time of the complaint, the name of the complainant and give details of the nature of the complaint. A record shall be kept of the response made in the case of each complaint. The Permit holder shall submit a report to the Council, during the month following the complaints, giving details of any complaints that arise.

12.4 The Permit holder shall make all records maintained on site available to South Tipperary County Council staff at all reasonable times, and shall provide any relevant information when so requested by an authorised person of South Tipperary County Council.

12.5 Where compost/digestate product contains sewage sludge the applicant shall retain the following records on site:

- A copy of the notification to the Local Authority as required under Article 8 (1) and Article 8 (3) of SI 148 of 1998 (Waste Management (Use of Sewage Sludge in Agriculture) Regulations, 1998).
- This shall include *inter alia*; sludge analysis, records of sludge quantities, sludge properties, treatment type and location/name of the recipient of the sludge (sludge meaning compost/digestate containing treated sludge).

Reason: To provide for the keeping of proper records of the operation of the facility.

CONDITION 13 REPORTS AND NOTIFICATION

13.1 All communication with South Tipperary County Council shall be addressed to the Administrative Officer, South Tipperary County Council, Environment Section, Old Museum, Parnell St., Clonmel, Co. Tipperary.
Telephone (052) 26149, Fax: (052) 34391

13.2 The Permit holder shall notify the Council immediately it becomes aware of any breach of the terms of this Permit. It shall submit a written report detailing the breaches of the Permit within 3 working days of such breaches occurring.

13.3 An Annual Environmental Report (AER) for the proceeding calendar year shall be forwarded to the County Council no later than February 28th of each year. The AER shall include details of:

- The management and staffing structure of the facility
- Any impositions or convictions under the Waste Management Act 1996.
- The quantity, composition and destination of all waste accepted and disposed of at the facility during the year.
- All wastes / loads rejected from the facility and where they were sent to.
- Contracts for the disposal of wastes produced.
- All reportable incidents.
- The status of the Environmental Management Systems ISO 9002 / 14001(if applicable).
- Annual certification of fire fighting equipment
- A written summary of how compliance with all of the conditions attached to this permit was achieved.

13.4 All reports required throughout this Permit shall highlight all results or other items that do not comply with the terms or limits contained in this Permit. If there are any such breaches or items the Permit holder shall include in the report its detailed proposals for ensuring that no similar occurrences or breaches occur in the future.

13.5 The Permit holder shall notify the Council within seven days in the event of either the Permit holder or any of its officers has either:

- Any requirement imposed on it / them under Section 57 or 58 of the Waste Management Act 1996.
- Been convicted of any offence under Section 34(5) or 40(7) of the Waste Management Act 1996.

13.6 The Permit holder shall notify the Council when the limit on the amount of material accepted at the site is achieved, by way of actual quantity or by way of reaching any permitted levels.

13.7 Recording and Reporting shall be carried out as per *Schedule F Recording and Reporting to South Tipperary County Council.*

Reason: To provide for the notification of incidents, to update information on the activity and to provide for the keeping of records.

CONDITION 14 CHARGES AND FINANCIAL PROVISIONS

14.1 The Permit holder shall pay an annual contribution of €**3000** to South Tipperary County Council towards the costs of inspecting, monitoring or otherwise performing any functions in relation to the permit activity. The Permit holder shall pay to South Tipperary County Council this amount within 30 days of receipt of this permit and thereafter on an annual basis. The amount payable in subsequent years shall be updated in accordance with changes in the consumer price index from the date of the grant of permit to the renewal date.

14.1 In the event that the frequency or extent of monitoring or other functions carried out by the Council needs to be increased for whatever reason the Permit holder shall contribute such sums as are determined by the local authority to defray costs.

Reason: To provide for adequate financing for monitoring and for financial provisions for environmental protection measures.

