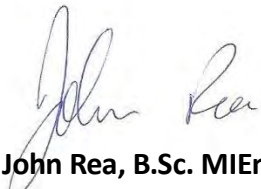


**FIRE RISK ASSESSMENT REVIEW - MILTOWN
COMPOSTING FACILITY, MILTOWNMORE,
FETHARD, CO. TIPPERARY**

Prepared for:

**Miltown Composting Ltd.
Miltownmore,
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1. INTRODUCTION

Miltown Composting Ltd. (Miltown) operate a composting facility at Miltownmore, Fethard, Co. Tipperary. The site currently operates under an Environmental Protection Agency Waste Licence (Ref. W0270-01). In June 2016 an amendment was made to the site Waste Licence to include an additional licence Condition 9.5. Under the new Condition 9.5:

The licensee shall arrange, within six months of the date of this amendment and every three years thereafter or as directed by the Agency, for the completion, by an independent and appropriately qualified consultant, of a fire risk assessment for the facility. The assessment shall examine all relevant factors on site that impinge on fire risk and prevention. The assessment shall have regard to the EPA Guidance Note: Fire Safety at Non Hazardous Waste Transfer Stations, 2013 and the EPA Guidance on Fire Risk Assessment for Non-Hazardous Waste Facilities, 2016. Any recommendations in the fire risk assessment report shall be implemented by the licensee within twelve months of the date of this amendment.

This document is a review of the fire risk assessment completed in 2017 and incorporates a Fire Risk Assessment (FRA) for the Miltown facility prepared with reference to the EPA Guidance Note: Fire Safety at Non Hazardous Waste Transfer Stations, 2013 and *the* EPA Guidance on Fire Risk Assessment for Non-Hazardous Waste Facilities, 2016. As part of the storage requirements for assessing fire risk from the storage of loose waste or compost piles on site the assessment was also prepared with reference with WISH 2017 'Reducing Fire Risk at Waste Management Sites' and the Environment Agency 2016 Guidance Document on Fire Prevention Plans. The scope of work completed for the fire risk assessment is provided below.

1.1. Site Description

Miltown Composting Ltd. operates a composting facility at Miltownmore, Fethard, Co. Tipperary. The composting is an in-vessel system 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 blending with bulking agents, composting in separate enclosed tunnels and open bays, maturation in windrows and post treatment screening 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, be used for horticultural and agricultural purposes, or as landfill cover.

1.2. Site Operations and Facilities

The process is divided into three separate areas, outlined below:

- Waste reception and blending is completed in the reception shed building. Organic material is received through the roller shutter door at the waste intake area of the reception shed. If required, the material is blended and bulking material (i.e., wood chip) is added to the pile to provide for better air dispersion through the material during the composting process.
- Blended organic material is transferred from reception to the composting bays in Shed 1 using a front end loader. The material placed in each of the bays is assigned an individual batch number to allow performance monitoring during the treatment stages and ensure the maintenance of

accurate records. Temperature probes are placed within the composting material and there is a computerized process control system, located in the site office, which records the temperature in each bay to ensure that optimum composting conditions are maintained. In addition to the constant temperature monitoring the vessels contain a forced air system and oxygen levels are maintained through on going positive air input to the vessels. 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 barriers' system is operated in the MSW/kitchen/catering waste processing area and is the pre-primary process. The objective is to ensure a maximum particle size of 40mm and to achieve a sustained temperature of 60°C over two separate 48 hour periods. The MSW fines typically have a particle size less than 50mm and do not require additional processing. Large items are manually removed before the materials are composted. Maintaining the temperature at 60°C for the required two separate time periods is achieved by composting the same compost batch in two different vessels. In the first vessel, or Barrier 1, the process usually takes one week and when completed, the material is transferred 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 loaders and buckets are used to move the materials into and out of the composting vessels.
- When the material has completed the thermophilic stage it is removed from the second pre-primary process vessel and transferred to Sheds 2 and 3 where it is matured. Temperature, oxygen and moisture content are regularly monitored and the moisture and turning regime revised as required to ensure optimum conditions. The finished compost may, depending on the nature of the source material, need to be screened to remove contaminants (e.g., plastics). These contaminants are removed and stored on-site, pending consignment to off-site disposal/treatment facilities.

2. SCOPE OF WORK

The tasks completed in the scope of work for the preparation of the Fire Risk Assessment (FRA) for the Miltown facility were based on those outlined in Part 3 of the EPA Guidance on Fire Risk Assessment for Non-Hazardous Waste Facilities, 2016 and included:

- Identification of existing and potential fire hazards;
- Assessment of fire risks inside and outside the facility building;
- Identification of existing fire control measures and recommendations on further reduction of fire risk;
- Assessment of fire prevention planning;
- Assessment of fire detection and warning systems;
- Assessment of fire-fighting systems in place on site;
- Recommendation for fire quarantine location in facility;

- Assessment of controls to limit fire spread on site;
- Assessment of security arrangements on site
- Access for emergency services in the event of a fire
- Preparation of a site plan showing fire-fighting and prevention systems, quarantine area; and
- building layout, high risk areas and utility locations.

For the preparation of this document the following guidance documents were referenced;

- Guidance Note: Fire Safety at Non-Hazardous Waste Transfer Stations, EPA, 2013;
- Guidance on Fire Risk Assessment for Non-Hazardous Waste Facilities, EPA, 2016;
- Fire Prevention Plans - Environment Agency, 2016; and
- Reducing Fire Risk at Waste Management Sites (Waste Industry Safety and Health Forum 2017).

3. FIRE HAZARD RISK ASSESSMENT

Fire hazard risk assessment was undertaken by completing a site walkover and inspection, including; observation of site operations, infrastructure and equipment, storage of compost, amendment material storage, screened waste material storage and site characteristics to assess potential fire risks associated with the site both internally and externally. Details of the fire risk assessment are provided below.

3.1. Potential Sources of Ignition and Combustible Material






With reference to Chapter 2 of the EPA Guidance Note: Fire Safety at Non-Hazardous Waste Transfer Stations, 2013; the main sources of ignition at the Miltown facility were identified based on the site operations and materials handled on site observed during the site walkover completed on January 3rd, 2019. A list of the potential sources of ignition are provided in Table B below.

Table B – Potential Ignition Sources

Ignition Source
Smoking
Vehicle Exhausts
Frictional generated heat from mechanical equipment
Poorly installed or maintained equipment motors
Static charge from conveyor belts
Faulty or misused electrical equipment
Obstruction of equipment ventilation
Heating of processing or maturing compost piles
Malicious ignition (arson / vandalism)

Combustible material on the Miltown site consisted of screened plastics, vehicle fuel, non-composted organics etc. that is stored on site. It should be noted that there is minimal storage of waste material prior to, or following processing. The majority of organic material is within the processing phase for the majority of its time in the compost facility and is monitored on an on-going basis. The combustible materials identified during the site walkover completed on January 3rd, 2019 are outlined in Table C below.

Table C – Combustible Materials Observed on Miltown Site

Combustible Material	Location	
Diesel Fuel Storage Tank	Locked Storage shed located at the entrance to the reception building. The shed has a bunded concrete floor and a concrete base wall up to approximately 1.5 meters. The remaining walls and roof are metal sheeting construction. The area is connected to, but outside the reception shed.	
Screened Plastic / Organic mixed Material and Overs	Stored at end of trommel screen in storage shed 2 to the northeast of the main process shed building. Plastic material with residual organics is transferred off site for recovery by a licensed contractor. Overs are returned to the amendment store or disposed of at landfill.	
Organic oversized material and wood chip amendment material.	Wood chip amendment material is stored on site in a dedicated bay in the reception building for blending with the organic feedstock prior to primary processing.	
Lubricating Oils	Oil containers are stored in the bunded fuel storage area located at the entrance to the reception building.	
Wood Chips	Wood chips are used in the biofilter located to the south of the processing building.	
Synthetic wall or ceiling covering	No synthetic covering observed on the wall or ceiling of the processing building or ancillary buildings or container structures.	
Paper, furniture and other materials in office	Site office located in a unit located at the northwest corner of the process shed. The site office is external to the process shed.	

