PADRAIG THORNTON WASTE DISPOSAL LTD

THORNTONS RECYCLING CENTRE

Waste Licence Reg. No W0044-02

ANNUAL ENVIRONMENTAL REPORT 2016

SUBMITTED January 2017

Prepared By:

Fergal Brennan – Environmental Officer

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1 INTRODUCTION

This report is the Annual Environmental Report for Thorntons Recycling Centre. It has been prepared in compliance with Condition 11.5 of the Waste Licence (Licence Reg. No. W0044-02).

This licence was granted by the Environmental Protection Agency (EPA) to Padraig Thornton Waste Disposal Ltd (PTWDL) on the 2nd May 2003. The contents of this report are as required by Schedule F of Waste Licence W0044-02.

1.1 OPERATOR

The facility operator of licence number W0044-02 is Padraig Thornton Waste Disposal Ltd (PTWDL), T/A Thorntons Recycling. This AER relates to Thorntons Recycling Centre, Killeen Road, Dublin 10.

The address and contact details for the company headquarters are;

Thorntons Recycling,
Unit S3B Henry Road,
Park West Business Park,
Dublin 12.

Telephone: 01- 623 5133
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1.2 REPORTING PERIOD

The reporting period for this Annual Environment Report (AER) is 12 months between the 01/01/16 and the 31/12/16.

2 FACILITY ACTIVITIES

2.1 WASTE ACTIVITIES CARRIED OUT AT THE FACILITY

Part 1 of the current Waste Licence W0044-02 lists those activities contained in the Third and the Fourth Schedule of the Waste Management Act 1996, which are licensed to be carried out at Thorntons Recycling Centre, Killeen Road, Dublin 10. These activities are as follows:

Third Schedule

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

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

Third Schedule, Class 13: Storage prior to submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where the waste concerned was produced.

Fourth Schedule

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

Fourth Schedule, Class 3: Recycling or reclamation of metals and metal compounds

Fourth Schedule, Class 4: Recycling or reclamation of other inorganic materials

Fourth Schedule, Class 8: Oil re-refining or other re-reuses of oil:

Fourth Schedule, Class 9: Use of any waste principally as a fuel or other means to generate energy:

Fourth Schedule, Class 11: Use of waste obtained from any activity referred to in a preceding paragraph of the Schedule:

Fourth Schedule, Class 13: Storage of waste intended for submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where such waste is produced:

2.2 OPERATION PROCESSES - WASTE ACTIVITIES AT THE FACILITY

The following section details the operational procedure for dealing with each particular waste type which enters Thorntons Recycling Centre. (Appendix 1 displays location of each building where processes are carried out).

Process - SRF
Building Number 1

Building 1 contains the inclined feed conveyor for mixing the SRF suitable residual waste from both the dry recycling MRF (Park West) and the CID skip line (building 2&5, Killeen road) with the SRF suitable residual waste from the MSW line (building 3). Once all materials are shredded inside building 3 the resultant SRF material is conveyed via covered conveyors into Building 1, where it passes under a magnet to remove any remaining metals. The material passes through an eddie current to remove any nonferrous metals before it is conveyed to a stock pile awaiting consignment.

Process - Household and Commercial Municipal Waste
Building Number – 3

All Municipal Solid Waste (MSW) waste is accepted using our waste acceptance procedure, weighed on our weigh bridge and recorded in our automated computer system (WIMS). All putrescible and odorous MSW waste is tipped inside Building 3 and inspected for any non-conforming waste material by the fuchs operator. The presence of such items are handled using procedure EP04, "Handling unacceptable wastes". Oversize materials such as mattresses and large steel are mechanically picked out by the fuchs machine and stockpiled for recycling.

Once material is accepted as suitable for processing it is loaded using the fuchs machine into the M&J 2000. Here the MSW is passed through a coarse shredder, which opens any bags and tears larger items. The material, once small enough passes out the bottom of the M&J and is brought up an incline conveyor into the waste screener. The holes in the screener allow the fines and small organic material to fall out on to a conveyor belt underneath. These organic fines are passed over a magnet, which removes small pieces of metal and are discharged into a separate bay, where they are bulked for onward transport to a facility to be stabilized.

Larger materials are bounced down onto a separate conveyor belt. A magnet over the belt removes off any large metal items before the MSW material is conveyed to a processing line. The MSW is passed into a Nihot separator. This separates the MSW by density. The light material mostly consists of paper and plastic is blown forward in the Nihot and is discharged onto a conveyor belt. Before the light MSW material falls to the elevated conveyor it is passed under a magnet which again removes metal. The light MSW falls on to the elevated conveyor and is brought into the top of either of two Linder shredders. The material is shredded to a particle size of less than 25mm. Once the material is less than 25mm it passes through the base of the Linder shredders on to a conveyor belt and is brought under a final magnet, to remove the last remaining pieces of metal and through the eddie current to remove any remaining nonferrous metals before it is conveyed to a stock pile awaiting consignment to a facility where it is used as a source of energy in the production of cement.

The Nihot separates the heavy MSW from the light MSW (which goes on to become SRF). The heavy MSW is discharged from the back of the Nihot and is fed into a ballistic separator. The ballistic separator removes any remaining fines and discharges them into a bay, which is emptied daily and consigned for stabilisation. Any remaining paper or plastic is bounced along the ballistic separator and is discharged and mixed with the light MSW that goes on to become SRF. The 3 dimensional materials, such as bottles, cans, nappies, shoes etc. rolls back off the ballistic separator and are conveyed under a magnet to remove the metal. The MSW then passes through an eddie current, which removes the aluminium cans and the remaining material falls into a bay to be bulked and loaded into artic trailers and consigned to landfill or for incineration.

Process – Compostable Waste (Brown Bin, Source segregated and green waste).
Building Number – 3

Thorntons Recycling accepts and collects source segregated compostable waste from third parties, domestic and commercial customers. This material is tipped in Building 3 in a designated bay and is stored separately from normal household and commercial municipal waste. Waste is inspected on tipping and bulky material is removed by a grab as non-conforming waste for processing as MSW. Suitable compostable waste is reloaded daily into artic trailers using a loading shovel, for further processing in Thorntons Recycling composting facility, Kilmainhamwood, Co Meath, waste licence W0195-02.

Process - Mixed Unsegregated Commercial/Industrial Municipal waste (CI) and Mixed Unsegregated Household waste/ Skip Waste
Building 2 and 5

All skip waste is accepted at the facility as per the waste acceptance procedure and is weighed at our weigh bridge and recorded on our automated computer system (WIMS). All skip waste is tipped in Building 2 and inspected for any non- conforming waste material, the presence of such items are handled using procedure EP04 "Handling unacceptable wastes". All skip waste is fed into a shredder (M & J Waste Reducer) where it is broken into smaller particles and fed into a slot conveyor and in turn into the long objector remover. This equipment through its action has the ability to remove long pieces of metal or timber, which are then fed back into the waste reducer to break them up.

The remaining materials then passes through the first stage of the process under an over band magnet. The over band magnet removes ferrous metal which pass onto a metal conveyor into a picking station where contaminates such as small pieces of paper or plastic which have become tied up in the metals are manually removed. The trommel transfer conveyor then transports the remaining materials minus the ferrous metals through a trommel drum. The materials are turned in the trommel and the soil fines and small stones (<50mm in size) pass through the 50mm holes present in the trommel onto a trommel discharge conveyor which in turn passes through the back of building 2 into the construction and demolition processing area for further processing.

The remaining material is fed directly into the nihot system. Within the nihot system circulation fans 1 & 2 discharge jets of air to sort the material by weight. Drum 1 separates the stone from the rest of the materials which in turn joins the trommel discharge conveyor mentioned above and are passed through the back of building 2 to the C&D processing area. Drum 2 of the nihot then removes the timber which in turn moves along to be further sorted. The remaining material after the stone and timber has been removed falls onto a light fraction conveyor under the nihot and is conveyed to a compactor and loaded into an artic trailer. Once the artic trailer is full, it is disconnected and tipped into building 1 where it is loaded into the metering drum for shredding to make SRF.

Timber which is separated from the nihot processing area is transported via a transfer conveyor through a picking station, where timber, wiring and copper are removed manually. The timber then passes into a ballistic separator were contaminants such as plastic and paper are removed. The plastic and paper is conveyed under a magnet and combined eddie current to remove any small metallic and non-metallic objects before the paper and cardboard is conveyed to the compactor and loaded into an artic trailer. The remaining timber from the ballistic separator passes through a final picking station. The timber is manually picked and dropped into a bay. The contaminants falls into a separate bay and is taken into building 1 for further processing to separate out any suitable combustible material. The clean timber is transported to our wood chipping permitted facility in County Kildare for further processing.

Process – Construction and Demolition Waste (C&D)
Building - 2

Construction and Demolition waste is loaded into the M&J reducer as with the skip waste above. The soil and stones are segregated at the trommel and Nihot stages and the resultant materials pass along a conveyor in building 2 to the C&D processing area. The mixed material first passes through a 50mm trommel. Stone which is greater than 50mm in size will then pass on to a conveyor belt under an air blower and then through a picking line where contaminants are removed, before passing under a magnet to remove any ferrous metal. The clean stone product is stored in a purpose build storage shed in Yard 2/Josies Yard, from where it is loaded and consigned to its end destination.

Stone less than 50mm, fines and soil enter into a flip flop 8mm screen. Particles/soils which are less than 8mm fall through the screen and are stored underneath in a purpose built storage bay. Small stone and remaining material which is greater than 8mm in size is conveyed into a nihot single drum separator where debris/contamination such as polystyrene etc are removed by an air blower and fall into a storage bay beneath. All small stone which is greater than 8mm and less than 50mm are conveyed via a number of conveyors to the storage area of building 4 where it is stored and then loaded into trailers before being consigned to its end destination.

The process produces products such as small stone, clean rubble and ferrous metals, all of which are diverted from landfill void space. The fines which are removed from the C & D process are sent to landfill for use as daily cover.

2.3 WEIGHBRIDGE CALIBRATION

Precia Molen carried out a calibration on both weighbridges on the 22nd August 2016. Both weighbridges are due to be re tested on the 22th August 2017.

3 QUANTITY AND COMPOSITION OF WASTE RECEIVED, RECOVERED AND DISPOSED OF IN 2016

3.1 WASTE HANDLED IN THORNTONS RECYCLING CENTRE

The quantities of waste received during the current AER reporting periods are summarised in *Table 1*

Year	Waste Tonnes in
2016	249,729.52

Table 1 - Total Waste received 2016

All waste is checked and documented at the weighbridge in accordance with our waste licence and our waste acceptance procedure. Waste is then inspected, segregated, processed and reloaded for either disposal at a licensed facility or bulked for delivery to an approved recycling or recovery facility for further processing. Should any non-conforming waste come to the attention of our staff it is either rejected before collection or segregated and quarantined to be disposed of by a licensed contractor, paperwork is maintained on site. Our environmental management system (EMS) which contains procedures, including our waste acceptance procedure, is certified to ISO 14001; information in relation to our EMS can be located at any of the Thorntons Recycling offices.

All waste destinations used by Thorntons Recycling Centre in 2016 have been approved by the Environmental Protection Agency. A register of all EPA agreed facilities for recycling, recovery or disposal of waste is maintained on site.

3.2 WASTE ACCEPTANCE

Below is a simplified diagram explaining our waste acceptance procedure at Thorntons Recycling Centre.

All new staff employed by the company in 2016 received an Environmental, Health and Safety Induction which includes licence training, waste acceptance procedures, emergency procedures and environmental awareness. All staff employed at the facility are diligent in assisting in eliminating the occurrence of non-conforming wastes.

As the EPA is aware Thorntons Recycling has a certified management system for ISO14001 Environmental, ISO 9001 Quality, OHSAS 18001 Health and Safety. The Integrated Management System (IMS) is available for inspection on the IMS Drive at any of the companies' offices.

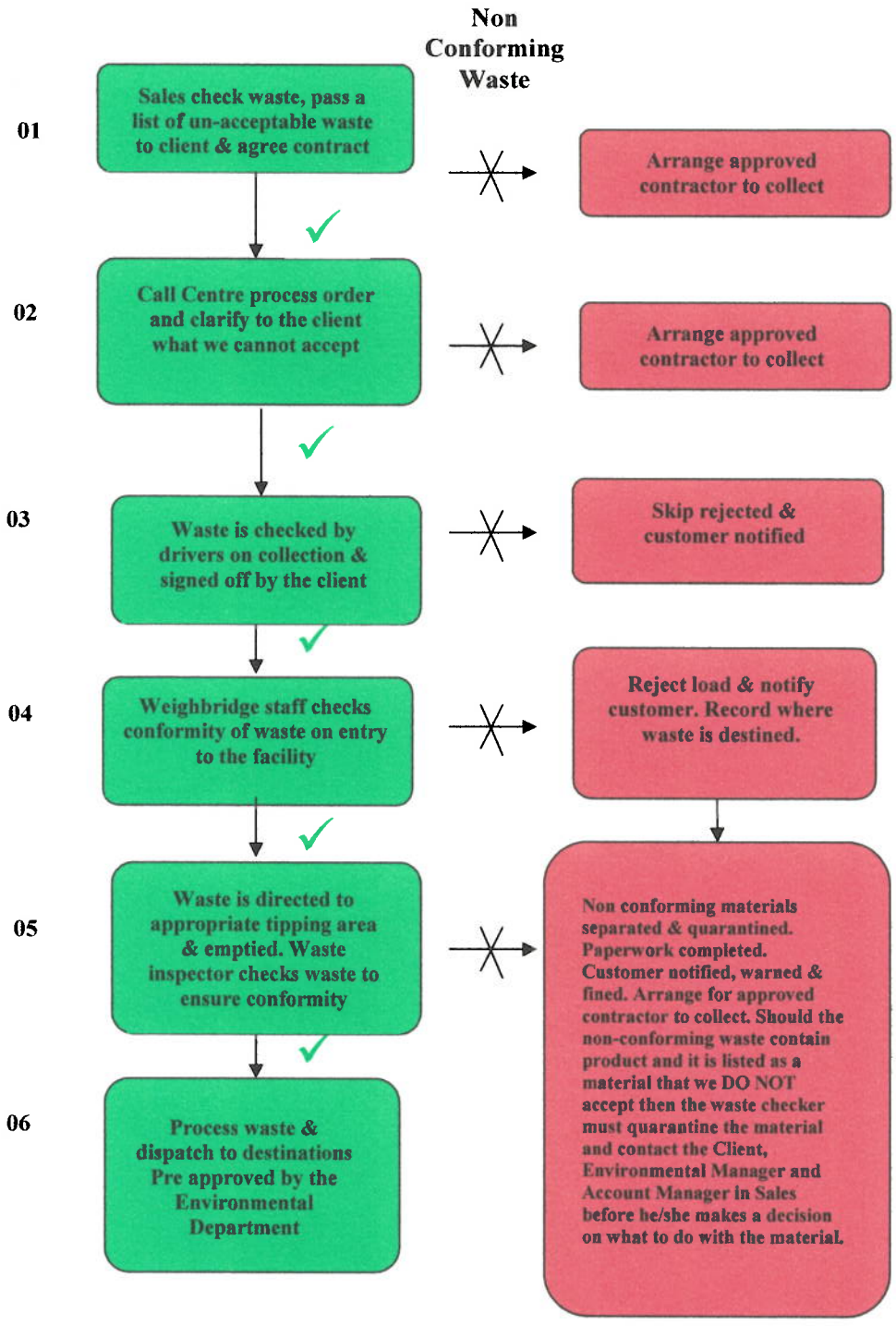


Figure 1 - Waste acceptance procedure

3.3 WASTE RECEIVED

A total of 249,729.52 tonnes of waste was received at the facility in the reporting period of 2016. Details of which are contained in Appendix 2 of this report. Figure 1 illustrates the trend in waste received at the facility between the periods 2001 to 2016.