Schedule A: Waste Acceptance

EWC Code	Additional Comments and Use Restrictions
020101	only if it fulfils the requirements of SI 267 of 2001 Waste Management (Use of Sewage Sludge in Agriculture) Regulations, 1998 to 2001 without prejudice to SI 248 of 2003 European Communities (Animal By-products) Regulations, 2003.
020101	only if it fulfils the requirements of SI 267 of 2001 Waste Management (Use of Sewage Sludge in Agriculture) Regulations, 1998 to 2001 without prejudice to SI 248 of 2003 European Communities (Animal By-products) Regulations, 2003.
020102	only for animal tissues deemed to be fit for human consumption and as a left-over of food preparations and without prejudice to SI 248 of 2003 European Communities (Animal By-products) Regulations, 2003
020103	
020106	excluding swill as defined in S.I. No. 597 of 2001 Disease of Animals Act 1966(Prohibition on the Use of Swill) Order, 2001
020107	
020201	only if it fulfils the requirements of SI 267 of 2001 Waste Management (Use of Sewage Sludge in Agriculture) Regulations, 1998 to 2001 without prejudice to SI 248 of 2003 European Communities (Animal By-products) Regulations, 2003.
020202	only for animal tissues deemed to be fit for human consumption and as a left-over of food preparations and without prejudice to SI 248 of 2003 European Communities (Animal By-products) Regulations, 2003
020203	without prejudice to SI 248 of 2003 European Communities (Animal By-products) Regulations, 2003
020204	only if it fulfils the requirements of SI 267 of 2001 Waste Management (Use of Sewage Sludge in Agriculture) Regulations, 1998 to 2001 without prejudice to SI 248 of 2003 European Communities (Animal By-products) Regulations, 2003
020299	
020301	only if it fulfils the requirements of SI 267 of 2001 Waste Management (Use of Sewage Sludge in Agriculture) Regulations, 1998 to 2001 without prejudice to SI 248 of 2003 European Communities (Animal By-products) Regulations, 2003.
020304	without prejudice to SI 248 of 2003 European Communities (Animal By-products) Regulations, 2003
020305	only if it fulfils the requirements of SI 267 of 2001 Waste Management (Use of Sewage Sludge in Agriculture) Regulations, 1998 to 2001 without prejudice to SI 248 of 2003 European Communities (Animal By-products) Regulations, 2003.
020399	
020402	
020403	only if it fulfils the requirements of SI 267 of 2001 Waste Management (Use of Sewage Sludge in Agriculture) Regulations, 1998 to 2001
020501	without prejudice to SI 248 of 2003 European Communities (Animal By-products) Regulations, 2003.
020502	only if it fulfils the requirements of SI 267 of 2001 Waste Management (Use of Sewage Sludge in Agriculture) Regulations, 1998 to 2001 without prejudice to

	SI 248 of 2003 European Communities (Animal By-products) Regulations, 2003
020599	only if it fulfils the requirements of SI 267 of 2001 Waste Management (Use of Sewage Sludge in Agriculture) Regulations, 1998 to 2001 without prejudice to SI 248 of 2003 European Communities (Animal By-products) Regulations, 2003
020601	only if it fulfils the requirements of SI 267 of 2001 Waste Management (Use of Sewage Sludge in Agriculture) Regulations, 1998 to 2001 without prejudice to SI 248 of 2003 European Communities (Animal By-products) Regulations, 2003.
020603	
020701	
020702	
020704	
020705	only if it fulfils the requirements of SI 267 of 2001 Waste Management (Use of Sewage Sludge in Agriculture) Regulations, 1998 to 2001 without prejudice to SI 248 of 2003 European Communities (Animal By-products) Regulations, 2003.
020799	
030101	
030105	
030301	
030302	
030305	only if it fulfils the requirements of SI 267 of 2001 Waste Management (Use of Sewage Sludge in Agriculture) Regulations, 1998 to 2001 without prejudice to SI 248 of 2003 European Communities (Animal By-products) Regulations, 2003.
030307	
030308	
030309	
030310	only if it fulfils the requirements of SI 267 of 2001 Waste Management (Use of Sewage Sludge in Agriculture) Regulations, 1998 to 2001 without prejudice to SI 248 of 2003 European Communities (Animal By-products) Regulations, 2003.
030311	only if it fulfils the requirements of SI 267 of 2001 Waste Management (Use of Sewage Sludge in Agriculture) Regulations, 1998 to 2001 without prejudice to SI 248 of 2003 European Communities (Animal By-products) Regulations, 2003.
070512	Only once prior approval has been given by South Tipperary County Council. All sources of waste sludge shall be treated individually. Incoming sludges shall be monitoring on quarterly basis.
150101	
150103	
190604	
190606	excluding swill as defined in S.I. No. 597 of 2001 Disease of Animals Act 1966(Prohibition on the Use of Swill) Order, 2001
190805	only if it fulfils the requirements of SI 267 of 2001 Waste Management (Use of Sewage Sludge in Agriculture) Regulations, 1998 to 2001 without prejudice to SI 248 of 2003 European Communities (Animal By-products) Regulations, 2003.
190814	only if it fulfils the requirements of SI 267 of 2001 Waste Management (Use of Sewage Sludge in Agriculture) Regulations, 1998 to 2001 without prejudice to SI 248 of 2003 European Communities (Animal By-products) Regulations, 2003
190901	