4. IDENTIFICATION AND ASSESSMENT OF ALL POTENTIAL FIRE RISKS

To assess the potential fire risk both inside and outside the facility the combination of ignition source, combustible material and presence of oxygen (fire triangle) were determined. The potential for fire was broken down into specific areas of the facility to provide an area based assessment of the site. The areas considered as part of the initial assessment were:

Internal Facility Building - Primary Processing

- Waste Reception Area
- Composting Tunnels

Internal Facility Building – Pre-Primary Processing

- Barrier tunnels

Internal Facility Building - Material Storage and Screening

- Compost storage areas
- Material screening area
- Screened plastics storage area
- Screened overs storage area

External Rooms Connected Facility Building and Yard Area

- Fuel storage area at entrance to reception shed
- Electrical control room – located south of Shed 1 (Process Building)

Ancillary Buildings and Yard Area

- Site Office
- Welfare Facilities in container unit located south of Shed 1 (Process Building)
- Wood Chip Biofilter

Potential High Risk Activities

- Hot works – cutting or welding

4.1. Initial Fire Risk Assessment

The Risk Associated with each area was scored based on the existence of the fire triangle and the likelihood of all three aspects being present at the same time to cause a fire situation. The likelihood and severity of a fire at the facility is scored on a matrix basis, see table below. The initial fire risks area only based on the presence of the fire triangle and does not include the fire controls in place at the site, this is discussed in the later sections and the revised risk assessment scores based on the inclusion of those controls are provided in Section 8.

Likelihood	Severity		
	1	2	3
2	2	4	6
3	3	6	9

Internal Facility Building - Primary Processing		
FIRE RISK ASSESSMENT		
Risk Assessment Index No. - Miltown-01		
Area/Activity	Risk	Risk Rating
01A - Waste Reception Area	Overheating of Material or ignition due to hot material in feedstock	Potential for ignition is low due to inspection of material at intake and high moisture content of material - L1 x S2 = 2 - Low
01B - Composting Tunnels	Overheating of material and self ignition in tunnels.	Air, ignition source and fuel are available but severity would be isolated to individual tunnels – L2 x S2 = 4 - Medium
01C - Material Screening Area	Friction from belts or burnout of motors igniting fine dust material at screener	Air, ignition source and fuel are available with potential to spread if not detected – L2 x S3 = 6 - High
01D - Screened plastics storage area	Overheating of material and self ignition of pile. Friction from belts or burnout of motors igniting the material pile.	Air, ignition source and fuel are available with potential to spread if not detected – L2 x S3 = 6 - High
01E - Screened overs storage area	Overheating of material and self ignition of pile. Friction from belts or burnout of motors as source of ignition of the material pile.	Air, ignition source and fuel are available with potential to spread if not detected – L2 x S3 = 6 - High

Internal Facility Building - Secondary Processing		
FIRE RISK ASSESSMENT		
Risk Assessment Index No. - Miltown-02		
Area/Process	Risk	Risk Rating
02A – Pre-primary process Tunnels	Overheating of Material and self ignition in tunnels.	Air, ignition source and fuel are available but severity of any fire would be isolated to individual tunnels – L2 x S2 = 4 - Medium
02B - Maturation Areas	Overheating of material and self ignition of large compost pile.	Air, and fuel are available but limited potential for ignition source in area. Material is isolated from other areas of building by covered yard area and are monitored for temperature on an on-going basis but some potential for heating at core of piles exists– L2 x S2 = 2 - Medium

External Rooms Connected Facility Building and Yard Area		
FIRE RISK ASSESSMENT		
Risk Assessment Index No. - Miltown-03		
Area/Process	Risk	Risk Rating
03A - Site Office	Electrical fire due to overheating or power surge or malicious intent.	Air, potential ignition source and fuel are available but likelihood is low and severity of any fire would be limited – L2 x S2 = 4 - Medium
03B - Fuel storage area	Cigarette discarded at shed or malicious ignition of fuel.	Air, limited ignition source and fuel are available but severity of any fire would be isolated to the shed due to construction – L3 x S2 = 6 - High
03C - Electrical Control Room	Overheating of electrical panels or power surge burn out equipment and cause fire in control room.	Air, and potential ignition source are available but limited fuel source in area. May be low potential for spread to adjacent fuel storage shed – L2 x S3 = 6 - High

Ancillary Buildings and Yard Area		
FIRE RISK ASSESSMENT		
Risk Assessment Index No. Miltown-04		
Area/Process	Risk	Risk Rating
04A - Welfare Facilities in Pre-fabricated Unit south of Process Shed	Electrical fire due to overheating or power surge, malicious ignition or cooker fire in canteen.	Air, potential ignition source and fuel are available but likelihood is low and severity of any fire would be limited to welfare building – L2 x S2 = 4 - Medium
04B - Wood Chip Biofilter	Hot pockets in wood chip in biofilter if proper air distribution not maintained. Burnout of motors or fans in air extraction system during dry weather conditions.	Air, limited ignition source and fuel are available but severity of any fire would be isolated to the biofilter which is isolated from the facility building – L2 x S2 = 4 - Medium

Operations & Maintenance		
FIRE RISK ASSESSMENT		
Risk Assessment Index No. Miltown-05		
Area/Process	Risk	Risk Rating
05A – Hot Works including cutting and welding throughout the facility	Ignition source from sparks or hot slag may cause flammable material to burn causing risk to personnel and property.	Air, potential ignition source and fuel are available but likelihood is medium and severity of any fire could be high as it could potentially start anywhere in facility – L3 x S3 = 9 - High
05B – Burnout of motors for air handling associated with the compost process	Overheating of air pump motors could ignite flammable material causing risk to personnel and property	Air, and potential ignition source are available but limited fuel source around motors, with most isolated outside the facility building structure. Would be low potential for spread due to isolated nature of motors – L2 x S1 = 2 -- Low

5. FIRE PREVENTION PLANNING

5.1. Fire Prevention Measures

Fire prevention measures at any site are designed to meet three main objectives:

- minimise the likelihood of a fire happening;
- aim for a fire to be detected and extinguished as soon as possible; and
- minimise the spread of fire within the site and to neighbouring sites.

The fire prevention measures at the Miltown Composting facility are based on those preventative measures outlined in Chapter 2 of the EPA Guidance Note: Fire Safety at Non-Hazardous Waste Transfer Stations, 2013. The preventative measures employed by Miltown Composting were observed during the site walkover completed by JRE on January 3rd, 2019 and are provided in Table D below.