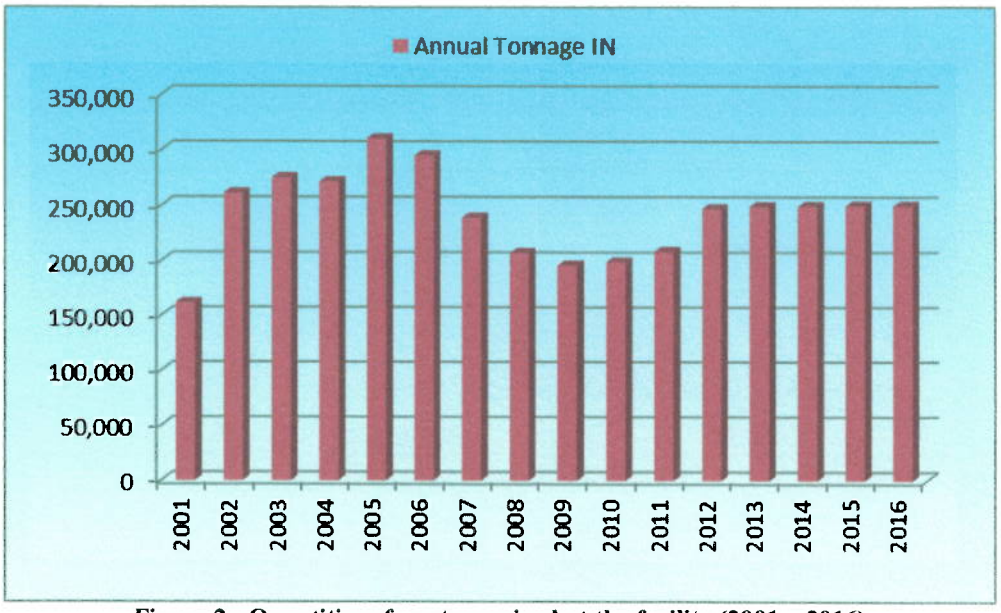


Figure 2 - Quantities of waste received at the facility (2001 – 2016)

3.4 WASTE CONSIGNED TO LANDFILL AND RECYCLING/RECOVERY FACILITIES

A total of 250,460.72 tonnes of waste was consigned from the facility in the reporting period of 2016. Details of which are contained in Appendix 3 of this report. Figure 2 illustrates the trend in waste consigned from the facility between the periods 2001 to 2016.

The overall recycling/recovery rate for the facility was 89.77%. The recycling rate has been largely consistent for the previous five years and this is an excellent achievement. The consistently high recycling rate is due to increased awareness, education and segregation of customer's wastes and also due to the expansion of the SRF process to include the processing of MSW at the facility. This material is blended with the residual material from skip waste to produce a fuel that meets the specifications of the two cement kilns in Ireland. Thorntons Recycling supplies SRF to cement kilns that use this material as a substitute for coal which is a high carbon producer when burned. The use of SRF from a residual waste has enabled the cement kilns to lower their carbon footprint by using waste material as a fuel and also reduce their reliance on imported fossil fuels as a raw material in the production of cement. The SRF was tested on a monthly basis to ensure that it met the acceptance criteria for the destinations. The production of the SRF has helped Thorntons reduce the quantity of material which would otherwise have been destined for landfill. A waste characterisation survey was carried out on the SRF by independent consultants in 2016 and it was found that 13.8% of this waste could be

classified as packaging waste, which is now being recovered as part of the national packaging recovery targets and diverted from landfill.

Overall since 2003, the Killeen road facility has shown a positive trend in diverting a high percentage of material away from landfill, through continuously improving the sorting techniques. The recycling rate of waste has increased from 12.14% in 2003 to 89.77% in 2016, which is a massive increase and demonstrates Thorntons commitment to increasing recycling and diversion from landfill all of which contributes to the national recycling figures (Figure 3).

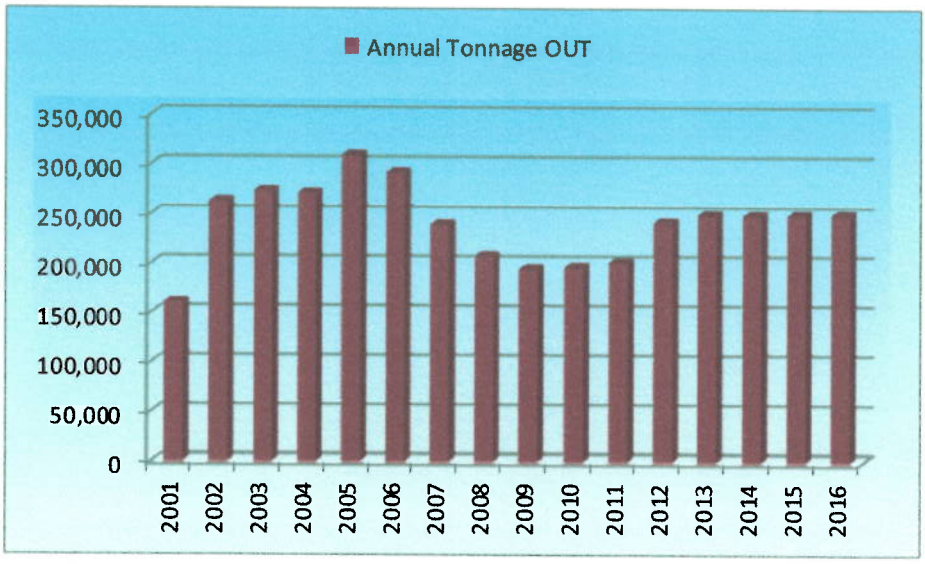


Figure 3 - Quantities of waste consigned from the facility (2001 - 2016)

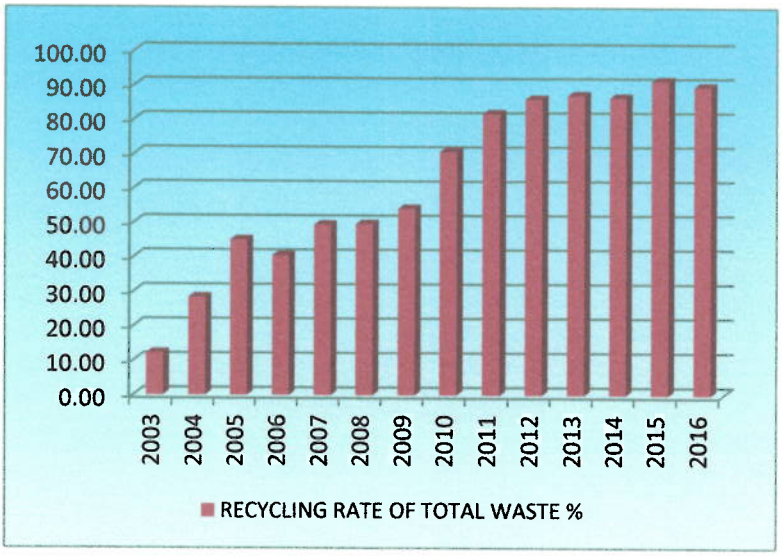


Figure 4 - Recycling Rate trends (2003 - 2016)

The total quantity of waste recovered or recycled has increased steadily at the facility. PTWDL process, sort and segregate all skip waste and now MSW material at Thorntons

Recycling Centre, Killeen Road, Dublin 10 and strive to improve process efficiencies on a continuous basis. The main materials which are currently being recovered from skip waste include wood, ferrous metals, non-ferrous metals, hard plastic, soils and stone, copper, wire cables and a solid recovered fuel (SRF), which is used as a substitute for coal in the cement manufacturing process in Ireland. The main materials which are currently recovered from the MSW are biodegradable organic fines, steel cans, aluminium cans and SRF, with the remaining residual waste going for disposal to a licensed landfill or for incineration.

It is hoped that Thorntons Recycling Centre will continue to increase its recycling and recovery rates in 2017 by;

- Continuing to work to International Standards ISO 14001 Environmental, ISO 9001 Quality and OHSAS 18001 Health and Safety with continuous development and improvement of new operational procedures.
- Continuous training and education of staff at all levels on recyclable material types and the development of new outlets for new materials.
- Thorntons Recycling offers an integrated waste management service that encourages clients to opt for different types of bins for different waste types. The company also has a tankering service division (TTS Thorntons Tankering Services), confidential shredding service and composting / brown bin service which can be offered to all our customers.
- Our licensed composting facility Kilmainhamwood Compost is approved by the Department of Agriculture (Composting Approval Number COMP/6) and also approved in line with SI 612/2006 and EC 1774/2002. We will continue to reduce biodegradable material being sent to landfill by offering a three bin service to all our customers.
- Thorntons Recycling has invested in the latest technology for confidential shredding in situ with the purchase of a state of the art shredding vehicle with CCTV camera system and developed a secure shredding facility which is permitted by Dublin City Council (WFP-DC-11-0023-01). The facility received certification in 2014 "Secure Destruction of Confidential Material" to international standard EN15713:2009 on the 13th August 2014.
- Continued education with new and existing clients on new regulations and their obligations in relation to the law. Thorntons Recycling offer educational workshops to existing customers.
- Continue to offer reduced rates to customers who segregate their waste, for example wood, metal, dry recyclables, glass, plasterboard and compost bins.
- Continually improve on service and our after sales service.
- Offer presentations and demonstrations on our client premises and schools.
- Awareness through the publishing of on line news, continuous development and updating of the website for Thorntons Recycling.
- Thorntons Recycling won Repak Recovery Operator of the Year Award 2008 and 2011, 2012 and 2013 and was a finalist in 2009, 2010, 2014, 2015 and 2016.

- Thorntons Recycling was a finalist in the Repak Kerbside Collection Scheme of the Year Award in 2012 and 2013.
- Thorntons Recycling won the Green Awards in 2013, 2015 and 2016 and was a finalist in 2012 and 2014.
- Thorntons Recycling has entered the Dublin domestic market in 2010 and continues to increase our customer base by offering potential customers an efficient and effective three bin collection service.
- Thorntons Recycling has entered the domestic market in Wicklow in 2012.
- Thorntons Recycling developed a new state of the art dry recycling facility (WFP-DC-10-0021-02) in Parkwest Business Park which produces a high quality of segregated recyclables. During 2012 Thorntons Recycling were successful in its application to DCC to increase its production volume to 50,000 per annum. Thorntons Recycling invested in a third optical sorting machine in 2013 to further improve the quality of the output material and to increase the recycling rate. In 2014 Thorntons added in new picking positions which enable us to segregate additional materials and achieve higher quality outputs.

4 CONTRIBUTION TO THE ACHIEVEMENT OF RECOVERY TARGETS

4.1 Proposal for the contribution of the facility to the achievement of targets for the reduction of Biodegradable waste to landfill as specified in the landfill Directive

Progressive targets have been set out in the Landfill Directive (1999/31/EC) to reduce the proportion of biodegradable municipal waste land filled. Biodegradable waste is waste that can undergo biological decomposition and is typically composed of food and garden waste, wood, paper, cardboard and textiles. By 16th July 2010 Ireland was restricted to land filling a maximum of 75% of the total weight of biodegradable municipal waste generated in 1995, the baseline year. This target is further reduced to 50% of the 1995 baseline by 16th July 2013 and 35% by 16th July 2016. According to the National Waste Report 2012, an estimated 589,260 tonnes of biodegradable municipal waste was sent to landfill in Ireland, this represents a BMW rate of 54%.