190902	only if it fulfils the requirements of SI 267 of 2001 Waste Management (Use of Sewage Sludge in Agriculture) Regulations, 1998 to 2001 without prejudice to SI 248 of 2003 European Communities (Animal By-products) Regulations, 2003
190903	only if it fulfils the requirements of SI 267 of 2001 Waste Management (Use of Sewage Sludge in Agriculture) Regulations, 1998 to 2001 without prejudice to SI 248 of 2003 European Communities (Animal By-products) Regulations, 2003
200101	The addition of high-gloss paper and waste wallpaper is not permitted.
200108	
200138	
200201	Except grass and brush cuttings from roadside
200301	Only for mechanical/biological treatment.
200302	Only if biowaste is separately collected
200304	only if it fulfils the requirements of SI 267 of 2001 Waste Management (Use of Sewage Sludge in Agriculture) Regulations, 1998 to 2001 without prejudice to SI 248 of 2003 European Communities (Animal By-products) Regulations, 2003
	The amount of compost and organic waste held at the facility shall not exceed 1000 cubic metres at any one time

- **Total of the above not to exceed 15,000 tonnes and the volume of erratics consigned for disposal annually shall be less than 5,000 tonnes.**

Schedule B Monitoring

B1 Monitoring Locations Monitoring to be carried out at the following locations

Parameter	Monitoring Point
Dust and Bioaersols	O1, O2 & sensitive receptor
Noise	N1, N2
Surface Water	S1
Groundwater	W1, W2,
Air and Odour	Biofilters

B2 Surface Water Monitoring

Parameter[note1]	Monitoring Frequency	Analysis Method/Technique
Visual	Weekly	Not Applicable
Ammonical Nitrogen	Annual	ISE / Colorimetry
BOD	Annual	Electromentry / Titrimetry with nitrification inhibitor
Chloride	Annual	Colorimetry / Ion Chromatography
Electrical Conductivity	Annual	Electrometry
pH	Annual	Electrometry
Total Suspended Solids	Annual	Gravimetry
Coliforms (total, faecal)	Annual	Membrane filtration of MPN referenced procedures

Note 1: All analyses shall be carried out by a competent laboratory using standard and internationally acceptable techniques. The testing laboratory and the testing technique shall be agreed with the permitting authority in advance

B3 Groundwater Monitoring

Parameter[note 1]	Monitoring Frequency	Analysis Method/Technique
Groundwater level	Annual	Not Applicable
Ammonical Nitrogen	Annual	ISE / Colorimetry
Chloride	Annual	Colorimetry / Ion Chromatography
Electrical Conductivity	Annual	Electrometry
pH	Annual	Electrometry
Coliforms (total, faecal)	Annual	Membrane filtration of MPN referenced procedures

Note 1: All analyses shall be carried out by a competent laboratory using standard and internationally acceptable techniques. The testing laboratory and the testing technique shall be agreed with the permitting authority in advance

B4 Air and odour monitoring [Note 1]

Biofilter

Parameter	Monitoring Frequency	Analysis Method / Technique
Bed Media		
Odour assessment [Note 2]	Daily	Subjective Inspection
Condition and depth of biofilter [Note 3]	Daily	Visual Inspection
Moisture content		
pH	Annual	Standard laboratory method
Ammonia	Annual	PH probe
Total viable counts	Annual	Standard laboratory method
	Annual	Standard laboratory method
Inlet and Outlet Gas		
Ammonia	Annual	Colourimetric Indicator Tubes
Hydrogen Sulphide	Annual	Colourimetric Indicator Tubes
Mercaptans	Annual	Colourimetric Indicator Tubes

Note 1: All analyses shall be carried out by a competent laboratory using standard and internationally acceptable techniques. The testing laboratory and the testing technique shall be agreed with the permitting authority in advance.