Table D – Fire Prevention Measures

Activity	Fire Prevention Measure
Control Sources of ignition	<p>The control of potential ignition sources on site are:</p> <ul style="list-style-type: none"> • All motors and fans associated with the air extraction system are located outside the main process shed on a concrete wall and are isolated from the biofilter. • The trommel screen is inspected and cleaned on a regular basis with preventative maintenance completed to reduce potential for burnout of motor or ignition of fine dust. • Vehicles are parked away from potential flammable material.
Ensure Staff and contractors follow safe working practices when undertaking hot works.	<p>If welding or cutting works are taking place, if possible it will be completed away from any combustible material. If the work must be completed inside the facility building then a hot works permit must be obtained prior to the work being completed, see Attachment 1. The staff member or contractor must have a heat shield in place to avoid sparks or hot slag providing ignition. Also, a fire extinguisher must be in place at all times where hot works are being completed. Hot works permits are required for all hot works undertaken in the Miltown Composting facility. It is also a requirement to revisit the work area at 30 minute and 60 minute intervals to ensure hidden sparks have not started to smoulder. It is also a requirement to ensure that no hot works are completed near the end of day to avoid a situation of inspection not being carried out.</p>
Ensure Training for Personnel on site	<p>Miltown Composting provides training for nominated staff members, including:</p> <ul style="list-style-type: none"> • Fire fighting equipment awareness and safe use • Emergency Evacuation Drills • First Aid. <p>A record of operative training is filed in the site office.</p>
Ensure that visitors are aware of correct safety and fire prevention procedures while on site.	<p>All visitors are escorted on site by a member of staff and are advised of proper safety and fire prevention procedures as necessary. Signage confirming all visitors must report to Reception located in main Office along with signage confirming no unauthorised entry allowed into the facility.</p>
No smoking policy inside the facility	<p>Miltown Composting have a no smoking policy at the facility with the exception of a designated smoking area located outside the canteen room located south of the main facility building.</p>

Activity	Fire Prevention Measure
Regular maintenance and inspection programme and ensure good housekeeping.	Miltown Composting have a regular preventative maintenance schedule and daily and weekly cleaning programmes in place for all process and mobile equipment on site, see Attachment 2. The process equipment is maintained and serviced by Miltown Composting staff as per the manufacturers instructions. The floor of the facility is regularly cleaned to remove any residual waste material that could be a fire hazard.
Security Measures	The Miltown Composting facility is located within a secure site with security fencing, The site is manned 12 hours per day for 6 days per week so reaction time to any fire incident would be very rapid. The site also has 8 CCTV surveillance cameras. The doors to the facility buildings are locked at night when the facility is not in operation.
Appropriate firefighting equipment available including all vehicles fitted with fire extinguishers	All mobile equipment at the Miltown Composting facility have fire extinguishers fitted in the vehicle cabs and personnel have been trained in their use. In addition, Miltown Composting has located fire extinguishers at the main entrances and exits to all buildings and a mobile tanker is on site for fire suppression use if required.
Provision of an emergency / quarantine area.	Miltown Composting have two dedicated areas for fire quarantine: (1. in the centre of the covered yard area located between the compost processing area and compost maturation sheds (approximately 100m ²) and (2. The mixing area in the reception area can at any time be loaded into a composting bay within 1 hour and used as another quarantine area (approximately 70m ²), see the Fire Point Map attached. Hot material could be removed to the concrete floor of either of those areas and doused with water to reduce its temperature. Once it has been deemed safe the material could stay in the quarantine area or be reintroduced to the feedstock. Having 2 fire quarantine areas provides flexibility for removal, segregation and control of fire prone material if required.
Put measures in place to reduce risk of self-combustion	Due to the consistent monitoring completed at the facility and the ability to control the core temperature of process piles through air introduction, the potential for the material to reach temperatures whereby they could ignite is considered low. Also, the moisture content of the material is between 40-60% and would not be readily conducive to ignition.
Manage size and spacing of stockpiles	A review of waste storage is included in Section 7 of this document.
Consider Enclosing stockpiles / stacks	This would relate to waste plastics and overs storage. The composting material in the primary processing area (Shed 1) is processed in concrete bunkers and material in the compost maturation sheds (Shed 2 and Shed 3) are in managed windrows. These areas are considered to be part of the process and not included for waste storage criteria under WISH 2017. Storage of plastics and overs screened from the compost material are stored in a dedicated area in Shed 3 and are separated from processing material.
Monitoring of Material Stockpiles to prevent overheating / combustion	Material stockpiles are stored in the facility buildings which are enclosed and allow for monitoring and fire controls. The temperatures of all process stockpiles are constantly monitored to ensure that the core temperatures do not reach levels whereby they may be an ignition source. The temperatures within the stockpiles are controlled by increasing or decreasing air flow through the tunnels. Temperature checks on maturation piles in the maturation areas takes place on a weekly basis, while moisture is checked daily, with regular turning of the material completed to reduce core temperatures if required. Once the material has been processed it is transferred off-site for disposal. Therefore, the majority of material is in the processing phase for the time it spends on site.
Fuel Storage	All fuel was located in a locked dedicated storage shed. The security on the shed reduces the potential for unauthorised access. The shed is constructed of materials (concrete) that would not readily burn.

5.2 Ignition Source Prevention

Based on the site inspection completed at the Miltown Composting facility on January 3rd, 2019 the controls outlined on Table E were observed to be in place to minimise and prevent ignition potential on site.

Table E: Ignition Sources and Fire Control Measures

Ignition Source	Control Measure
Smoking	Miltown have a strict no smoking policy inside the facility building. Anybody smoking must do so at the designated area outside the canteen located south of the facility building.
Vehicle Exhausts	Vehicles are not parked close to flammable material to avoid potential ignition and vehicles are parked in a designated safe area during out of hours. All vehicles have fire extinguishers in cab and all personnel have been trained in used of fire extinguishers.
Heating Systems	No heating in the process building. Only electrical heaters in site office and welfare facilities.
Hot Works	Hot works permits are required for all hot works undertaken in the Miltown facility. It is also a requirement to revisit the work site at 30 minute and 60 minute intervals to ensure hidden sparks have not started to smoulder. If welding or cutting works are taking place, if possible it will be completed away from any combustible material. If the work must be completed in the proximity of combustible material it shall be ensured that the staff or contractor has a heat shield in place to avoid sparks or hot slag providing ignition. Also, a fire extinguisher will be in place at all times where hot works are being completed.
Frictional generated heat from mechanical equipment	Preventative maintenance and servicing on process equipment prevents wearing of bearings etc. that may give rise to frictional generated heat. Scheduled cleaning of process equipment removes any flammable material from the equipment.
Poorly installed or maintained equipment or electrics	Equipment and electrical fittings are only installed and maintained by fully trained and certified technicians / electricians and maintained in line with manufacturers guidelines.
Static charge from conveyor belts	Preventative maintenance and servicing on process equipment prevents wearing of belts or belt slipping on equipment. Conveyors are monitored by the operative and cleaned as required.
Faulty or misused electrical equipment	All electrical equipment and fittings are installed repaired and maintained by a qualified electrician with appropriate certification.
Light Fittings too close to stored plastic waste	Plastic waste and overs produced from the screener is stored at the end of the trommel screen and removed from site (plastics) or re-used in the process (overs) on a regular basis. The overs material is stored beneath the screener. Screened plastics are stored in Shed 3, with no more than 125m ³ stored at any one time.
Obstruction of equipment ventilation	A walkway is maintained around process equipment. This will prevent the storage or placement of objects within close proximity of the equipment that could block ventilation and cause overheating.
Spontaneous ignition of organic waste material	Compost material in the process tunnels are monitored for temperature on an ongoing basis. The material is typically has a moisture level of between 50% and 60% and is not readily combustible. Each process tunnel operates on a forced air system whereby the volume of air forced through the process tunnels can be increased or decreased to achieve optimum composting conditions. The constant monitoring of the process tunnels allows for the core temperature to be controlled by adjusting the volume of air forced through the pile. The typical core temperature in each process tunnel is approximately 70°C which is not considered high enough to cause spontaneous ignition. This combined with a moisture content of between 50% and 60% results in a very low potential for ignition in the material.
Spontaneous ignition of screened plastic material	Plastic material is screened from the finished product in Shed 3 and the dispatch area. The material is stored in small quantities prior to being transported off-site for recovery. The material is monitored on a daily basis to avoid compaction of the material. Reducing the compaction of the material reduces the potential for heat buildup in the plastic material pile.
Ignition of fine dust at trommel screen	The material in and around the trommel screen is monitored by the operative operating the mini digger that cleans the fine material from under the screen. Removal of fine screened material is coupled with scheduled cleaning of the trommel to remove all fine dust from around motors and other potential ignition sources.