Thorntons Recycling own and operates an award winning compost facility in Kilmainhamwood, County Meath which is approved by the Department of Agriculture (Composting Approval Number COMP/6) and also approved in line with SI 612/2006 and EC 1774/2002. Thorntons Recycling Centre, Killeen Road, Dublin 10 has been successfully contributing towards National Targets by using this facility as a destination and now offers all our commercial customers and our household customers the option of a brown bin for food waste/catering waste etc. The facility has developed its own segregated area for this material which is fully enclosed in an odour controlled building. Thorntons Recycling Killeen Road, accepted approximately 27,769.29 tonnes of Green Waste and Brown Bin Waste for composting in 2016 which after any contamination was removed the remaining material was bulked and sent for composting in Kilmainhamwood Compost, Waste Licence W0195-02. Thorntons Recycling Centre diverted approximately 8,799.28 tonnes in 2016 of biodegradable waste in the form of

wood and 10,114.14 tonnes of organic fines from landfill during 2016 as a result of an increase in investment and technology to process MSW material. The facility has also diverted 11,227.81 tonnes of biodegradable paper, cardboard and wood from landfill, by producing SRF for cement kilns. In total 57,910.52 tonnes of biodegradable waste have been diverted from landfill by the facility in 2016. This represents a facility diversion rate of 69% of organic waste from landfill and demonstrates Thorntons Recycling ability to assist in meeting the national target for 2016.

4.2 The separation of recyclable materials (paper, wood, plastic, inert materials) from the waste & the recovery of commercial waste, including cardboard, newspapers/magazines, aluminium and steel cans.

Thorntons Recycling carries out a number of operational processes on different types of waste which allows for the separation of the above materials. These are detailed in the following section:

Dry commercial, industrial and domestic skip waste which enters the facility are checked upon tipping and any large bulky items that can be recycled such as wooden furniture and metals are removed by a grab and are segregated into piles to be sent for further processing. The remaining material is then sent through a high specification plant, this consists of equipment such as a crusher, long object removers, ferrous metal remover, trommel, nihot, ballistic separator, picking lines and a shredder, the working combination of which has resulted in a significant increase in recycling and recovery rates at the facility.

Dry recycling material is no longer processed on the Killeen Road site. Dry recycling is now processed in our facility in Parkwest Business Park. This facility operates under a waste facility permit from Dublin City Council.

Detailed quantities of material received and consigned from the facility are displayed in Appendix 2 and 3 of this report. Table 2 compares results submitted for Annual Environmental Reports from 2013 to 2016 for materials recycled at the site;

Total Materials Consigned	2013 Tonnes	2014 Tonnes	2015 Tonnes	2016 Tonnes
Cardboard Out	0	0	57	13.4
Metals Out Packaging (Aluminium and Steel)	1040.62	747.86	545.06	460.50
Plastics Out (Bottles, Film and Hard)	123	102	199	147.64
Mixed Papers	0	0	1	0
Wood Out	12,002	11,624	11,316	8,799
Mixed Metals Out (Bulky)	5,501	6,999	7,834	8,677

Table 2 - Comparison of recyclables consigned from facility (2013 - 2016)

Mixed metals (Bulky) waste consigned from Thorntons Recycling Centre increased in 2016 on 2015's levels.

Since March 2003, producers of packaging are obliged to segregate for recovery specified packaging waste materials at source. Thorntons Recycling has a team of account managers who educate customers on the advantages and their legal obligations for segregating packaging waste.

As stated in the National Waste Report 2012 published by the Environmental Protection Agency, Ireland had a packaging recycling rate of 87% and well exceeded the directive target of 60%. Thorntons recycling has played a significant part in the packaging recovery rate. During 2016 Thorntons Recycling carried out a Repak survey on the packaging content of the SRF which is used for energy generation in cement kilns. The survey carried out in 2016 found that 13.8% of the SRF is packaging waste or 13,127.90 tonnes. The production of such material on site attributes to further diversion of recyclable material from landfill

4.3 THE RECOVERY OF CONSTRUCTION AND DEMOLITION WASTE

Under National and European waste policies, Ireland was expected to recycle 85% of Construction and Demolition Waste by 2013. Mixed Construction and Demolition materials received at the facility had increased steadily between 2003 and 2006. However, 2007 to 2010 showed a decrease in the quantity of this material accepted from 60,214 tonnes in 2006 13,824 tonnes in 2010. Between the years 2011 and 2014 the volumes of C&D waste accepted on site for processing increased, but decreased in 2016 to 33,317.72 tonnes from 47,337.03 tonnes in 2015. Thorntons Recycling have utilised the Dunboyne Facility since the latter half of 2015 to divert some C&D materials and to enable us to accept more materials suitable for SRF production at the Killeen Road facility.

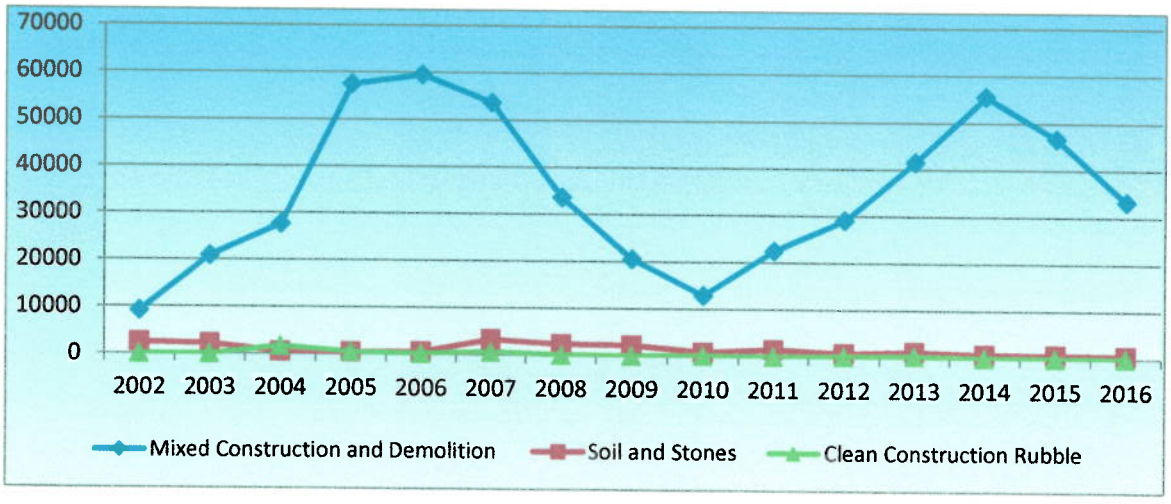


Figure 5 - Recovery of C&D waste (2002 - 2016)

Quite often construction and demolition material arrives at the facility as a mixture of soil, rubble and is somewhat contaminated with small pieces of plastic, polystyrene, metals, wood and other materials. These are removed during processing at Thorntons Recycling Centre and segregated into individual waste streams. If incoming skips are mixed with numerous different waste types, they are weighed in as mixed municipal waste. Waste which originated from construction or demolition sites is weighed in as Mixed C&D waste when the skip contains construction like material.

4.4 THE RECOVERY OF METAL WASTE AND WHITE GOODS

White goods arrive at the facility mixed in with skip waste. All white goods are picked from the waste and stored in skips before being transferred to a designated facility for Waste Electrical and Electronic Equipment (WEEE). All mixed metals are stored at the facility in designated skips and sent to approved destinations in Ireland where they are further segregated into different types i.e. Copper, Aluminium etc. Quantities of metals recycled can be noted in Table 2 above. Thornton's Recycling offers a reduced price to customers who segregate metal completely.

4.5 CONVERSION OF WASTE VEGETABLE OIL INTO A BIO FUEL

Thorntons Recycling Centre does not process waste vegetable oil into bio fuel on site and have no plans to do so in the near future.

4.6 RECOVERY FACILITIES PROPOSED TO ACCEPT SHREDDED OR WHOLE TYRES

Tyres normally arrive at the facility mixed in with other materials, for example in household skips. In 2016 these were segregated and stockpiled until a sufficient volume to warrant transport off site is achieved.

5 SUMMARY REPORT AND INTERPERTATIONS OF ENVIRONMENTAL MONITORING AND EMISSIONS DATA

In accordance with *Schedule D: Monitoring* of PTWDL waste licence W0044-02, monitoring of dust, noise, surface water and foul water must be carried out. Odour monitoring is also completed by an independent consultant bi annually. All monitoring has been completed as required for the reporting period of 2016. The following section details results obtained and interpretations of results for the year of 2016.

5.1 DUST

Annual Dust Monitoring was carried out at five locations D2, D3, D4, D5 and D7. Thorntons Recycling are required by Schedule D to monitor dust three times a year, results are displayed in Table 3 and Figure 6. The locations of each dust monitoring point are displayed in Figure 6.

Thorntons Recycling Centre is located in a predominately industrial area. Two busy roads i.e. the Killeen Road and Kylemore Park North form the western and northern site boundaries of the facility. Monitoring points D2 and D5 are located on these boundaries and as a result receive significant input from passing traffic and vehicles accessing Park West Industrial Estate and Ballyfermot.

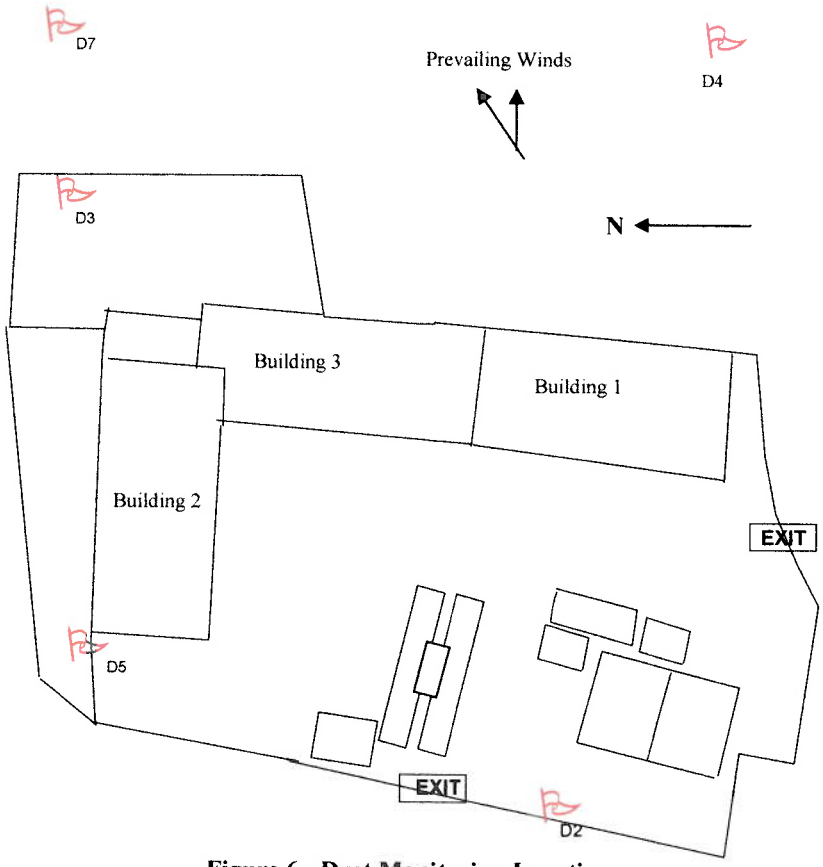


Figure 6 - Dust Monitoring Locations

Monitoring Locations	Sample 1 Jan/Feb	Sample 2 May/June	Sample 3 June/July	ELV mg/l
D2	155	222	214	350
D3	85	144	139	350
D4	90	101	100	350
D5	126	188	185	350
D7	152	224	219	350

Table 3 - Dust results 2016

The emission limit value for dust deposition is 350mg/m^2/day. During 2016 none of the dust emission levels exceeded the emission limits (Table 3). Figure 6 shows the trends in dust deposition during the year.

Thorntons Recycling will continue to monitor dust on a regular basis. Thorntons Recycling staff use power hoses to wet down yard surfaces at the facility during dry

periods. Dust curtains have been fixed to entrances and exits of the buildings where dust is generated. During 2010 the roof cladding was extended over the corner of building 2 on the CID building. During 2011 dust curtains were fixed to the exit of building 5 to reduce the likelihood of dust escaping from the building during the drier months. During 2012 dust curtains were fixed around the exit at the SRF compactor to reduce dust emissions from building 1 and also on the exit on building 3 to further reduce the likelihood of dust escaping from the buildings

A new mist air dust suppression system was erected in 2013 in Building 2. In 2013 an extended roofed area between building 3 and building 5 was erected. Upon completion, a dust curtain was erected in addition to a mist air system, to further militate against dust emissions. Dust curtains on site in 2015 were replaced where necessary. An air curtain was installed on the outer side of the automatic fast roller door on the exit from building 1 in 2016. This prevents both dust and odours escaping from this building. In an effort to further reduce dust emissions Thorntons Recycling also uses a road sweeper which is used at least twice daily in the facility. This is also used on the Killeen Road and Kylemore Park North to assist in reducing dust levels due to passing traffic and upwind contributors.

PTWDL recognise the importance of maintaining dust levels below the emission limit level of 350mg/m^2/day and are fully committed to maintaining compliant emissions from the facility in 2016.