Note 2: This subjective assessment should be carried out by a staff member immediately upon arriving on site.

Note 3: The biofilter shall be examined to ensure that no channelling is evident, and that moisture content is adequate. Watering, turning, restructuring and the addition of supplementary bed materials, or total bed replacement.

B5 Noise Monitoring

Parameter	Monitoring Frequency	Analysis Technique / Method
$L(A)_{EQ[30mins]}$	Annual	Standard[note1]
$L(A)_{10[30mins]}$	Annual	Standard[note1]
$L(A)_{90[30mins]}$	Annual	Standard[note1]
Frequency Analysis(1/3 Octave band analysis)	Annual	Standard[note1]

Note1 "International Standards Organisation. ISO 1996 Acoustics – Description & Measurement of Environmental noise. Parts 1,2 & 3."

B6: Monitoring of composting process

Parameter	Monitoring Frequency	Monitoring equipment / method
• **Aerated static piles Temperature vs. time**	Continuous	Temperature probe / recorder
• **Compost Maturation (curing) piles Temperature** ***Moisture***	Daily Daily	Temperature probe Subjective by operator
• **Compost storage piles *Temperature***	Weekly	Temperature probe

B7: Dust and Bioaerosol Monitoring Frequency and Technique

Parameter	Monitoring Frequency	Analysis Method / Technique
PM_{10}($\mu g/m^3$)	Annual	See [Note 4]
Aspergillus fumigatus	Annual	Grab sample [Note3]
Mesophilic bacteria	Annual	Grab sample [Note 3]
Dust Deposition (mg/m^2/day)	Annual	Standard Method [Note1,2]

Note 1: Standard method VDI2119 (Measurement of Dustfall, Determination of Dustfall using Bergerhoff Instrument (Standard Method) German Engineering Institute).
Note 2: Twice during the period May to September.
Note 3: Enumeration of colonies to be carried out as described in ' Standardised Protocol for the Sampling and Enumeration of Airborne Micro-organisms at composting Facilities' the UK Composting Association 1999
Note 4: As described in prEN12341' *Air Quality-field test procedure to demonstrate reference equivalence of sampling methods for PM10 fraction of particulate matter'* or an alternative to be agreed with the permitting authority**.**

Schedule C – Compost Quality.

Compost shall be deemed unsatisfactory if more than 10% of samples fail the criteria below. No sample shall exceed 1.2 times the quality limit values set

1. Maturity

The state of the curing pile must be conducive to aerobic biological activity.

Compost shall be deemed to be mature if it meets two of the following groups of requirements:

1. Respiration activity after four days AT_4 is $\leq$ 10mg/O_2/g dry matter or Dynamic Respiration Index is $\leq$ 1000mgO_2/kg VS/h.

2. Germination of cress (*Lepidium sativum)* seeds and of radish *(Raphanus sativus)* seeds in compost must be greater than 90 percent of the germination rate of the control sample, and the growth rate of plants grown in a mixture of compost and soil must not differ more than 50 percent in comparison with the control sample

3. Compost must be cured for at least 21 days; and Compost will not reheat upon standing to greater than 20°C above ambient temperature.

4. If no other determination of maturity is made, the compost must be cured for a six month period. In addition offensive odours from the compost shall be minimal for the compost to be deemed mature.

5. Elimination of the following test organisms (used to evaluate composting system efficiency in removing plant pathogens and weed seeds during the composting process): Plasmodiophora brassicae, tobacco-mosaic-virus (TMV) and tomato seeds.

6. C/N ratio ≤ 25

7. Or other maturity tests as may be agreed with the Council.

2. Trace Elements Note 1 & 2

Maximum Trace Element Concentration Limits Note 3

Parameter (mg/kg, dry mass)	Compost Quality Standard – Class 1 Note 4	Compost Quality Standard – Class 2 Note 4	Stabilised biowaste Note 4
Cadmium (Cd)	0.7	1.5	5
Chromium (Cr)	100	150	600
Copper (Cu)	100	150	600
Mercury (Hg)	0.5	1	5
Nickel (Ni)	50	75	150
Lead (Pb)	100	150	500
Zinc (Zn)	200	400	1500
Polychlorinated Biphenyls (PCB's)	-	-	0.4
Polynuclear Aromatic Hydrocarbons (PAH's)	-	-	3