Ignition Source	Control Measure
Housekeeping	Scheduled housekeeping tasks take place on site and includes the clean down of plant machinery such as conveyer belts as well as a wash down of the mobile plant.
Malicious ignition (arson / vandalism)	The facility is located within a secure site with personnel on site 12 hours per day, 6 days per week and also has security and CCTV surveillance. All doors are locked when the facility is not manned to restrict access.

5.1.1. Persons at Risk

Based on the day to day operations at the Miltown facility the main persons at risk are the facility employees and delivery drivers that service the facility on a daily basis. The main risk to people in the facility is from fire but there may also be significant risk to people’s health from smoke related to the fire.












5.1.2. Fire Detection

Miltown have a comprehensive heat line system installed along the entire length of Shed 3 where screened plastics and other organics are stored. The heat line is monitored by an external monitoring contractor that constantly do not have a fire alarm system in place at the facility. The primary and secondary processing areas have CCTV systems in place. The processed organic material on-site is monitored on an on-going basis each day to ensure that no overheating takes place and that the temperature and moisture levels are maintained. Regular turning of maturing material in the storage sheds allows for prevention of hot pocket development within stockpiles. Due to the need to keep material moving through the facility, there is minimal storage of finished product material at the site and it is moved off site as soon as the maturation process has been completed.

6. FIRE FIGHTING PROVISIONS

The site has one (1) main dedicated fire suppression water storage tank (70m³) located to the south of the process shed can be used in the event of a fire, the location of the water storage tank is outlined on the Fire Point Drawing attached. A mobile tanker unit is located on the site that can be used for immediate fire suppression if required and the tanker can be refilled from the existing water storage tank. In addition to the water tank and mobile tanker, there are a number of fire extinguishers located within the process building and ancillary rooms and facilities on site. All mobile equipment working in the facility have fire extinguishers in the cabs and all personnel have been trained in the use of this fire-fighting equipment, see Attachment 3. The suppression equipment located at, and immediate to, the Miltown facility are outlined in Table F.

Table F – Fire Suppression Equipment at Miltown Facility

Fire Fighting Equipment	Location	
1 x 2kg CO ₂ Fire Extinguisher 1 x Fire Blanket inside office 1 x Fire Alarm Hooter	Inside site office.	
1 x 9ltr Foam Extinguisher 1 x 9kg Powder Extinguisher	Located at the door of the compost warehouse dispatch door.	
1 x 9ltr Foam Extinguisher 1 x 9kg Powder Extinguisher	Located on front of waste reception building beside the oil storage area.	
1 x 9kg Powder Extinguisher	Located inside the fitters work container to the south of the process building.	
1 x 9kg Powder Extinguisher 1 x Fire Blanket	Located in the Canteen building located to the south of the process building.	
1 x 9kg Powder Extinguisher	Located inside the operative change room to the south of the process building.	
Mobile Bowser system	Located in site yard on north side of process buildings	
Fire Water Storage Tank	Located in site yard on south side of process buildings	
1 x 9ltr Foam Extinguisher 1 x 9kg Powder Extinguisher	Emergency Exit on north wall of shed 2	
1 x 9kg Powder Extinguisher	Located in storage container in yard area to the north of the process shed.	
1 x 6kg Powder Extinguisher	Located beside mobile screener unit in covered yard area to the west of shed 2.	

The fire suppression (extinguishers and fire blankets) are checked and maintained on a regular basis. An example of the checks made is provided in Attachment 4.

7. MATERIAL PROCESSING AND STORAGE - FIRE BREAKS

7.1. Storage Walls/Storage Bays

A review of the suitability of process and storage bays (and dividing walls) was completed to assess if they would limit fire spread. This included whether the walls were of robust and imperforate construction, if they are constructed to inhibit fire spread and if they possess the capacity to withstand knocks from plant and machinery.

7.1.1. Processing Tunnels

All process tunnels located in the primary processing areas of the facility building consist of a mass concrete wall to approximately 3m high, this is to provide a robust wall structure that will not be damaged by process equipment transferring material in to, and out of, the processing tunnels.

The pre-primary process tunnels located in the eastern area of shed 1 have a mass concrete wall to approximately 3.5m high. Above the mass concrete the remainder of the tunnel walls are then concrete blockwork construction to the roof of each tunnel. The roof of the pre-primary process tunnels are a concrete slab construction which effectively isolates each tunnel from the one beside it. The construction of the tunnels provides a physical fire barrier between each process tunnel that would ensure that any fire event in a processing tunnel would be localised to that area only.

7.1.2. Freeboard

The process and storage areas were inspected to ensure that adequate freeboard existed to prevent overtopping of waste material over bay walls and over spilling of waste material beyond the sides of bay walls. The standard operating procedure on site is that the maximum height that material in any tunnel is piled to is 2.5 m. The construction of the tunnels allows for significant freeboard in each tunnel and encloses each process area so that they are stand-alone and material will not cross-over between process areas.

7.1.3. Processing Tunnels

Each processing tunnel holds approximately 150 tonnes of feedstock at any one time which is at a height of approximately 2.5 metres from the facility floor. The height of the processing tunnels are approximately 3.5 meters tall allowing 1 meter of freeboard within each tunnel. The construction of the tunnels is such that they are all fully separated by concrete walls and there is no chance of overtopping the tunnels or over-spilling of materials beyond the bay walls, see Plates 1 and 2 below.



Plate 1: Process Tunnel



Plate 2: Material in Pre-primary process Tunnel

7.1.4. Screened Material

The areas beneath the trommel screen were half full on the day when the site walkover was completed. Each area for the separation of various fraction sizes are separated by concrete walls and the material is continuously removed to avoid build-up of material beneath the screens, see Plate 3.



Plate 3: Screened Material Storage

7.2. Stockpile Sizes

There are no specific guidelines on stockpile sizes provided under the EPA Guidance documents. However, under section 9.1 of the Environment Agency 2016 Guidance for Fire Prevention Plans there are maximum pile sizes outlined for compost and green waste of various particle sizes (i.e., 750m³ for loose material greater than 150mm size and 450 m³ for material both between 30mm and 150 mm and less than 30mm. However, section 10.3 of the guidance states that for composting activities, the maximum pile sizes don't apply when the waste is actively managed and monitored during the composting process and that it would only be waste materials stored before and after composting that must comply with the maximum pile sizes. The waste material in the Miltown facility is being processed for the majority of the time it is on site (i.e., primary composting in bays and maturation process in the storage sheds) and is monitored (i.e., temperature readings) and controlled (i.e., positive pressure air input to composting bays and weekly turning of maturation windrows) and would not meet the maximum stockpile criteria according to the 2016 EA Guidance.