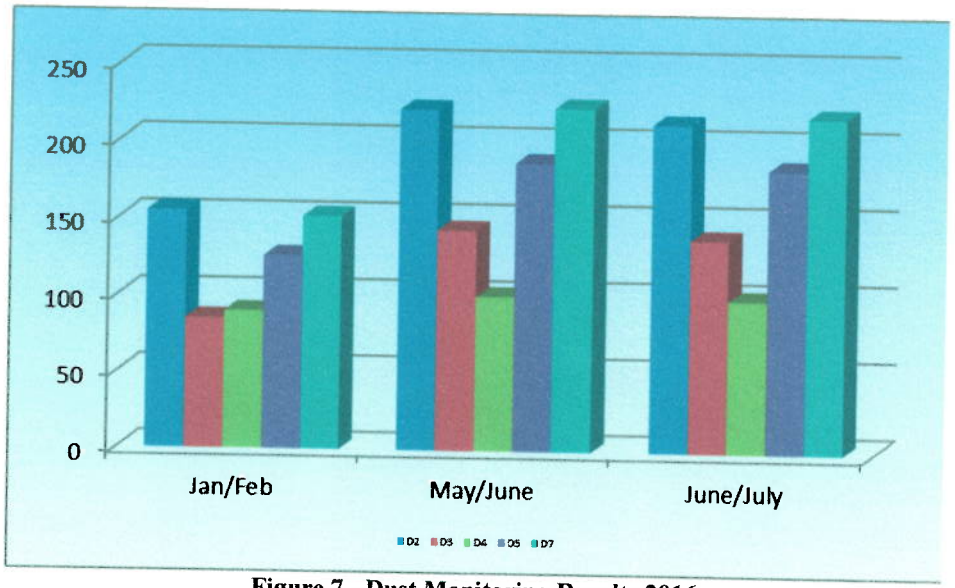
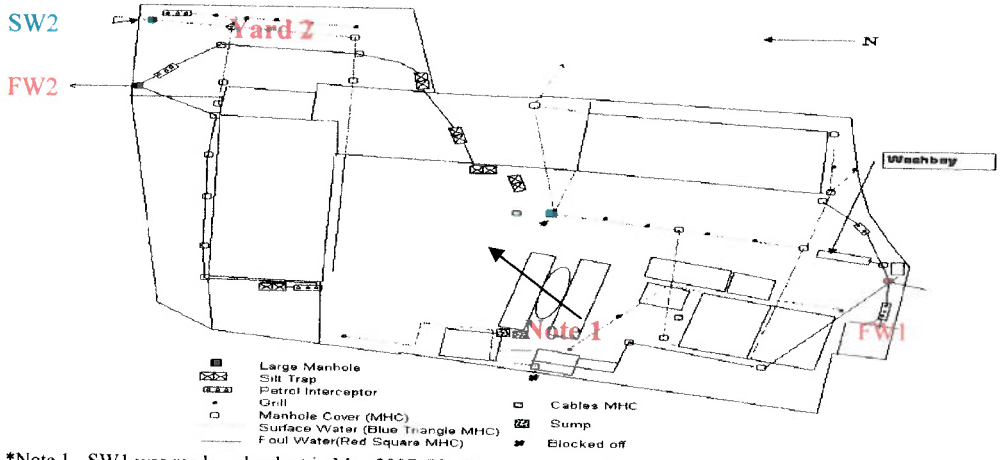


Figure 7 - Dust Monitoring Results 2016

5.2 EMISSION TO FOUL WATER AND SURFACE WATER

The monitoring points FW1 FW2 and SW1 are displayed in figure 7. Monitoring is carried out by Thorntons Recycling quarterly, as per the licence. Unannounced monitoring is also carried out by the EPA and Dublin City Council.



*Note 1 - SW1 was made redundant in May 2007. The line now passes through the screener in Yard 2 and passes out through FW2.

Figure 8 - Monitoring locations for sampling of Foul and Surface Water

5.2.1 FOUL WATER

In accordance with Waste Licence W0044-02 Schedule D all emissions to sewer must be monitored. Emissions to sewer must be monitored on a quarterly basis. Quarterly reports have been forwarded to the EPA via EDEN during 2016. All of these reports detail results and interpretations of monitoring of both the surface water and foul drainage system at the facility.

EMISSIONS TO SEWER (Foul 1) F1

Table 4 Illustrates results received at FW1 monitoring locations for 2015. The results in 2016, shows that there was an exceedance of Phosphate in Quarter 2 in the emission limit levels as set down in licence conditions. Quarterly reports have been forwarded to the EPA as detailed in section 5.2.1.

Monitoring	Quarter 1	Quarter 2	Quarter 3	Quarter 4	ELV
	Thorntons	Thorntons	Thorntons	Thorntons	
Parameters	25.03.16	23.06.16	29.07.16	07.12.16	mg/l
BOD	122	297	10	22	4000
COD	263	970	88	54	8000
Suspended Solids	68	137	125	31	1000
pH	7.40	7.80	7.30	7.10	6-10
Phosphate (as P)	1.19	131.11	0.28	0.20	50
Phosphate (as PO4-P)	3.65	402.00	0.85	0.60	50
Surfactants/Detergents	<0.3	0.50	0.30	0.40	50
Fats, oil, grease	<1	22	6.80	<1	100
Mineral Oil by GC (mg/l)	0.40	4.5	4.43	1.01	20

Table 4- Results of sampling from FW1 in 2016

EMISSION TO SEWER (Foul 2) FW2

Samples were also taken from Foul Sewer 2 (FW2) and the results are detailed in Table 5. The results in 2016 shows that there was an exceedance of Suspended Solids in Quarter 2 in the emission limit levels as set down in licence conditions. Quarter 2 reports have been forwarded to the EPA as detailed in section 5.2.1.

Monitoring	Quarter 1	Quarter 2	Quarter 3	Quarter 4	ELV
	Thorntons	Thorntons	Thorntons	Thorntons	
Parameters	25.03.16	23.06.16	29.07.16	07.12.16	mg/l
BOD	947.0	259	1046	18	4000
COD	2220.0	1310	1964	54	8000
Suspended Solids	325.0	1106	462	94	1000
pH	6.5	6.90	6.10	7.60	6-10
Phosphate (as P)	40.1	7.63	2.62	0.29	50
Phosphate (as PO4-P)	122.9	23.40	8.05	0.88	50
Surfactants/Detergents	0.6	0.60	0.20	0.40	50
Fats, oil, grease	<1	62.00	50.00	<1	100
Mineral Oil by GC (mg/l)	5.1	6.48	7.21	2.13	20

Table 5 - Results of sampling from FW2 2016

Monitoring was carried out by the EPA on the 01.02.16 and the 08.11.16 and the reported results showed that there was no exceedance of the emission limit values.

5.2.2 SURFACE WATER (SW2)

The monitoring point for surface water is displayed in figure 7 and the results for each sample are in Table 6. PTWDL re-designed the drainage system on site in 2007 to ensure compliance with waste license W0044-02 emission limit levels. SW2 is now the only surface water monitoring point which exists at the facility. This is located in Yard 2 (Josie's Yard) where there is little activity.

During 2016 there was an exceedance in BOD in Quarter 1 in the emission limit value. PTWDL recognise the importance of maintaining emissions limits within levels set down by the licence and will continue to do their utmost to ensure compliance with these levels. We will continue to carry out weekly inspections of the drains and ensure regular maintenance is carried out.

Monitoring Parameters	Quarter 1 25.03.16	Quarter 2 28.04.16	Quarter 3 21.09.16	Quarter 4 20.12.16	ELV
BOD	76	17	<5	<1	25mg/l
COD	121	53	<5	5	mg/l
Suspended Solids	28	30	8	8	35mg/l
pH	7.3	7.2	8	7.8	6-10
Conductivity	1100.00	693	169	172	mS/cm
Fats, oil, grease	<1	<1	1	<1	mg/l
Mineral Oil by GC	0.262	0.61	0.055	0.017	5mg/l

Table 6 - Results of sampling from SW2 in 2016

5.3 NOISE

In accordance with Condition 8 and Schedule D3 of waste licence W0044-02 annual environmental noise monitoring was carried out. Monitoring was carried out on the 21st and 22nd of December 2016. Noise monitoring was undertaken by Grace Curran of Thorntons Recycling Environmental Department in compliance with Condition 8 of the licence (W0044-02). The results of the survey were submitted to the EPA via EDEN on the 5th January 2016.

Thorntons Recycling is not fully responsible for the elevated noise levels at the noise sensitive locations. The predominant noise source at these three locations, N7, N8 and N9, was from non-site related vehicular movements on the nearby roads. This is reiterated in the similarity between the LA_{eq} readings and the LA_{10} readings at these monitoring locations during the surveys and also by the near continuous traffic movements recorded.

There was audible noise from Thorntons Recycling, such as from Thorntons related traffic, and reverse alarms at these locations but one could only hear these noises when there was no traffic on the roads. Normal traffic noise was the significant noise source and was more audible than the operation of the recycling centre. Thorntons Recycling is located in an industrial area and traffic is busy on these roads with heavy-duty vehicles contributing largely to the high $LA_{eq,}$ as well as some noises from other surrounding businesses that contributed to the noise result.

The LA_{90} gives an accurate level of the noise for 90% of the monitoring period at the locations and largely excludes the effect of passing traffic, provided that traffic is not constant. Due to the near constant volume of traffic at all three locations the LA_{90} was

also above the 55dB limit. There was a very high number of traffic movements passing close by to the monitoring location.

The survey concludes that whilst the noise levels are exceeding the day time emission limit value, the daytime noise levels at the noise sensitive locations are not being negatively impacted upon by the activities of Thorntons Recycling and that the predominant noise sources originates from factors external to the operations of the recycling centre. From the results of the daytime noise monitoring we have concluded that Thorntons Recycling is in compliance with its waste licence (W0044-02).

The night time noise levels were exceeded at all three noise sensitive locations during the monitoring period. The main sources of noise at these locations were from passing traffic and external sources that are not related to Thorntons Recycling. While Thorntons' activities and the odour system do add to the noise at the noise sensitive locations N7, N8 and N9 it should be noted that traffic is still the major contributor to the noise levels recorded.

There are similarities between the LA_{eq} and the LA_{10} in all three of the noise sensitive locations, thus indicating that traffic is a large influencing factor at these locations. The LA90 value recorded for all three locations was reported to be above the emission limit value of 45dB.

Thorntons Recycling considers that, although the noise levels at the noise sensitive locations are exceeded, Thorntons Recycling is not the primary cause of the noise at the locations. Elevated noise readings can be attributed predominately to the high levels of un-associated traffic in the area and the presence of numerous other industrial businesses and residential units in the immediate vicinity all of which are not under the control of Thorntons Recycling. As a result, it is concluded that Thorntons Recycling is not having a negative effect on night-time noise at the three noise sensitive receptors.

Monitoring	21st and 22nd of December 2016			ELV
Locations	LA, eq (dB)	LA 10 (dB)	LA90(dB)	(dB)
NP1	66.7	69.8	59.1	NA
NP2	70.7	73	66.3	NA
NP3	67.4	71	59.5	NA
NP4	70.9	73.7	65.4	NA
NP5	65.9	66.6	64.6	NA
NP6	71.3	73.5	64.1	NA
NP7	75	79	59.2	55
NP8	67.6	71.6	56.1	55
NP9	72.6	76.1	62.6	55
NP7 Night	64.3	59.6	48.7	45
NP8 Night	64.8	67.6	54.7	45
NP9 Night	68.6	73	54.9	45

Table 7 - Noise measurement results for Killeen Road annual monitoring

5.4 ODOUR

In order to assess efficiency of the odour treatment system Thorntons Recycling contracted Odour Monitoring Ireland to carry out independent monitoring of the Odour treatment system in 2016. It was previously agreed in 2015 with the EPA following a request (W0044-02/15/EPA/DD/03) that the bi annual monitoring report would be carried out annually. The annual test would be scheduled when the carbon is due to be replaced during the warmer months of the year. This was to determine the most probable worst case odour treatment scenario.

The annual report was forwarded to the EPA, following the test which was carried out on the 26th of May 2016 (44-2.16.EPA.GC.23). The report issued to the EPA shows that the system is working effectively, using olfactometry testing and dispersion modeling.

The activated carbon used in the air treatment system was also changed 3 times throughout the year, on the 27th of January, on the 2nd of June and the 22nd of August.

6 RESOURCES AND ENERGY USAGE

The following section discusses resources such as electricity, fuel and water used at Thorntons Recycling Centre in 2016.

6.1 ELECTRICITY

Electricity consumption increased by 6.2% from 6,135,925KW in 2015 to 6,517,250KW in 2016.

An energy register of opportunities was created when the energy management system was created which details potential energy saving opportunities on site. The register allows for all the opportunities to be ranked by cost saving, carbon dioxide saving potential, ease of implementation etc. The register will be reviewed as necessary and updated accordingly to ensure continual improvement in energy efficiency on site.

Figure 10 illustrates the monthly daily and nightly usage of electricity on site during 2016.

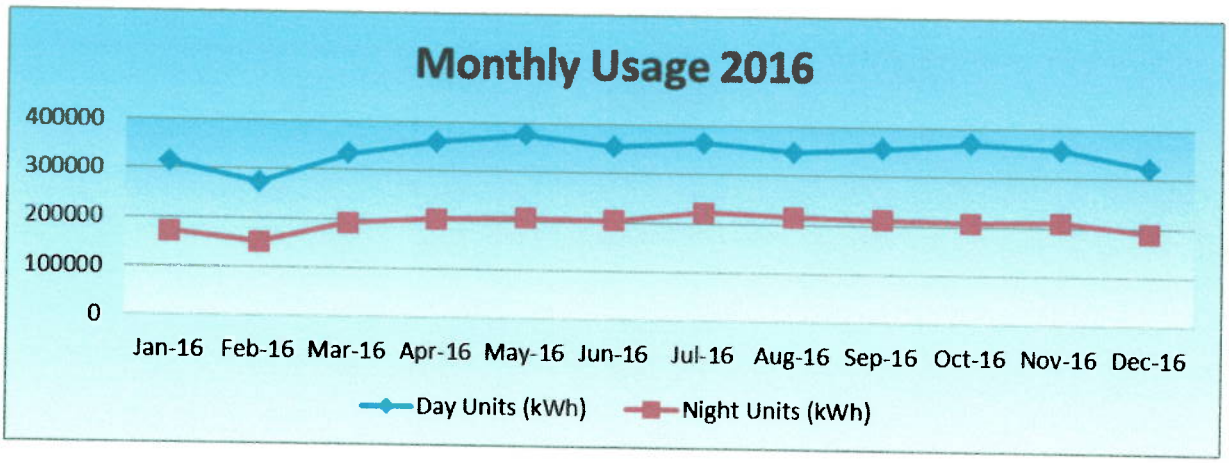


Figure 9 - Day and Night Electricity consumption 2016

6.2 WATER

In 2016 the facility used approximately 2,200m^3 of water compared to the 2,678 m^3 in 2015. Water is used on site to dampen down dust during dry periods, wash the floor and hard standing area and also to wash plant and vehicles. The use of water on site is necessary to assist with keeping the site clean and tidy.