Impurities>2mm Note 5	<0.5%	<0.5%	<3%
Gravel and Stones>5mm Note 5	<5%	<5%	-

Note 1: These limits apply to the compost just after the composting phase and prior to mixing with any other materials
Note 2: Incoming sludges shall be monitored quarterly (on a client by client basis) for the parameters outlined in this table.
Note 3: The above alone should not be taken as an indication of suitability for addition to soil as the cumulative metal additions to soil should be first calculated.
Note 4: Normalised to 30% organic matter.
Note 5: Compost must not contain any sharp foreign matter measuring over 2 mm dimension that may cause damage or injury to humans, animals and plants during or resulting from its intended use.

Compost and stabilised biowaste shall be assumed to belong to a specified class or type if, for each relevant parameter considered individually, samples show that compost and stabilised biowaste comply with the relevant parameter as in the following table

Series of samples taken in any twelve month period	**Maximum permitted number of samples which fail to conform to any given parameter**	**Allowed deviation from statutory limit of samples which fail to conform to any given parameter**
2	1	20%
4	1	20%
12	3	20%

These limits apply to the compost just after the composting phase and prior to any mixing with other materials.

3. Pathogens

Pathogenic organism content must not exceed the following limits:

Salmonella sp.	Absent in 50g	n=5
Faecal Coliforms	$\leq$ 1000 Most Probable Number (MPN) in 1g	n=5

Where: n=Number of samples to be tested

4. Monitoring

The Permit holder shall submit to the Council for its agreement, prior to commencement of compost operations, details of methods of analyses, methods of sampling and sample numbers.
The analyses shall be carried out:

(a) every six months for plants producing more than 500 and up to 1,000 tonnes of treated biowaste per year;

(b)at intervals of at least every 1,000 tonnes of treated biowaste produced or every 3 months, whichever comes first, for plants producing more than 1,000 and up to 10,000 tonnes of treated biowaste per year;

(c) every month for plants producing more than 10,000 tonnes of treated biowaste per year.

Schedule D: Process Management

Table D.1 Composting. During the composting process the entire quantity of biowaste being composted shall be exposed to the following temperature [Note 1]:

Temperature	**Treatment time**
At least 60°C	7 days[Note 1]

Note 1: Biowaste may be exposed to 60°C on two occasions and total exposure must accumulate to 7 days.

Table D.2 Category 3 Material. All Category 3 Animal By-Product Waste shall be exposed to the following processing regime

Temperature	**Particle Size**	**Treatment time**
70°C	12mm	60 minutes

Table D.3 Process validation. The composting process shall be tested using the following indicator organism [Note 1].

Indicator Organism	**Frequency**
Salmonella spp.	Annually [Note 2]

Note 1: Unless otherwise agreed with the permitting authority.
Note 2: This test shall be repeated if major changes to either the composition of the incoming biowaste or the treatment process are made.

Schedule E Emissions Limits

E.1 Dust Deposition Limits 350 mg/m^2/day (30 day composite sample)

E.2 Noise Emission Limits

Day dB (A) $L(A)_{EQ[30mins}$	Night dB (A) $L(A)_{EQ[30mins}$
55	45

E.3 Emission Limits for Biofilter

Parameter	**Emission Limit Value**
Ammonia	50mg/m^3
Hydrogen Sulphide	5mg/m^3
Mercaptans	5mg/m^3

E.4 Emission Limits for surface Water (trigger level values)