Based on the 2016 EA Guidance the main materials that Miltown would need to control in terms of stockpile sizes would be waste material in the reception building prior to transfer to the primary processing bays, storage of screened plastics that are removed from the material following the maturation process and screened overs material. All material in the reception building is mixed and transferred to a process bay upon the material being received and so there is no extended storage of waste material in that area. The storage of screened plastics and organic overs in Shed 3 is monitored closely and is cleared out regularly to ensure that the removed overs stockpile is no more 45-50m³ and the screened plastics stockpile is no more than 125m³. These are significantly less than the most conservative stockpile size of 450 m³ for compost/green waste and wood chip (less than 30 mm) and 300m³ for plastics put forward in the 2016 EA Guidance document. Wood chip amendment material used for blending with the feedstock is also stored in a dedicated concrete bunker in the reception building. The width of the bunker is 8m which is less than the 10m maximum width for bunkered waste suggested in WISH 2017.

Taking the above guidance as a conservative guideline the storage areas within the Miltown facility were assessed and are included on Table H below.

Table H: Process / Storage Areas at Miltown Composting Site

Area Ref.	Floor Area	Max Stockpile Height (m)	Volume for storage area (m ³)	Fire Break
Processing Area - Composting				
Process Tunnel 1	75 m ²	3.0	225 m ³	Concrete Separation Wall
Process Tunnel 2	75 m ²	3.0	225 m ³	Concrete Separation Wall
Process Tunnel 3	75 m ²	3.0	225 m ³	Concrete Separation Wall
Process Tunnel 4	75 m ²	3.0	225 m ³	Concrete Separation Wall
Process Tunnel 5	75 m ²	3.0	225 m ³	Concrete Separation Wall
Process Tunnel 6	75 m ²	3.0	225 m ³	Concrete Separation Wall
Process Tunnel 7	75 m ²	3.0	225 m ³	Concrete Separation Wall
Process Tunnel 8	75 m ²	3.0	225 m ³	Concrete Separation Wall
Wood Chip Storage	80 m ²	3.0	240 m ³	Concrete Separation Wall, 8m wide x 10m high
Processing Area - Composting				
Tunnel A	75m ²	3.0	225 m ³	Concrete Separation Wall
Tunnel B	75 m ²	3.0	225 m ³	Concrete Separation Wall
Tunnel C	75 m ²	3.0	225 m ³	Concrete Separation Wall
Tunnel D	150 m ²	3.0	450 m ³	Concrete Separation Wall
Tunnel E	150 m ²	3.0	450 m ³	Concrete Separation Wall
Tunnel F	75 m ²	3.0	225 m ³	Concrete Separation Wall
Tunnel G	75 m ²	3.0	225 m ³	Concrete Separation Wall
Processing Area - Maturation*				
Shed 2 – Windrow 1	300 m ²	-	1,500 m ³	Separation between windrows where practicable**
Shed 2 - Windrow 2	300 m ²	-	1,500 m ³	Separation between windrows where practicable**
Shed 2 - Windrow 3	300 m ²	-	1,500 m ³	Separation between windrows where practicable**
Shed 3 – Windrow 1	300 m ²	-	1,500 m ³	Separation between windrows where practicable**
Shed 3 – Windrow 2	300 m ²	-	1,500 m ³	Separation between windrows where practicable**
Shed 3 – Windrow 3	300 m ²	-	1,500 m ³	Separation between windrows where practicable**
Waste Storage Areas				
Overs Storage Area at Screener	30m ²	1.5	45 - 50 m ³	Separated from other material by approximately 3 metres
Overs Storage Area in Shed 3	30m ²	1.5	45 - 50 m ³	Material is regularly reused in process or removed from site for disposal to limit volume buildup
Finished Compost in Shed 4	112	4	450 m ³	Floor of Shed 4 Dispatch area – open area physically separated from other waste storage and processing areas
Plastics Storage	50 m ²	2.5	125 m ³	Floor of Shed 3 – open area physically separated from other waste storage areas

*- Sheds 2 and 3 are physically separated by a wall consisting of 6m high concrete structure and then metal cladding to the roof.

** - The material is being controlled as part of the process – based on WISH 2017 criteria separation not required for process material

The largest area for stockpiling material at the Miltown site is the maturing material located in sheds 2 and 3. This material is being matured as part of the composting process and would be at various levels of microbial activity. All other process areas are less than 300 m² in area and piled to a height not exceeding 3.5 m and are mainly contained within physical fire barriers or fire breaks to limit any fire spread within the facility building which is above that required by the WISH 2017 guidance. The piles are monitored to ensure that windrows are not heating to a level that may be a potential for fire outbreak. The piles are also turned every seven to ten days which would reduce core temperature in each maturing pile.

7.2.1. Storage Time to Avoid Self Heating and Combustion

Section 5.4.3 of the 2017 WISH guidance outlines the maximum storage time that shredded and similarly treated wastes (wastes whose particle size has been reduced) that corresponds closely with the wastes stored on the site (i.e., plastics, organic overs and wood chip) should be stored for to reduce the potential for spontaneous combustion. The timeframes set in the guidance is outlined in Table I below.

Table I –Storage Time for Waste to Avoid Self Heating and Combustion

Guidance Document	Maximum Storage Time Period to Avoid Spontaneous Combustion
Section 5.4.3 of the Waste Industry Safety and Health Guidance 2017	3 Months - Shredded and similarly treated wastes (that is wastes whose particle size has been reduced)

All compost material at the Miltown facility is stored internally pending shipment for use as landfill cover. All material is rotated through the process on an on-going basis and as such there is no material on the Miltown site that would be stored in excess of 3 months. Section 5.4.9 indicates that monitoring should be completed on wastes stored for prolonged periods. Miltown transfer all wastes from the site in less than the 3 month recommended storage period and would not be considered a prolonged storage period.

7.3. Potential for Fire Spreading Posed by Other On-Site Buildings

The potential for fire spread posed by other buildings on site and fire spread posed from higher risk ancillary rooms within the facility (i.e., electrical room, plant room and fuel storage shed) was assessed based on the fire breaks in place at each of these areas. All ancillary rooms that have higher risk for fire are all of concrete and metal construction which would have a fire rating of over 1.5 hours. Based on the limited access to these areas and the construction materials used in the building there is a low potential for fire spread from these areas on the site.

The fuel storage shed is also of concrete and metal construction and is banded to collect any released fuel or fire suppression agent. Because the shed is locked and only used by authorized personnel, and the fact that the site is manned for large periods of the day, six days per week, the potential for a fire to go undetected and spread from that shed to any other part of the facility is considered low.

7.4. Accurate Laminated Site Plan

A laminated site plan was observed at the waste reception building and meet the EPA Guidelines. The site plan outlines the building, main storage areas and potential high risk fire areas on the site. The site plan also indicates where fire suppression equipment is located and site drainage layout.

7.5. Fire Escape

There are a number of escape routes within each area of the site buildings at the facility. Miltown have an escape route plan developed for each area of the building shown on the Fire Point Map. All exits have signage posted above or beside the escape route to alert personnel and contractors / visitors of their closest fire escape, see Plate 4 below. The emergency muster area is located to the northwest of the waste reception building, see Plate 5.



Plate 4: Fire Exit in Shed 3



Plate 5: Emergency Muster Area

The locations of escape doors for the process building are detailed on the Fire Point Map and are outlined in Table J.