6.3 DIESEL

The main types of fuel used at Thorntons Recycling Centre include road diesel and machinery diesel. The breakdown of fuel consumed is detailed in Figure 9 below. In 2016 a total of 234,417 litres of plant diesel and 2,830,708 litres of road diesel were consumed. In an effort to reduce the volume of plant diesel, Thorntons has purchased two Liebherr grabs which has a smaller engine than the original fuch machines and thus use less fuel per hour. These machines were purchased in late 2014. A number of new bin lorries and skip lorries were purchased in 2015 and these lorries have higher fuel efficiency than older versions.

Invoices in relation to all Thorntons facilities are sent to the head office of the company at Thorntons Recycling, Unit S3B, Park West Business Park, Dublin 12. Every effort has been made to distinguish between individual facilities to ensure an accurate fuel consumption report for Thorntons Recycling Centre, waste licence W0044-02.

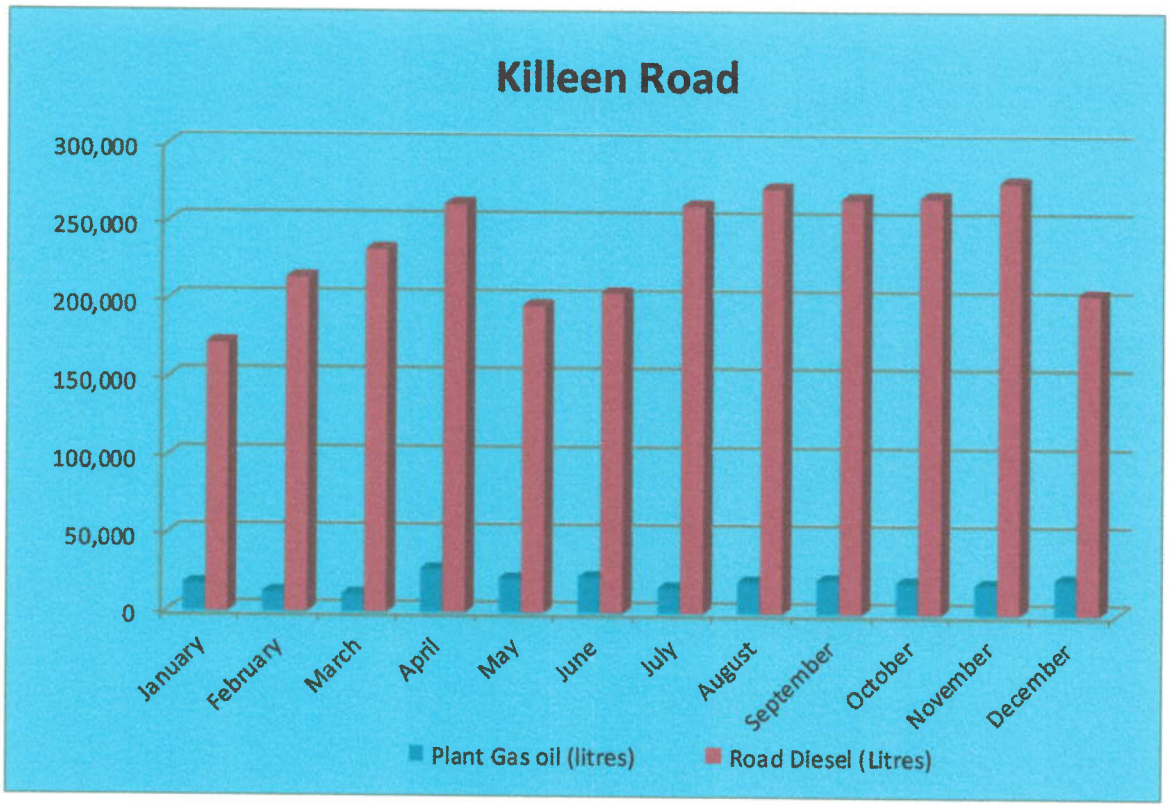


Figure 10 - Fuel Consumption 2016

7 DEVELOPMENT / INFRASTRUCTURAL WORKS

7.1 SITE DEVELOPMENTS 2016

The following summarises the main developments made at the facility in 2016;

Buildings and Waste Processing Equipment

- New M&J 4000 shredder was fitted on the C&D line to replace old one.
- Second Lindner shredder installed on the SRF line in Building 1.
- Roller shutter door installed in Building 1 as an access point for new shredder.
- Air curtain installed on building 1 door. This air curtain is programmed to turn on when roller shutter door is opened to prevent fugitive odours escaping.
- An overhead misting unit installed across main yard to mitigate any odours escaping from trucks waiting to tip in shed.
- New concrete was laid in brown bin bay in MMW shed. In order to prevent leachate escaping the concrete was laid so that there is a gradient falling into the bay.

Training

- Staff training - ISO Training and auditing carried out
- Emergency Response Training – Fire drills and fire warden
- Tool box talks carried out
- Environmental, Health & Safety Induction training carried out for all new starters.

ISO

- Thorntons Recycling were successful in maintaining their company standards for ISO 14001 Environmental, ISO 9001 Quality and OHSAS 18001 Health and Safety. Audits were carried out by Certification Europe in June and December.

7.2 PROPOSED DEVELOPMENTS IN 2017

It is proposed to investigate the possibility of abstracting the air from building 1 (SRF shed) and treating it via an upgraded version of the current odour abatement system. Any developments are proposed with the intention of reducing environmental impacts of the facility, improving the appearance and increasing waste processing efficiency at Thorntons Recycling Centre. Thorntons Recycling main aim is to reduce as much waste as possible for landfill disposal in line with national policy and further increase recycling and recovery rates at the facility by:

- Continuous Development on company procedures in line with ISO certification
- Review environmental checks and procedures

Prior to new installation works being carried out the environmental department completes the environmental aspects for the project and identifies for operations and maintenance any environmental aspects to be considered during installation. This process is part of the company ISO procedures but also allows us to mitigate against unforce events during the installation process.

Any planned infrastructural developments will be notified in advance to the EPA in compliance with the facility licence.

7.3 PLANT CAPACITY 2017

A detailed report on plant operating capacity, provision of adequate standby capacity and provision of contingency, backup and spares in case of breakdown is contained in Appendix 4 of this report.

Without taking into consideration the spare plant and machinery available at other Thorntons sites the report concludes that it is apparent from the information supplied that Thorntons Recycling Centre has well above the sufficient capacity required to handle waste tonnages licensed to enter the facility.

Thorntons Recycling has employed a full-time maintenance manager who is responsible for ensuring there are adequate spare parts at the facility at all times. A maintenance workshop was developed off site in Park West Industrial Estate with a team of staff who are capable of carrying out repairs as needed.

An additional service bay and maintenance workshop has been maintained on site with one electrician and two maintenance men at Thorntons Recycling Centre. Plant is serviced and maintained during a night cleaning shift, which enables plant which is required during the day to operate at full capacity. Addition plant can be serviced on site during the day shift provided that there is stand by capacity available.

8 SCHEDULE OF ENVIRONMENTAL OBJECTIVES AND TARGETS FOR 2017 AND PROGRESS REPORT FOR 2016

Thorntons Recycling operates an Integrated Management System (IMS) which has been certified to a number of standards namely; ISO 14001 Environmental, OHSAS 18001 Health and Safety, ISO 9001 Quality.

The complete content of the IMS itself is too large to contain within the main body of this report, however the EPA can access this for inspection on a specially designated drive (X Drive or IMS Drive) at any of the companies' site offices.

A detailed report table on progress towards the achievement of the Environmental Objectives and Targets for 2016 is contained within Appendix 5 of this report. The schedule of environmental objectives and targets for 2017 has been included but may be amended and finalised after the management review in March 2017. This schedule will

be available for the EPA to inspect during any of their site audits in 2017 at any of our facilities.

9 SUMMARY OF PROCEDURES DEVELOPED BY THE LICENSEE IN 2016

As discussed previously with the EPA Thorntons Recycling have an IMS system to incorporate Environmental, Quality and Health and Safety and have achieved certification in ISO standards ISO 14001, ISO 9001 and OHSAS 18001. In 2016 the system was continuously developed and improved. The company was audited twice during the year by Certification Europe and all three certificates were maintained across the whole company including the Killeen road facility.

Due to the large content of the IMS system it is not possible to include it in the main body of this report but it is available for inspection at Thorntons Recycling, Killeen Road, Dublin 10.

10 TANK, DRUM AND PIPELINE TEST

10.1 TANK BUNDING

Thorntons Recycling commissioned FTC consultants to complete testing on the main diesel bund. The main diesel bund passed its test on the 3rd – 5th June 2014 and a certificate is maintained on site. The bund is not due for testing until June 2017. The C & I bund was decommissioned in early 2011 and the diesel tanks were removed. The bund is still in situ but is not used. The bund will remain in place as it is a concrete structure and will be tested if it is re-commissioned in the future.

10.3 PIPELINE TESTS

The integrity and water tightness of all underground pipes and tanks and their resistance to penetration are carried out once every 3 years as per Condition 3.13.7 of the waste licence. Thorntons Tankering Services (TTS) completed a full CCTV drain survey at the facility during April 2016 on both the surface water drains and the foul water drains in both the main yard and in Yard 2 (Josies yard). These reports were submitted to the EPA separately in September 2016.

11 SUMMARY OF INCIDENTS AND COMPLAINTS

11.1 INCIDENTS

There were three incidents recorded during 2016 by the onsite monitoring. There was exceedance in Suspended Solids in FW2 and Phosphates in FW1 on the 23/06/16. There was also an exceedance BOD in SW1 on the 25/03/16. Thorntons will ensure that regular

monitoring is carried out and will endeavour to maintain the emission levels with the licence limits.

11.2 COMPLAINTS

Complaints were reported either directly to the EPA or to Thorntons Recycling Centre during 2016. Figure 10 shows the breakdown of complaints by the month in 2016. There was a total of 38 complaints received during 2016 which was reduction of 37% on the previous year.

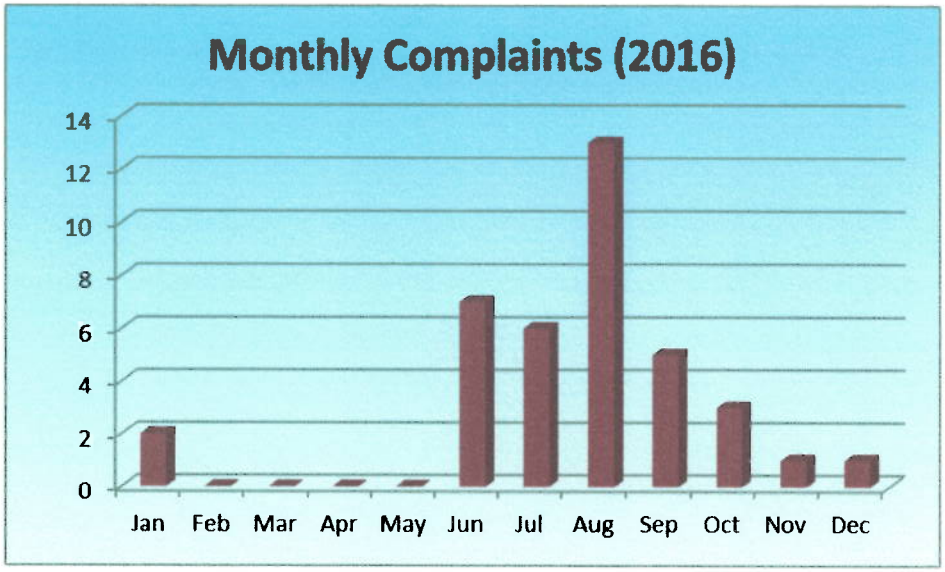


Figure 11 - Break down of all complaints 2016

Analysis of the complaints during 2016 shows that 38 complaints were received in relation to odour. 29 complaints were received by the EPA and 9 were received on site. There were 6 individual complainants in total. Four individual complainants made up 95% of all the complaints.

The trend with complaints in 2016 was like that of 2015 and has been towards complaints being reported directly to the EPA and not to the site, which results in the site getting the information on some occasions the next day when the perceived odour has already ceased to be present. Thorntons staff has stressed the importance with complainants on informing the environmental staff when the odour is occurring so that we can investigate it in a timely manner. During 2016, 24 complaints were recorded as been unconfirmed when investigated. The complaints were typically received after the event was perceived to be occurring. No odour was detected by staff when 9 complaints were investigated. There were 5 occasions in 2016 when an odour was noted off site following an investigation. For all 5 complaints, the perceived sources were identified and once rectified the complainant was contacted to confirm that there was no continuous odour.

All complaints, whether received on site or via the EPA are recorded and tracked as part of the complaints procedure.

The EPA carried out 20 odour assessments during 2016 and on only three occasions was an odour detected that was deemed to have originated from the Thornton's facility.
The activated carbon used in the air treatment system was changed 3 times throughout the year (27th of January, on the 2nd of June and the 22nd of August) and is monitored daily so that maintenance staff can be notified in advance when the carbon is due to expire.

Thorntons Recycling is committed to not allowing odours off site. We believe that the odour abatement has been successful at the facility in 2016 despite the number of complaints. As discussed in section 5.4 an odour assessment by an independent body was carried out during 2016 on our odour treatment system which concluded that the odour generated at the facility is being managed effectively. The EPA also carried out 19 random odour inspections throughout the year and Thorntons were found not be causing nuisance odours in the surrounding areas for all but three of these reports.

Thorntons Recycling takes every complaint seriously and is committed to resolving all complaints to the facility. We feel that in 2016 we have done our utmost to be proactive in dealing with local complaints and we aim to continue this trend in 2017.