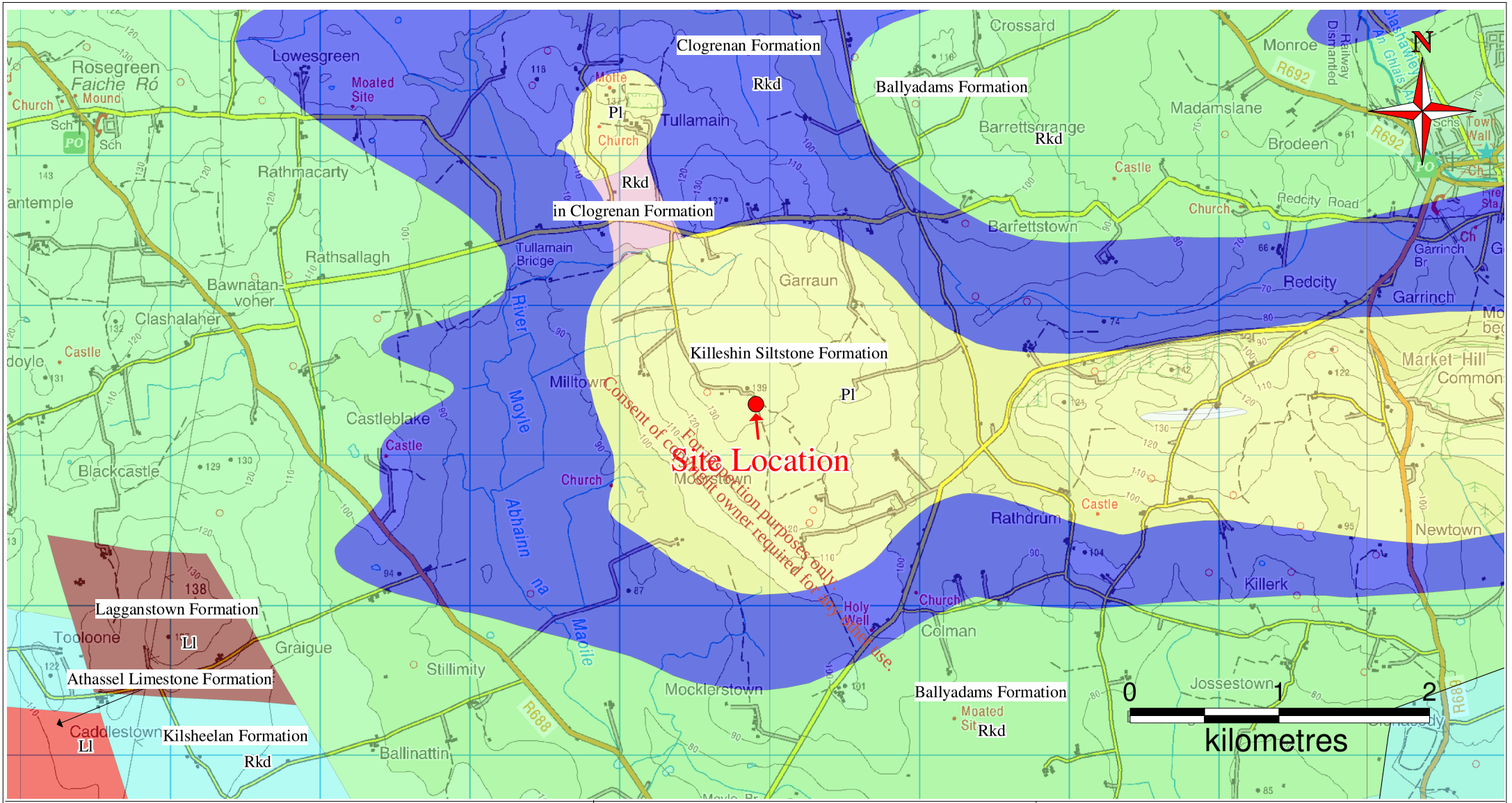
Parameter	**Emission Limit Value**
BOD mg/l	25mg/l
Suspended solids	35mg/l

SCHEDULE F: Recording and Reporting to South Tipperary County Council

Report	Reporting Frequency	Report Submission Date
Annual Environmental Report	Annually	28th February
Record of incidents	As they occur	Within five days of the incident.
Air Monitoring (Biofilter)	Annually	One month after completion of the monitoring.
Surface water monitoring	Annually	Ten days after end of quarter being reported on.
Noise and groundwater monitoring	Annually	Ten days after end of year being reported on.
Compost quality monitoring	Quarterly	Ten days after end of quarter being reported on.
Dust / Bioaerosol monitoring	Annually	One month after completion of the monitoring.
Any other monitoring	As they occur	Within ten days of obtaining results.