Table J – Fire Escape Door Locations in Miltown Process Building

Building Area	Escape Door Location
Waste Reception	<ul style="list-style-type: none"> ➤ Roller Door on Delivery Ramp at north of building ➤ Roller door for access to reception Building Floor at north of building ➤ Personnel fire door located between the roller doors at north of building ➤ Beside woodchip storage at southeast of building
Process Shed 1	<ul style="list-style-type: none"> ➤ Door to covered yard to the east and then exit via dispatch door or pedestrian emergency exit door to the north ➤ Door to reception building to west and then exit via either of the 3 exits listed above
Dispatch and screening area	<ul style="list-style-type: none"> ➤ Emergency pedestrian exit door on side (north) wall of shed ➤ Roller door on west façade of shed
Shed 2 Storage	<ul style="list-style-type: none"> ➤ Main entrance/exit roller door to the west ➤ Emergency exit pedestrian door at east of shed
Shed 3 Storage	<ul style="list-style-type: none"> ➤ Main entrance/exit roller door to the west ➤ Emergency exit pedestrian door at northeast of shed

A walkway is maintained through the composting tunnels in Shed 1 to ensure access to the escape doors at the east and west of the process building. Sheds 2 and 3 have access / exit through the main doors to the west of each shed and pedestrian emergency exits to the east and northeast of the sheds.

8. FIRE RISK ASSESSMENT FOR MILTOWN COMPOSTING

Based on the initial risk assessment completed in Section 2 of this document that only included the potential fire risk a revised risk assessment was completed to include the fire controls and preventative measures that are in place at the Miltown site. The revised risk assessment scores are provided below.

Internal Facility Building - Primary Processing				
Risk Assessment Index No.: Miltown-01			FIRE RISK ASSESSMENT	
Area/Activity	Risk	Risk Rating	Control Measures	Revised Risk Rating
01A - Waste Reception Area	Overheating and possible ignition of feedstock may be a risk to personnel working in the Process Building	L1 x S2=3 Low	<p>Fire suppression controls installed and maintained on site include:</p> <ul style="list-style-type: none"> • Fire Extinguishing Appliances are sited in the building and in all mobile vehicles for immediate suppression of fire upon detection. Extinguishers are inspected and tested in accordance with IS 291:2015. There is a service agreement in place with the installer to replace extinguishers/reels as required and to service all extinguishing appliances thoroughly each year. • The site is manned 12 hours per day, 6 days per week so there is a significant chance that there will be immediate response to any fire incident in this area of the facility, day or night. 	L1xS2=3 Low
01B - Composting Tunnels	Overheating of material and self ignition in tunnels. may be a risk to personnel working in the Process Building	L2 x S2 = 4 Medium	<ul style="list-style-type: none"> • The core temperature of all process tunnels are constantly monitored and the air input adjusted accordingly. This mimimizes the potential for overheating of any pile and a self ignition situation from occurring. The moisture content of the process material is around 50% in the tunnels so the chance of the material catching fire is considered very low. • The site is manned 12 hours per day, 6 days per week so there is a significant chance that there will be immediate response to any fire incident in this area of the facility, day or night. • There are fire extinguishers and a mobile firewater bowser in the area and on mobile plant for fire suppression. Fire Extinguishing appliances are inspected and tested in accordance with IS 291:2015. 	L1xS2=3 Low
01C - Material Screening	Friction from belts or burnout of motors igniting fine dust material at screener may be a risk to personnel working in the Process Buildings	L2 x S3=6 High	<ul style="list-style-type: none"> • The site is manned 12 hours per day, 6 days per week so there is a significant chance that there will be immediate response to any fire incident in this area of the facility, day or night. • A heat line is in place along Shed 3 and is monitored by an external contractor. • There are fire extinguishers and a mobile firewater bowser in the immediate area for fire suppression. Fire Extinguishing appliances inspected and tested in accordance with IS 291:2015. • Scheduled preventative maintenance of equipment would reduce potential for mechanical overheating and fire. 	L2 x S2=4 Medium

<p>01D - Screened Plastics</p>	<p>Overheating of material and self ignition on floor of facility may be a risk to personnel working in the Process Building</p>	<p>L2 x S3=6 High</p>	<ul style="list-style-type: none"> • The mixed organics/plastics material is removed from the floor and transported off site as soon as possible for recovery. This mimimizes the potential for overheating of pile and a self ignition situation from occurring. • Material is located in area where it will not be contacted by mobile equipment moving within the facility reducing potential for self heating due to compaction of material. • A heat line is in place along Shed 3 and is monitored by an external contractor. • The site is manned 12 hours per day, 6 days per week so there is a significant chance that there will be immediate response to any fire incident in this area of the facility. • There are fire extinguishers and a mobile firewater bowser in the area for fire suppression. Fire Extinguishing appliances inspected and tested in accordance with IS 291:2015. 	<p>L2 x S2=4 Medium</p>
<p>01E - Screened Overs storage area</p>	<p>Overheating of material and self ignition of pile. Friction from belts or burnout of motors igniting the material pile. may be a risk to personnel working in the Process Building</p>	<p>L2 x S3=6 High</p>	<ul style="list-style-type: none"> • Material is constantly removed and blended into feedstock so overs material is not stockpiled for long periods at the screen. • The site is manned 12 hours per day, 6 days per week so there is a significant chance that there will be immediate response to any fire incident in this area of the facility. • There are fire extinguishers and a mobile firewater bowser in the area for fire suppression. Fire Extinguishing appliances inspected and tested in accordance with IS 291:2015. 	<p>L1 x S3=3 Low</p>

Internal Facility Building - Secondary Processing				
Risk Assessment Index No.: Miltown-02			FIRE RISK ASSESSMENT	
Area/Activity	Risk	Risk Rating	Control Measures	Revised Risk Rating
02A - pre-primary process tunnels	Overheating of Material and self ignition in tunnels. may be a risk to personnel working in the Process Building	L2 x S2=4 Medium	<ul style="list-style-type: none"> The temperature of all process tunnels are constantly monitored and the air input adjusted accordingly. This mimimizes the potential for overheating of any pile and a self ignition situation from occurring. The moisture content of the process material is around 50-55% in the tunnels so the chance of the material catching fire is considered very low. Tunnel walls act as fire breaks to minimize any potential fire spread. The site is manned 12 hours per day, 6 days per week so there is a significant chance that there will be immediate response to any fire incident in this area of the facility. There are fire extinguishers and a mobile firewater bowser in the area for fire suppression. Fire Extinguishing appliances inspected and tested in accordance with IS 291:2015. 	L1xS2=3 Low
02B – Maturation Area	Overheating of material and self ignition of large compost pile	L1 x S2 = 2 Low	<ul style="list-style-type: none"> The temperature of all stockpiles are monitored on a weekly basis and the turning and rotation of material within the sheds mimimizes the potential for overheating of any pile and a self-ignition situation from occurring. Material has been matured and would not be expected to heat to temperatures whereby self-ignition would occur. The material has a moisture content of between 40% and 50% which would minimize potential for ignition. Material is stored with separation fire breaks between piles to minimize any potential fire spread. The site is manned 12 hours per day, 6 days per week so there is a significant chance that there will be immediate response to any fire incident in this area of the facility. There are fire extinguishers and a mobile firewater bowser in the area for fire suppression. Fire extinguishing appliances inspected and tested in accordance with IS 291:2015. 	L1 x S2 = 2 Low