12 REVIEW OF NUISANCE CONTROL

Potential generic nuisances at waste transfer and recycling facilities include dust, noise, odour, litter, birds, rodents, traffic. PTWDL do their utmost to control any nuisances which may occur at the facility. Checks on nuisances are carried out daily and corrective actions are carried out as required. A procedure in line with our IMS has been designed to ensure housekeeping is maintained in all areas and is carried out by supervisors (EP08 – Housekeeping Inspections).

In response to EPA suggestions the condition (size) of the stock piles in each shed is monitored and recorded each day as part of the daily environmental check list. Records are maintained on site in the environmental office.

12.1 DUST

PTWDL are required to carry out dust monitoring three times per year. Results of the dust monitoring have been detailed in section 5.1 of this report. Thorntons Recycling staff use power hoses to wet down yard surfaces at the facility during dry periods, dust curtains have been fixed to entrances and exits of the buildings; a dust suppression system is in operation in Building 2 and a dust system RJP Pulse Plant has been installed since March 2006 to remove dust from the air extracted from Building 3. PTWDL uses a road sweeper twice daily on the Killeen road facility or more frequently if deemed necessary. The sweeper is also used on the Killeen Road and Kylemore Park North road to assist in reducing dust levels due to passing traffic and contributory factors. In 2013 a

new mist air system was installed within the buildings on site to further reduce the potential of dust emissions and odour emission on site.

12.2 NOISE

Noise monitoring surveys are conducted annually at the facility; see section 5.3 of this report.

12.3 ODOUR

Tipping of potentially odorous waste and subsequent segregation and processing occurs within the sealed building 3 which assists in preventing odours from escaping beyond the facility boundary. Putrescible waste is removed from the facility within 48 hours. An Odour Abatement System was installed in March 2005 which uses carbon filtration to extract and treat the molecules that cause odorous air. Further works such as sealing all buildings with polyutherane foam, the installation of an air curtain system and the installation of a pulse plant for dust extraction to improve operation efficiency of the odour treatment system were also carried out since this time. In 2011 a large previously open area of building 3 was closed off with a roller door and metal cladding. A roller door was installed on building 1 to further reduce emissions for the building escaping. In 2016 an air curtain was installed on the outside of this roller door to stop ant fugitive emissions escaping when the roller door is up. In 2016, the carbon was changed three times to ensure a high odour removal rate from the odour system. In 2013 the mist air system was installed to further assist with reducing potential odour emissions.

12.3 LITTER

Daily checks are carried out on litter within and around the site boundary. Any litter which may escape is cleared up as soon as is possible. All waste transportation vehicles are either enclosed or have a net which covers waste, preventing littering while waste is in transit. Thorntons Recycling contracts a road sweeper which sweeps inside and around the facility twice daily. Staff sweep and tidy picking areas throughout the day and night and daily housekeeping checks are carried out by supervisors in all areas with further checks being carried out by the environmental department on a daily basis. All housekeeping checks are maintained on file in the Environmental Department at Thorntons Recycling Centre.

12.4 BIRDS

Constant moving machinery generally deters birds from causing any problems on site. The situation is being monitored and if necessary further action by the contracted pest control company will be arranged.

12.5 RODENTS

Complete Pest Control conduct fortnightly checks of all bait points around the facility which effectively controls rodents at the facility, all documentation for site visits and reports are maintained on site.

12.6 FLIES

Flies have not been a problem at the facility during 2016 and no preventative fly sprays were required. The presence of flies is checked as part of the daily environmental checks and if required additional action will be carried out by the contracted pest control company.

12.7 TRAFFIC

Thorntons Recycling Centre is bordered to the West of the facility by the busy Killeen Road which has an access entrance into Park West Industrial Estate and is bordered to the North of the facility by Kylemore Park North, both locations receive a considerable amount of traffic.

13 FINANCIAL PROVISIONS, MANAGEMENT STRUCTURE, PROGRAMME FOR PUBLIC INFORMATION

FINANCIAL PROVISIONS

PTWDL is insured by JLT (Appendix 6). PTWDL is insured for Employers Liability, Public/Products Liability and Motor Insurance. PTWDL is a financially secure company which is evident from the director's report and consolidated financial statements for the year ended 31st December 2015. Thorntons Recycling is insured under public liability for €13 million for sudden and accidental pollution incidents.

The company also have employed environmental management staff to ensure best practice guidelines and compliance with waste licence W0044-02 is being adhered to. A comprehensive emergency plan exists for all facilities operated by the company and the company has maintained certification to Environmental Standard ISO 14001 across all its sites in 2016. Environmental risk assessments are updated as part of the impact and aspects register for ISO14001. The Environmental Aspects Register (PM01-F02) for Thorntons Recycling, Killeen Road facility is available for inspection on site. All staff are trained in Health and Safety and Environmental Awareness at Thorntons Recycling Centre.

PROGRAMME FOR PUBLIC INFORMATION

Thorntons Recycling operates an open door policy at the facility and has carried out tours with students and businesses in 2016. The environmental team have been actively involved in carrying out recycling workshops and audits in schools, hospitals and industrial and commercial businesses as well as giving presentations to some of our larger commercial customers at their facilities.

All new and existing clients are brought through our waste acceptance procedures and are supplied with information by sales manager or customer care staff in relation to what waste types we can accept at the facility.

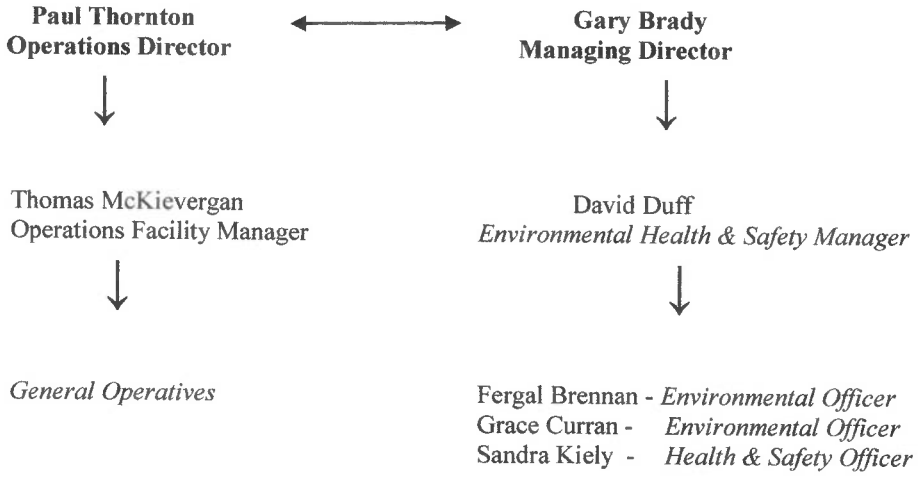
Thorntons Recycling has upgraded its website so customers can access information such as waste collection permit numbers and facility waste licences under the compliance section etc. These permits and licences are updated regularly and the web site is maintained with the most up to date information. The companies, on line skip service www.skip.ie provides our customers with services and information in relation to hiring a skip from Thorntons Recycling. All household customers now have a personal log in number to our website which enables them to view their waste activities including weights, collection dates and times etc.
A news update section of our website is updated regularly with news about the company which enables customers and the public to keep up to date with Thorntons Recycling.

All information relating to activities carried out at Thorntons Recycling Centre is maintained on site. Public information is accessible at the site at all times or at the Office of Environmental Enforcement. Detailed Communications Procedures (PM04-Communications and EP01 – Communications Programme) has been implemented in our Integrated Management System and are used throughout the company.

Thorntons Recycling was the runner up in the Pakman waste collection operator of the year award 2016 and won the green energy award for our production of SRF in 2016.

MANAGEMENT STRUCTURE

The graph below details the 2016 management structure relating to the Killeen Road site.



14 FOUL WATER PRODUCTION AND VOLUME OF WATER TRANSPORTED OFF SITE

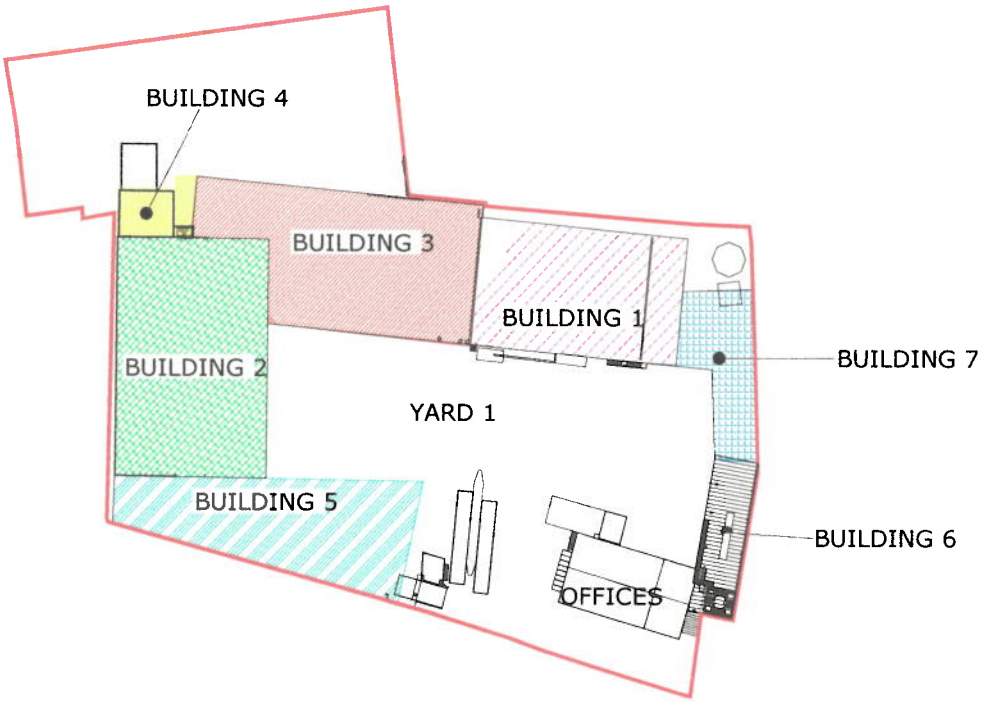
Thorntons Recycling Centre are limited under schedule C4 of waste licence not to emit more than $20m^3$ per day to the sewer at emission point reference F2 which exits at the north of the facility at Kylemore Park North or $12m^3$ per day to the sewer at emission point reference F1 which exits at the south of the facility to Kylemore Industrial Estate. A daily log is maintained on site.

Both foul meters located on F1 and F2 locations are checked during daily checks at the facility and zeroed at the end of the year. A total of 2,739,100 litres was discharged from F1 during 2016 and 627,400 litres from F2. Both are below the max permissible annual discharge for the reporting period. Thorntons Recycling Tankering Services is used for all onsite drainage maintenance and can be called in the event of an emergency if required. Approximately 44,120 litres of foul water or drain cleaning and maintenance was removed by tankers from the facility in 2016. Job tickets are located in the drain maintenance file in the Environmental Department, Killeen Road, Dublin 10.

15 RESTORATION AND AFTERCARE

A restoration and aftercare plan was prepared in 2014 which detailed and costed for the decommissioning or closure of the facility. The plan was submitted to the EPA and agreed. In compliance with condition 4.2.3 the plan is reviewed annually and costings are updated in line with costs agreed for the year ahead. There are no proposed amendments to the details of the decommissioning plan for 2016-2017.