APPENDIX 2

Geology/Hydrogeology



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environmental management for business

CLIENT

Miltown Composting Systems

TITLE

Bedrock Aquifer Map

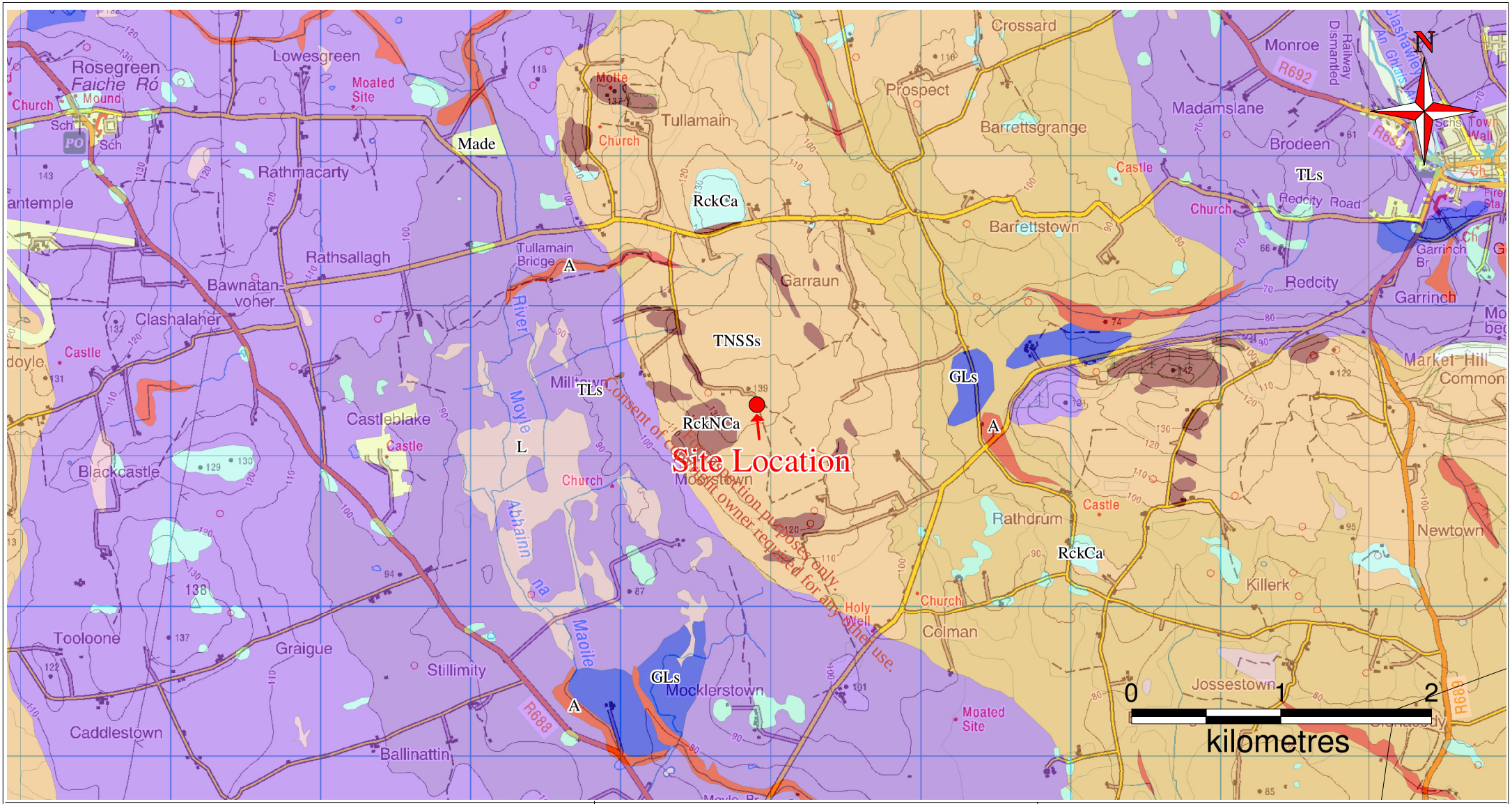
LEGEND

- Athassel Limestone Formation
- Ballyadams Formation
- Clogrenan Formation
- in Clogrenan Formation
- Killeshin Siltstone Formation
- Kilsheelan Formation
- Lagganstown Formation

Pl - Poorly Productive Aquifer Bedrock which is Generally Unproductive except for Local Zones

Ll - Locally Important Aquifer Bedrock which is Moderately Productive only in Local Zones