External Rooms Connected to Facility Building and External Areas				
Risk Assessment Index No.: Miltown-03			FIRE RISK ASSESSMENT	
Area/Activity	Risk	Risk Rating	Control Measures	Revised Risk Rating
03A - Site Office	Electrical fire due to overheating or power surge or malicious intent.	L2 x S2=4 Medium	<ul style="list-style-type: none"> The site is manned 12 hours per day, 6 days per week so there is a significant chance that there will be immediate response to any fire incident in this area of the facility. There are fire extinguishers in the office for fire suppression. Fire extinguishing appliances inspected and tested in accordance with IS 291:2015. Training has been provided to personnel on the correct operation of extinguishers. 	L1xS2=3 Low
03B - Fuel Storage Shed	Cigarette discarded at shed or malicious ignition of fuel.	L3 x S2 = 6 High	<ul style="list-style-type: none"> Fuel Shed is locked at all times when not in use and access is restricted. Structure is bunded and is mainly a concrete and metal construction which will act as fire restrictor and reduce potential for spread of any fire. The site is manned 12 hours per day, 6 days per week so there is a significant chance that there will be immediate response to any fire incident in this area of the facility. There are fire extinguishers located on the external wall of the process building for fire suppression Fire Extinguishing appliances inspected and tested in accordance with IS 291:2015. Training has been provided to personnel on the correct operation of extinguishers. 	L2xS2=4 Medium
03C - Electrical Control Room	Overheating of electrical panels or power surge burn out equipment and cause fire in control room.	L2 x S3 = 6 High	<ul style="list-style-type: none"> All electrical equipment installed by certified electrician with appropriate breaker systems to avoid power surges. The site is manned 12 hours per day, 6 days per week so there is a significant chance that there will be immediate response to any fire incident in this area of the facility. There are fire extinguishers located in the changing area and fitter's container beside the electrical control room. Training has been provided to personnel on the correct operation of extinguishers. 	L1xS2=2 Low

External Rooms Connected to Facility Building and External Areas				
			FIRE RISK ASSESSMENT	
Risk Assessment Index No.: Miltown-04				
Area/Activity	Risk	Risk Rating	Control Measures	Revised Risk Rating
04A – Welfare Facilities	Electrical fire due to overheating or power surge, malicious ignition or cooker fire in canteen.	L2 x S2=4 Medium	<ul style="list-style-type: none"> The site is manned 12 hours per day, 6 days per week so there is a significant chance that there will be immediate response to any fire incident in this area of the facility. There are fire extinguishers and fire blankets in the canteen for fire suppression. Fire extinguishing appliances inspected and tested in accordance with IS 291:2015. Training has been provided to personnel on the correct operation of extinguishers. 	L1xS2=2 Low
04B - Wood Chip Biofilter	Hot pockets in wood chip in biofilter if proper air distribution not maintained. Burnout of motors or fans in air extraction system during dry weather conditions.	L2 x S2=4 Medium	<ul style="list-style-type: none"> The air distribution to the biofilter is automatically controlled and monitored to ensure even distribution of air throughout the biofilter. The moisture content of the biofilter is maintained at 60%-70% by spraying the woodchips with water during dry periods. Air extraction fans and motors are located on concrete walls and are separated from the biofilter media Checks and maintenance is completed on fans and motors to avoid burnout; There are fire extinguishers and a firewater storage tank to the south of the process building for fire suppression. Fire Extinguishing appliances are inspected and tested in accordance with IS 291:2015. 	L1 x S1=2 Low

Site Activities that May Be High Fire Risk And Site Fire Controls in Place				
Risk Assessment Index No.: Miltown-05			FIRE RISK ASSESSMENT	
Area/Activity	Risk	Risk Rating	Control Measures	Revised Risk Rating
05A - Hot Works	Personnel working in the building	S3xL2=6 High	<p>Before starting hot work, the operator/contractor must obtain a hot work permit from the site manager</p> <p>Before a hot work permit is issued, the issuer must inspect;</p> <ul style="list-style-type: none"> the area where the work will be carried out the operator to ensure he is trained to use the equipment the equipment to ensure it is in good working order emergency procedures fire equipment and necessary personal protection is available <p>The operative / contractor carrying out the hot work must have a person to watch for fire. Following the completion of works a final inspection will be completed and permit signed and retained. The post hot work fire watch must be completed for a period of approximately 90 minutes.</p>	S3xL1=3 Low
05B – Burnout of motors for air handling associated with compost process	Overheating of air pump motors could ignite flammable material	L2 x S1=2 Low	<ul style="list-style-type: none"> The isolated location of the pump motors are such that any fire would be small and isolated. The area surrounding the motors provide no fuel so the potential for spread is considered low. The site is manned 12 hours per day, 6 days per week so there is a significant chance that there will be immediate response to any fire incident in this area day or night. There are fire extinguishers on the external wall of the main process building for fire suppression if required 	L1 x S1=2 Low

9. ACCESS AND FACILITIES ON SITE FOR FIRE SERVICES

The site has an emergency response procedure in place whereby in the event of a fire and the alarm is raised then the site manager and the fire services are notified immediately. The site is manned 12 hours per day 6 days per week so the site would be accessible to the fire service during normal operating hours. During the times when the site would not be manned then the site manager would provide access to the site for the fire services. The presence of the new fire water suppression tank on the north side of the building provides access to a ready source of water for suppression and the front and sides of the main process building could easily be accessed by fire truck.

10. CONCLUSIONS

Based on the fire risk assessment completed at the Miltown Composting facility the following conclusions were made to provide improved fire protection at the facility.

- An externally monitored heat line in shed 3 has been installed since the last risk assessment completed in 2017. This system should continue to be operated and monitored as it is located in an area considered to have a higher potential for fire risk (e.g., heating of screened plastics). The system is an improvement on the previous detection system and will alert the facility manager and emergency services of a fire at the site. It is recommended that the site continue to be assessed to determine areas that may require additional fire detection measures.
- A new 70m³ fire water tank has been installed at the north side of the facility since the initial fire risk assessment in 2017 and provides for easily accessible water in the event of a fire emergency as required in the recommendations of the original fire risk assessment in 2017.
- It is recommended that the recommended maximum pile size (300m³ for plastics and wood and 450m³ for finished compost – max height 4m)) and storage time (in general 3 months for wastes whose particle size has been reduced) as outlined in the EA Fire prevention plans (9th November 2016 and Waste Industry safety and health forum 2nd April 2017) continue to be adhered to for all wastes stored before and after the active composting phase. .

ATTACHMENT 1

Hot Works Permit Example

HOT WORK PERMIT

Application of the "Hot Work Permit"

Applicable to all operations involving flame, hot-air or arc welding and cutting equipment, brazing and soldering equipment, blow lamps, bitumen boilers and other equipment producing heat or having naked flame.

ISSUING ORGANISATION:

Miltown Composting systems LTD

CONTRACTOR:

John Green

NB: Permit applies only to the job, period and area specified below.

Fresh permits should be issued for each half-day, where work carries on from the morning to afternoon or overnight or if the work being carried out is altered.

1. DETAILS OF WORK	
Description of Work being carried out	Cutting damaged lower sheeting off door into shed & cutting new sheeting to suit
Period of Work: Date & Time	Date: 9/3/17 Time: Between: 10.00 am/pm and 12.00 am/pm
Exact Location	IN NEW unused bay in Reception shed
Equipment for the Operation	Angle GRINDER
A RISK ASSESSMENT HAS BEEN CARRIED OUT AND THE APPROPRIATE SAFETY CONTROLS MEASURES ARE LISTED ON THE REVERSE SIDE OF THIS FORM.	