Appendix 1


BUILDING 4
BUILDING 3
BUILDING 1
BUILDING 7
BUILDING 2
YARD 1
BUILDING 5
BUILDING 6
OFFICES

Appendix 2

EWC Code	Materials Received	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Total Year To Date
20 03 01	MMW In	6,989.72	6132.47	5995.73	6094.06	6543.06	5172.51	5164.04	5634.75	4753.07	4866.50	4088.54	2627.94	64062.41
20 03 07	Bulky MMW	5,138.06	5985.01	4664.46	4570.22	5180.62	4419.27	5285.75	5791.68	6592.21	6531.97	5165.95	3350.68	62675.90
19 12 10	Combustile waste suit SRF processing	2482.37	829.86	2114.68	2476.52	2924.46	2627.36	3191.32	3004.37	2677.00	2461.36	1769.74	1133.86	27692.90
20 03 03	Street cleaning residues	1,357.74	1246.54	1376.96	1380.78	1453.95	1401.43	1299.36	1383.36	1332.20	1531.41	1795.28	1696.02	17255.03
19 12 12	Inert trommel Fines	269.32	205.52	159.02	130.92	123.86	130.56	88.80	162.20	164.40	167.40	231.16	251.50	2084.28
20 03 02	Market waste				6.30		1.88			2.98	5.18	2.62		18.96
17 01 01	Concrete							10.22				3.14		13.36
17 01 07	Clean Construction Rubble					31.58							31.09	62.67
17 09 04	Mixed C&D Waste	2770.77	3781.15	3339.11	3260.42	2952.76	2309.64	2043.29	3331.76	3256.58	2945.11	2331.19	992.94	33317.72
17 05 04	Soil and Stones	46.98	73.10	29.94	26.20	27.36	26.50	17.64	65.86	48.62	86.00	66.88	40.68	555.68
02 01 06	Straw/ Animal Manure.			3.22								6.36		9.60
02 06 01	Bakers Waste	5.44	5.02	2.62	9.00	9.96	5.38	2.66	6.06	19.38	6.62	17.66	6.30	96.56
18 01 04	Non Infectious Healthcare Waste	628.80	644.34	652.74	707.92	645.99	661.54	700.01	686.46	716.41	692.86	700.32	663.96	8125.35
02 03 04	Tobacco	2.24	4.36	8.68	11.40	2.86	5.02	6.10	3.20		3.90	4.26	2.74	54.76
02 05 01	Unsuitable food dairy					5.10						1.00		6.10
02 02 03	Unsuitable food animal origin								3.78					3.78
02 03 04	Unsuitable food waste	7.06	14.58			9.54			14.30		1.40	5.20		52.10
16 05 04	Products for Destruction Inorganic		1.34	0.02	28.66	1.26	66.22	0.76	0.56	7.36	1.72	14.82	8.52	131.26
02 07 04	Unsuitable Alcohol and Liquid for Destruction	11.78	59.72	9.10	4.42	8.52		9.44	12.16	20.82		10.40	29.68	176.04
16 01 18	Metal non ferrous aluminium			1.86	0.52	0.48								2.86
17 04 01	Metal, Copper, bronze, brass					0.24		0.40		0.44				1.08
19 05 08	Mixed Packaging (dry MMW)	7.31	11.00	3.66	3.38	4.64	4.12	5.00	3.87	7.14	5.28	4.02	7.10	66.82
19 12 02	Metal Mixed Ferrous	20.02	24.30	12.28	2.98	10.34	5.34	12.43	4.56	9.80	21.16	3.70	3.76	130.67
17 04 11	Metal Wiring Cable		1.50											1.50
17 04 07	Metal Mixed C & D	3.76	1.28	5.04	1.76	10.58		3.80	6.62	4.56	4.94		1.94	44.28
19 01 05	Wood Packaging	217.82	269.52	215.61	179.82	227.82	267.90	232.96	313.76	269.56	269.12	251.88	168.71	2984.32
19 12 07	Wood Processed Wood e.g. chipped	15.40	5.10	6.12		8.06	5.44	6.00	6.22		17.56	5.36		75.26
17 02 01	Wood C & D Waste Wood	63.94	98.78	84.30	77.00	137.14	66.22	62.44	96.80	124.68	105.72	106.82	40.32	1064.16
03 01 05	Wood Waste Manufacturing	6.00	25.20	33.06	8.14	19.85	14.30	21.06	17.54	14.14	9.86	22.24	0.94	192.33
20 01 38	Wood Municipal Waste	111.92	116.56	41.64	36.82	87.24	37.70	44.26	38.50	71.92	53.48	63.92	25.12	729.08
16 01 02	Mixed Plastic Film - High Grade	0.20												0.20
16 01 02	Mixed Plastic Film - Low Grade	4.42	5.16	4.94	3.82	8.58	4.36	5.72	5.16		4.84	13.30	10.44	70.76
16 01 02	Mixed Plastic PP packaging										1.16			1.16
20 01 39	Mixed Hard Plastics	7.42	14.40	11.54	16.30	12.32	18.06	17.96	16.66	42.42	24.30	24.34	12.54	218.28
20 01 40	Metallic Packaging Steel												1.54	1.54
19 12 05	Glass Packaging										0.94			0.94
20 01 02	Glass Other	2.90		0.98		0.82					1.96	10.60	2.82	20.10
20 01 08	Brown Bin/ Seperately collected Food Run	1935.13	1828.12	2420.74	2443.86	3125.70	3147.56	2860.24	2736.50	2731.14	1632.66	1296.86	1029.00	27186.65
20 02 01	Green Waste	165.08	28.86	167.92	14.60	18.02	20.52	28.42	27.50	35.56	21.42	35.10	16.72	579.74
17 08 02	Gypsum Products/Plasterboard	7.90						10.62	4.08	5.72				28.32
02 01 06	Animal Manure/straw/effluent							2.44						2.44
19 08 01	Screenings Sewage Treatment		4.52	3.58										8.10
19 08 01	Screenings Water Treatment		2.38					2.10		2.72	2.30			9.50
19 09 04	Carbon - Spent activated							5.24						5.24
20 01 40	Fire Extinguishers									0.68				0.68
16 02 14	WEEE 6DA Mixed		1.30					0.25						1.55
16 01 03	ELV Tyres								0.54		2.12			2.66
16 01 02	Polystrene		0.60	0.80	0.62			0.30						2.32
	TOTAL	22280.34	21419.59	21370.66	21496.48	23592.57	20419.69	21140.67	23363.91	22914.57	21480.29	18064.92	12176.86	249729.52

Appendix 3

EWC Code	Materials Consigned	Jan	Feb	Mar	Apr	May	June	July	August	Sept	October	Nov	Dec	Total Year To Date
20 03 01	MMW (Bord na Mona Drehid Landfill)	538 06	1746 94	66 30	30 94	299 30	726 76	304 38	316 90	669 42				4719.00
20 03 01	MMW (Midland)		252 34											252.34
20 03 01	MMW (Ballynagran Landfill)	134 40	436 64									22 18		593.42
20 03 01	MMW (Knockharley)						267 14	34 16				55 76	85 16	412.22
20 03 01	MMW (Indaver Waste to Energy)	48 86												48.86
20 03 03	Street cleaning residues (Ballynagran Landfill)											631 34	249 10	880.44
20 03 03	Street cleaning residues (Knockharley)											637 54	1219 18	1856.72
20 03 03	Street cleaning residues (Bord na Mona Drehid)	2764 74	1419 72	1582 72	1629 54	1544 62	1736 38	1421 04	1841 16	1267 38	1432 44	695 58		17365.32
19 12 10	SRF (Lagan Cement)	803 80	1758 36	1642 80	1466 20	1129 36	827 12	987 18	1721 37	2380 38	2155 40	1978 64	2545 42	19170.03
19 12 10	SRF (Pacon)	19 80												19.80
19 12 10	SRF (Quinn Cement)	52 30	601 34	764 02	1425 16	26 52	722 14	905 18	1187 86	185 84	602 56	1131 72	2214 02	9798.96
19 12 12	SRF (Dunboyne)	1993 64												1993.64
19 12 10	SRF (Greyhound)	55 00	216 74							27 26				299.00
19 12 10	SRF (Irish Cement)	3192 92	2794 06	6974 73	6635 23	8466 82	7024 62	7736 27	4832 01	6026 52	6136 54	4103 28	761 24	64683.24
19 12 12	Stone (Bord Na Mona Drehid Landfill)	837 00	1686 46	1210 06	1012 32	844 54	424 54	378 86	726 98	1143 34	995 62	456 12		9715.84
19 12 12	Stone (Ballynagran)											386 62	28 52	415.14
19 12 12	Stone (Knockharley)											78 30	608 20	686.50
19 12 12	Stone (Tara Mines)	883 22	1666 06	1050 14	1284 76	1726 90	2024 10	1,823 22	2013 96	1919 72	1240 10	596 10	471 38	16699.86
19 12 12	Organic Fines (McGill Environmental)	554.74												554.74
19 12 12	Organic Fines (Bord Na Mona)	82 92	976 38	802 58	959 58	908 36	465 52	570 72	1283 34	891 42	998 90	496 60		8436.32
19 12 13	Organic Fines (EnrichEnvironmental)	723 76		173 74	25 06			58 30		57 90		54 76	29 54	1123.06
19 12 12	Trommel Fines (Bord na Mona Drehid)	2638 79	4934 00	3905 80	3397 40	3912 98	3382 70	2648 77	3417 16	8056 80	8395 10	1933 66	743 20	42346.36
19 12 12	Trommel Fines (Knockharley)											146 30	1328 32	1474.62
19 12 12	Trommel Fines (Ballynagran)	940 34	170 98									1537 02	277 98	2926.32
19 12 02	Ferrous Mixed Metals (Hammond Lane)	24 68			65 96	18 32	74 18	18 85			21 28	29 40	12 32	265.01
19 12 02	Ferrous Mixed Metals (Multimetals)	540 16	597 28	663 46	666 26	754 42	560 19	687 02	727 96	792 36	684 86	647 82	308 10	7621.89
19 12 02	Ferrous Mixed Metals (Wilton Waste)		18 08		6 58				19 88					44.54
19 12 03	Non-ferrous metals (National Recycling)													0.00
19 12 09	Non-ferrous metals (MDR)						12 94	2 08						15.02
19 12 03	Non-ferrous metals (Hammond Lane)	42 80	46 55	43 40	25 66	29 26	43 88	23 16	50 99	60 26	33 24	44 00	32 80	476.00
19 12 03	Non-ferrous metals (Wilton)	12 82	7 40	20 34	8 50	13 96	13 88	14 44			14 32	13 04	8 88	127.38
17 04 11	Metal cabling (Wilton Waste)	2 88	2 50	3 94		2 32		4 60	4 22	1 82	8 62	7 74	3 54	40.18
17 04 01	Copper and bronze (Wilton)	5 14	6 12	10 14	9 46	8 94	8 80	6 06	9 68	7 84	7 24	4 74	2 72	86.86
15 01 04	Metallic Packaging Aluminium (Hammond Lane)			2 52							2 42			4.94
15 01 04	Metallic Packaging Aluminium (MDR Facility)				12 86					13 08			12 02	37.96
15 01 04	Metallic Packaging Steel (Multimetals Facility)									16 14				16.14
15 01 04	Metallic Packaging Tin (Multimetals)			18 72	17 20		23 40							59.32
15 01 04	Metallic Packaging Tin (Hammond Lane)						25 16							25.16
15 01 04	Metallic Packaging Tin (Wilton Waste)	48 22	43 42	27 82	22 00	17 22			28 16	27 40	26 80	46 62	14 50	302.16
20 01 40	Metallic Packaging Tin (MDR)		14 82											14.82
20 01 39	Hard Plastic (Leinster Environmental)		6 98	7 40										14.38
20 01 39	Hard Plastic (Irish Polymer Extrusions)	11 10	12 24											23.34
20 01 39	Hard Plastic (Enviregreen)			5 72	10 64	11 76	4 30	4 28	9 52	22 00	13 10	20 00	8 72	109.94
16 01 03	ELV Tyres (Crumb Rubber)											13 26		13.26
16 02 14	WEEE SDA mixed to Rehab			0 62										0.62
20 01 08	Compostable Food Waste (Kilmainhamwood)	748 82	1811 26	2327 50	2340 20	2336 40	1098 46	1622 70	1427 50	2029 64	1301 08	1235 20	801 64	19050.12
20 01 08	Compostable Food Waste (Waddock Composting)	1252 74			116 42	566 44	404 34	229 84	303 44	395 82	71 16			3303.20
20 01 08	Compostable Food Waste (O'Tooles)						309 50	449 18	405 06	289 56	107 94		82 92	1644.18
20 01 08	Compostable Food Waste (Acorn Recycling)					26 22	237 92	343 76	461 80	114 46	55 02			1239.18
20 02 01	Green waste (Barrockstown Farms Limited)			18 76	8 28	94 00	61 68	20 42	57 34		137 86	197 34	44 70	639.78
20 02 01	Green Waste (PDM)	10 00												10.00
17 09 04	Plasterboard (Allied Waste Management)							4 80				8 38	8 48	21.66
15 01 01	Cardboard (IPR)		6 14	3 34	1 62								2 30	13.40
15 05 05	Gas Cylinders (Quarantine)			1 10		0 82			1 80	0 74	0 30	0 58	0 40	5.34
16 01 03	Tyres (Crumb Rubber)	5.02												5.02
19 12 07	Wood (PDM)	688 30	237 40											925.70
19 12 07	Wood (McKinstry)						66 74	639 42	252 66	32 06	71 18	39 20		1102.26
20 01 40	Fire Extinguishers (Doyle & Doyle)									0 88				0.88
19 12 07	Wood (Greenstar)		526 48	728 84	636 66	816 54	617 38	90 34	636 36	811 96	715 02	867 30	517 42	6770.32
	TOTAL	19458.47	21966.89	22056.51	21800.45	23543.80	21094.97	21029.03	21738.83	28211.00	22228.09	17913.96	12402.72	250460.72

Appendix 4

THORNTONS RECYCLING CENTRE
PLANT CAPACITY REPORT JANUARY 2017

INTRODUCTION

Thorntons Recycling Centre, Killeen Road, Dublin 10 is currently licensed under waste licence W0044-02 to accept 250,000 tonnes per annum of Domestic, Commercial, Industrial Non Hazardous and Construction Demolition Waste. To handle such large waste quantities efficiently and without significant environmental emissions, adequate plant machinery has to be in place to quickly handle and dispatch the materials delivered.

To quantify the processing capabilities of the facility this capacity report has been produced to estimate the quantities of waste the transfer station can currently accept before waste begins to accumulate and potentially effect the surrounding environment. This capacity report has identified spare plant that can be substituted for critical plant in the event of a breakdown. Furthermore, sufficient essential spare parts and staff who are capable of rectifying faults are also detailed and available to bring critical plant machinery back online after initial breakdown.

THORNTONS RECYCLING CENTRE PLANT CAPACITY

The following tables specify all plant on site and their individual capacity along with standby capacity of all substitute machinery (see tables 1, 2, 3)

Table 1 capacity of waste handling machinery

THORNTONS RECYCLING CENTRE HANDLING CAPACITY 2017					
Area	**Details**	**Machine**	**Capacity (tonnes per day)**	**Spare**	**Spare Capacity (tonnes per day)**
Waste Handling	Handling Skip Waste (B2)	Libherr 1	1500	Fuchs 6 (PDM)	1500
Waste Handling	Loading Trailers Oversize (B2)	Fuch 8	1500	Shovel 2 - JCB loading shovel 456	2000
Waste Handling	Loading MSW line (B3)	Libherr 2	1500	CAT Fuchs	1200
Waste Handling	Replacement during cleaning	Fuchs 9	1500	Shovel 3 & 4 Cat (PDM x 1)	4000
Waste Handling	Unloading trailers in the yard	Fork lift 1 (7 Tonne)	1000	Forklift 3 &5 MDR	2000
Waste Handling	Moving full and empty waste trailers	Shunter 1	1200 (* Based on 100 tonnes per hour for 12 hours)	Forklift 4 MDR	1000
Waste Handling	Moving waste in Building 3	Shovel - Volvo L120H	2000	Teleporter 1&2 in MDR	2000
Waste Handling	Moving waste in building 1	Shovel 5 - Volvo L120F	2000	Shovel 5 & 1 L90C (Dunboyne & Kilmainhamwood)	4000
Waste Handling	Moving waste in yard- Spare	Shovel - Volvo L120F	2000	Shovel 2 - JCB loading shovel 456	2000

Waste Handling	Spare in labre/yard	Cat 360B Teleporter	1000		
Waste Handling	Moving full and empty waste trailers	Shunter 2	1200 (* Based on 100 tonnes per hour for 12 hours)		
			16,400		**21,700**

Table 2: Current Capacity of Waste Processing Machinery.