Rkd- Regionally Important Karstified Aquifer



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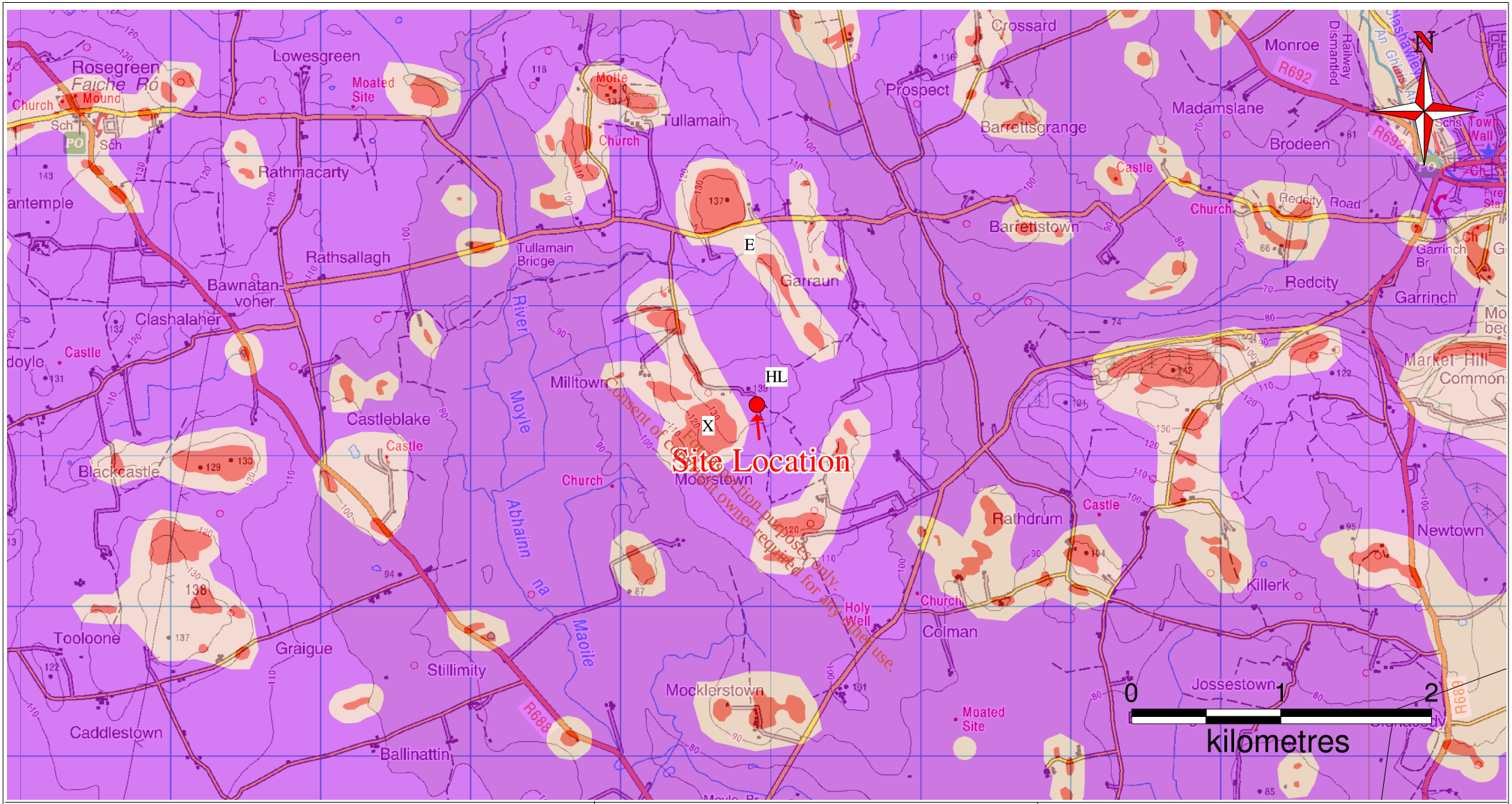
Subsoil Map

LEGEND

- A - Alluvium
- GLs -Limestone Sands & Gravels (Carboniferous)
- L - Lake Sediments (Undifferentiated)
- Made - Made Ground
- RckCa - Rock near surface (Calcareous)
- RckNCa - Rock near surface (Non-Calcareous)
- TLs - Limestone Till (Carboniferous)
- TNSSs - Shales & Sandstone Till (Namurian)



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TITLE

Vulnerability Map

LEGEND

- X - Extreme Rock Near Surface
- E - Extreme
- HL - High to Low