2. AUTHORISATION BY THE ISSUING ORGANISATION	
Authorisation for Hot Works may be granted by: (For Example Director Building Services)	Derry Murphy DERRY MURPHY
I have personally checked the Safety Controls Measures and consider it safe to carry out this work. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Date & Time 9/3/17	Date: Time: Between: 9.30 am/pm and 10.00 am/pm
Permission is granted to	John BREEN
To use	Angle GRINDER
Signature	<i>[Signature]</i>
Date & Time	Date: 9/3/17 Time 10.00

3. ACKNOWLEDGEMENT BY CONTRACTOR	
I fully understand the hazards of this work and the Safety Controls Measures to be taken. These have also been fully explained to the operatives carrying out this work and I consider them competent to carry out this work safely. I will return my copy of this permit to Issuer when the work has been safely completed.	
I have personally checked the Safety Controls Measures and consider it safe to carry out this work. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Contractor's Supervisor (print name)	DERRY MURPHY
Signature	<i>[Signature]</i>
Telephone Number	087 4125625
Signature	John Breen
Date & Time	Date: 9/3/17 Time 10.00 am

4. COMPLETION	
Work areas and all adjacent areas to which sparks and heat might have spread were thoroughly inspected on completion of the operation, and one hour later. No smouldering fires were discovered.	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
All fire detection/fire alarm systems have been returned to normal.	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Contractor's Supervisor (print name)	JOHN BREEN
Signature	<i>[Signature]</i>
Date & Time	Date: 9/3/17 Time 13.00
Company Representative	DERRY MURPHY
Signature	<i>[Signature]</i>
Date & Time	Date: 9/3/17 Time 13.00

RISK ASSESSMENT AND CONTROL MEASURES

RISK ASSESSMENT	
Hazard	Fire or Personal injury
Risk/Risks	Sparks uncontrolled Work Environment

GENERAL CONTROLS	
The location specified above has been examined.	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Any sprinklers installed are operative (where applicable).	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A <input type="checkbox"/>
Cutting and welding equipment is in good repair and adequately secured.	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
There are no combustible liquids, vapours, dust or gases present.	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
The work will be carried out by, and under the supervision of, trained personnel.	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
Potential impact of work being carried on the fire detection/alarm system has been discussed and appropriate precautions have been taken.	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
Fire watch set up during work and for one hour after the completion of the work. The person carrying out fire watch must be supplied with appropriate fire extinguishers, trained how to use them and in method of raising the alarm.	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Appropriate Fire Fighting and First Aid Personnel and Equipment are on standby.	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
The method of raising the alarm has been explained to all operatives and they have been advised what to do in the event of a fire.	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Control measures are in place to protect operative from hazardous gases and substances.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/>
Appropriate Personal Protective Equipment has supplied and will be worn.	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

CONTROLS TO BE TAKEN WITHIN 15M OF THE WORK BEING CARRIED OUT:	
All combustible materials are removed and good housekeeping will be maintained.	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
Combustible floors are protected by wetting down and covering with damp sand or sheet of non combustible material.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/>
Combustible materials and flammable liquids are removed where practically possible and are protected with non-combustible curtains or sheets where this can not be done.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/>
All wall and floor openings are covered with sheets of non-combustible material.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/>
When work is above floor level, non-combustible curtains or sheets are suspended beneath the work to collect the sparks.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/>

ADDITIONAL CONTROLS TO BE TAKEN WHEN WORK IS CARRIED OUT ON WALLS OR CEILINGS:	
Combustible constructions have been protected by non-combustible curtains or sheets	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/>
Combustibles have been moved from opposite side and are clear of any metal likely to conduct heat	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/>
Where metal beams / pipes are being worked on and, extend through walls or partitions, particulars must be taken on the far side of such wall or partition.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/>

ADDITIONAL CONTROLS TO BE TAKEN WHEN WORK IS CARRIED OUT ON ENCLOSED EQUIPMENT / CONFINED SPACES (TANKS, CONTAINERS, DUCTS, DUST COLLECTORS, ETC)	
Equipment are cleaned of all combustibles.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/>
Containers are cleared of all flammable dusts and gases.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/>

ADDITIONAL CONTROL MEASURES NEEDED AS IDENTIFIED BY THE RISK ASSESSMENT	
1	Yes <input type="checkbox"/> No <input type="checkbox"/>
2	Yes <input type="checkbox"/> No <input type="checkbox"/>
3	Yes <input type="checkbox"/> No <input type="checkbox"/>
4	Yes <input type="checkbox"/> No <input type="checkbox"/>

Note: Yes: identifies that a control measure has been put in place.
 No: identifies that a control measure has not been put in place.
 N/A: identifies that a specific control measure is not applicable.

ATTACHMENT 2

Site Cleanup Checklist Example

Week 24th - 29th Oct. 2016

Cleaning & Maintenance Log

24th 25th 26th 27th 28th 29th

Day of the week	Mon	Tue	Wed	Thu	Fri	Sat
Dirty Loader - Inspect (daily)	E.C.	E.C.	E.C.	E.C.	E.C.	E.C.
Clean Loader - Inspect (daily)	E.C.	E.C.	E.C.	E.C.	E.C.	E.C.
Clean Loader - Clean (B1 to B2)				JB	JB	
Clean & disinfect Clean area in process bld.				JB	JB	
Clean & disinfect Amber area in process bld.				JB	JB	
Bi weekly wash & disinfect of dirty area		JB				
Clean footbaths weekly		JB				
Dirty Loader - Clean (weekly)						
Daily scraping of Dirty Area in process area	JB					
Manual random ABP temperature checks				ATE BM		
Wash hands before sampling				JB		
Use new sample bag for each sample				JB		
Disposal set of gloves for each sample				JB		
Sweeping of clean yard and access ways	JB	JB	JB	JB	JB	JB
Sweeping of dirty yard	JB	JB	JB	JB	JB	JB
Clean and disinfect brusher				JB		
Scredder - Inspect (weekly)						
Tractor and Compressor	E.C.	E.C.	E.C.	E.C.	E.C.	E.C.
Screen - Inspect (weekly)	E.C.	E.C.	E.C.	E.C.	E.C.	E.C.
- Clean (as necessary)	E.C.					
Clean Screening, curing & Quarantine areas				JB		
Empty leachate storage tank			JB			
Comments / Corrective Actions						

Week 17th - 22nd Apr. 2017 Cleaning & Maintenance Log
 17th 18th 19th 20th 21st 22nd

Day of the week	Mon	Tue	Wed	Thu	Fri	Sat
Dirty Loader - Inspect (daily)		E.C.	E.C.	E.C.	E.C.	E.C.
Clean Loader - Inspect (daily)	B	E.C.	E.C.	E.C.	E.C.	E.C.
Clean Loader - Clean (B1 to B2)					Net	
Clean & disinfect Clean area in process bld.	A				Net	
Clean & disinfect Amber area in process bld.					Net	
Bi weekly wash & disinfect of dirty area	X	JB				JB
Clean footbaths weekly						
Dirty Loader - Clean (weekly)	K	Net	Net	Net	Net	Net
Daily scraping of Dirty Area in process area						
Manual random ABP temperature checks		Atk Dr				
Wash hands before sampling		Dr				
Use new sample bag for each sample		Dr				
Disposal set of gloves for each sample		Dr				
Sweeping of clean yard and access ways		JB	JB	JB	JB	JB
Sweeping of dirty yard		JB	JB	JB	JB	JB
Clean and disinfect brusher		JB	JB	JB	JB	JB
Scredder - Inspect (weekly)						
Tractor and Compressor		E.C.	E.C.	E.C.	E.C.	E.C.
Screen - Inspect (weekly)	H	E.C.	E.C.	E.C.	E.C.	E.C.
- Clean (as necessary)		E.C.				
Clean Screening, curing & Quarantine areas						JB
Empty leachate storage tank		E.C.				
Comments / Corrective Actions						

ATTACHMENT 3

Completed Fire Extinguisher Maintenance Check Example

DRAWINGS

Fire Point Map

Miltown Composting Systems

Fire Point Map