THORNTONS RECYCLING CENTRE CURRENT DAILY PROCESSING CAPACITY 2017						
Area	**Details**	**Machine**	**Capacity (tonnes per day) Based on 14 hr day**	**Spare**	**Spare Capacity**	**Emergency Spare Parts In Store**
Processing	C.I.D line- crusher, 2 x trommels, 2 x Nihots, flip flop and picking lines (14 hr day)	C.I.D line	490	Diversion of waste to another facility or work a longer shift	Yes	Yes Motors, Belts and rollers
Processing	MSW line- crusher, waste screen and Nihots (14 hour day)	MSW line	560	Bulking material and consigning to landfill	Yes	Yes Motors, Belts and rollers
			1050			

Table 3 Current Capacity of Waste Transportation

THORNTONS RECYCLING CENTRE CURRENT TRANSPORT CAPACITY 2017					
Area	**Details**	**Machine**	**Capacity (tonnes per day)**	**Spare Capacity**	**Emergency Spare Parts In Store**
Transport	Moving waste to landfill - Loose Waste	8 Open Top Trailers	(2 driver, 5 lds * 25t per ld) **125**	Yes	Yes
Transport	Moving SRF to outlet	3 Closed trailers and 7 walking floor trainers	(3 driver, 15ld 24t per ld) **360**	Yes	Yes
Transport	Moving Compostable waste	2 Aluminium trailers	(2 driver, 4lds 27t per day) **108**	Yes	N/A
Transport	Moving Wood to PDM	8 Open top trailer and 7 walk floor	(1 drivers,3 lds * 25t per ld) **75**	Yes	N/A
Transport	Moving mixed metals	2 Open top bulker, 4 40ft tippers.	(1 drivers,2 lds * 20t per ld) **40**	Yes	N/A

Transport	Moving Organic Fines	7 walking floors and 4 tipper trucks	(2 drivers,4 lds * 26t per ld) **104**	Yes	N/A
Transport	Moving Trommel Fines and Stones	2 rigid tipper trucks 5 artic truck	(3 drivers,12lds*25t per ld) **300**	N/A	Yes
			1,112		

As can be seen from Tables 1, 2 and 3 Thorntons Recycling has sufficient plant capacity to process above the current licence quantity of 250,000 tonnes per annum. Table 2 and 3 displays the current capacity of waste processing machinery and the current transport capacity. Should the facility be required to handle more than that displayed in Table 2 and 3, hours of processing can be increased as the facility is licenced to operate under a twenty four hour licence and extra drivers and trailers can be hired to accommodate transport of materials. The trailers and lorries are able to transport a number of different types of waste streams so trailer types are interchangeable to transport material off site as required.

PTWDL operates other facilities such as Thorntons Recycling PDM, Thorntons Recycling Dunboyne, Kilmainhamwood Composting, Thorntons Recycling Security Shredding and Thorntons Recycling MDR. All these facilities have similar mobile plant on site which can be used at Thorntons Recycling Centre Killeen Road if required.

PTWDL employs a maintenance team who are responsible for ordering and cataloguing all essential spare parts. The team consists of qualified fitters and electricians, who have their own maintenance workshop and service bay onsite at the Killeen Road facility. A garage has been developed in Park West Industrial Estate where a team of 13 are employed. The garage is equipped with all the necessary specialized equipment and an emergency service vehicle for call out or to fix mechanical breakdowns. PTWDL have 24 hour access to Hose Doctor who can be on site within the hour to replace any damaged hydraulic fittings.

CONCLUSION

It is apparent from the information supplied that the facility and its workings have sufficient capacity to handle the current tonnages permitted to enter the facility and indeed could handle an increase in tonnage if required.

Appendix 5

PM03- F01 Management Programme 2016

COMPLETED | ON HOLD CARRY FORWARD TO 2017 | ON HOLD

Ref Numb	Date	Type	Objective and Target	Location	Responsibility	Method	Time Frame	Status
EP 01	Jan-16	Environmental	CCTV survey to be carried out on the Killeen road Facility.	Killeen Road	GC	1 - Organise through TTS	Jan-16	Ongoing - CCTV submitted to EPA but awaiting works identified to be carried out
EP 05	Jan-16	Environmental	Re-testing of fowl water flow meters in Killeen road- FW1 and FW2	Killeen Road	GC	1. Liase with calibration company to retest and calibrate the flow meters.	Sep-16	Complete
EP 07	Jan-16	Environmental	Installation of Linder Shredder in Killeen Road	Killeen Road	GC	1. Liase with operations and complete aspects on the installation of a second linder shredder in Killeen road. Notify EPA of works prior to commencement.	Jan-16	Complete - shredder installed Feb 2016
EP 08	Jan-16	Environmental	Review of Environmetal Legal Register file	All Sites	GC	1. Review existing Legal Register. 2 Ascertain new legislation which applies to Thorntons Recycling . 3. Input new legistation 3. insert section for revoked legislation	Jul-16	Carry over from 2015
EP 09	Jan-16	Environmental	Review third party tipping recording template and create one template for all sites	All Sites	DD/GC/SC	1. Review current format and identify missing data. .2 Create a new format. 3 Each site to track third party tippers and update	Jun-16	Template created and all sites are on the one sheet and can be filtered by site if needed. Missing data on spreedsheet needs to be collated. On going work.
EP 13	Jan-16	Environmental	Concreting works for the main yard at the entracne to Bay 1 &2 of Building 5	Killeen Road	Ted / DD	1. Cut concrete. 2 Remove concrete. 3. Top up infill. 4. Put in rebar. 5. Pour concrete	Jan-16	Completed- On week 1 of 2016
EP 14	Jan-16	Environmental	Trail with OMI on new odour abatement technology	Killeen Road	Ted / DD	1. Agreed procedure with OMI. 2 Install trail system. 3. Test results of trail system. 4. Review report in order to make a decision on long term installations	Apr-16	Report received from OMI. Report results were not sufficiently conclusive. Agreement was reached to continue with our current system and we have requested a proposal from OMI as to the cost and benefits of an increase in the current odour treatment capacity.
EP 18	Mar-16	Environmental	Repak SRF Survey in Killeen road	Killeen Road	GC	1. Agree Procedure and time frame with Repak.. 2 Contract Consultants. 3, Arrange the gathering of the maetrials for the survey. 4 Arrange staff and machinery for the survey. 5. Supervise the survey. 6 Proof the report. 7. Submit the report to Repak.	Sep-16	Complete

PM03- F01 Management Programme 2017

COMPLETED		ON HOLD CARRY FORWARD TO 2018			ON HOLD			
Ref Numb	Date	Type	Objective and Target	Location	Responsibility	Method	Time Frame	Status
ENVIRONMENTAL								
EP 04	Jan-17	Environmental	Killeen road mobile Bund tests	Killeen Road	FB	1. Obtain quotes. 2 Scheudle work. 3. Supervise work. 4. Review report. 5. Submit report	Jun-17	
EP 05	Jan-17	Environmental	Waste Storage plan Condition 5.13	Killeen Road	FB	1. Review requirements with operations. 2. Draft plan. 3 Circulate for comments. 4 Create final copy. 5 Submit final plan	Jun-17	

Appendix 6

24th June 2016

To Whom It May Concern

Confirmation of Insurance Cover

Our Client: **Padraig Thornton Waste Disposal Ltd and Subsidiary Companies**

We act as Insurance Brokers to the above client and confirm that the following insurance has been arranged on their behalf.

Insurance Type	:	Combined Liability
Period	:	01 July 2016 to 30 June 2017
Business Description	:	Domestic, Industrial and Commercial Waste Collection, Recycling and Disposal (Including:- Liquid Waste for Local Authorities) Management and Operation of Bring centre and Property Owners (including - some building work), Composting End of Life Vehicle Processing, Maintenance of Own Vehicles and Contractors Vehicles used on the business of the insured and Property Owners (Including some building work)
Public Liability Limit of Indemnity	:	€13,000,000 any one occurrence or series of occurrences arising from any one originating cause including costs and expenses
Products/Pollution Limit of Indemnity	:	€13,000,000 in all during the period
Employers Liability Limit of Indemnity	:	€20,000,000 any one occurrence or series of occurrences arising out of one originating cause
Insurers	:	QBE Casualty Syndicate 386
Policy Number	:	AA156568I
Risk Reference	:	PADR05

Yours sincerely

Colin Hehir
Account Manager
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Notwithstanding the issuance of this letter we are and remain solely the agent of our Client in this matter and owe no duties to any recipient of this letter.

Appendix 7

Sheet : Facility ID Activities | AER Returns Workbook | 24/1/2017 15:42

Environmental Protection Agency

Guidance to completing the PRTR workbook

PRTR Returns Workbook

REFERENCE YEAR	2016

1. FACILITY IDENTIFICATION

Parent Company Name	Padraig Thornton Waste Disposal Limited
Facility Name	Thorntons Recycling Centre (Ballyfermot)
PRTR Identification Number	W0044
Licence Number	W0044-02

Classes of Activity

No.	class_name
-	Refer to PRTR class activities below

Address 1	Killeen Road
Address 2	Ballyfermot
Address 3	Dublin 10
Address 4	
	Dublin
Country	Ireland
Coordinates of Location	-6.35373 53.3348
River Basin District	IEEA
NACE Code	3821
Main Economic Activity	Treatment and disposal of non-hazardous waste
AER Returns Contact Name	Fergal Brennan
AER Returns Contact Email Address	fergal@thorntons-recycling.ie
AER Returns Contact Position	Environmental Officer
AER Returns Contact Telephone Number	087 3737878
AER Returns Contact Mobile Phone Number	087 3737878
AER Returns Contact Fax Number	NA
Production Volume	250000.0
Production Volume Units	tonnes
Number of Installations	3
Number of Operating Hours in Year	8000
Number of Employees	40
User Feedback/Comments	
Web Address	www.thorntons-recycling.ie

2. PRTR CLASS ACTIVITIES

Activity Number	Activity Name
5(c)	Installations for the disposal of non-hazardous waste
5(c) 50.1	Installations for the disposal of non-hazardous waste General

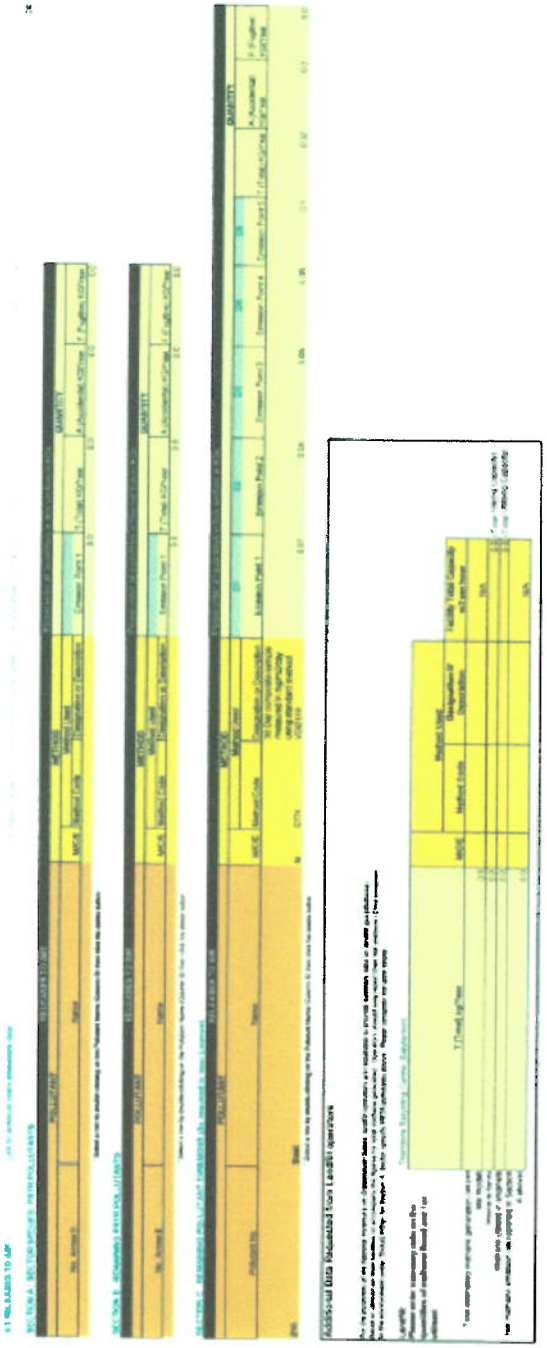
3. SOLVENTS REGULATIONS (S.I. No. 543 of 2002)

Is it applicable?	No
Have you been granted an exemption ?	No
If applicable which activity class applies (as per Schedule 2 of the regulations) ?	
Is the reduction scheme compliance route being used ?	

4. WASTE IMPORTED/ACCEPTED ONTO SITE

Guidance on waste imported/accepted onto site

Do you import/accept waste onto your site for on-site treatment (either recovery or disposal activities) ?	No



4.4 RELEASES TO LAND

SECTION A : PRTR POLLUTANTS

RELEASES TO LAND							
POLLUTANT			METHOD	Please enter all quantities in this section in KGs			
No. Annex II	Name	M/C/E	Method Used	Emission Point	QUANTITY		
					T (Total KG/Year	A (Accidental KG/Year	
					0.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION B : REMAINING POLLUTANT EMISSIONS (as required in your Licence)

RELEASES TO LAND							
POLLUTANT			METHOD	Please enter all quantities in this section in KGs			
Pollutant No.	Name	M/C/E	Method Used	Emission Point	QUANTITY		
					T (Total KG/Year	A (Accidental KG/Year	
					0.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button