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LA004392	Operational Report Pancaking Laundry Limited	Final



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Operational Report for Waste Licence Application

Packaging Laundry Limited

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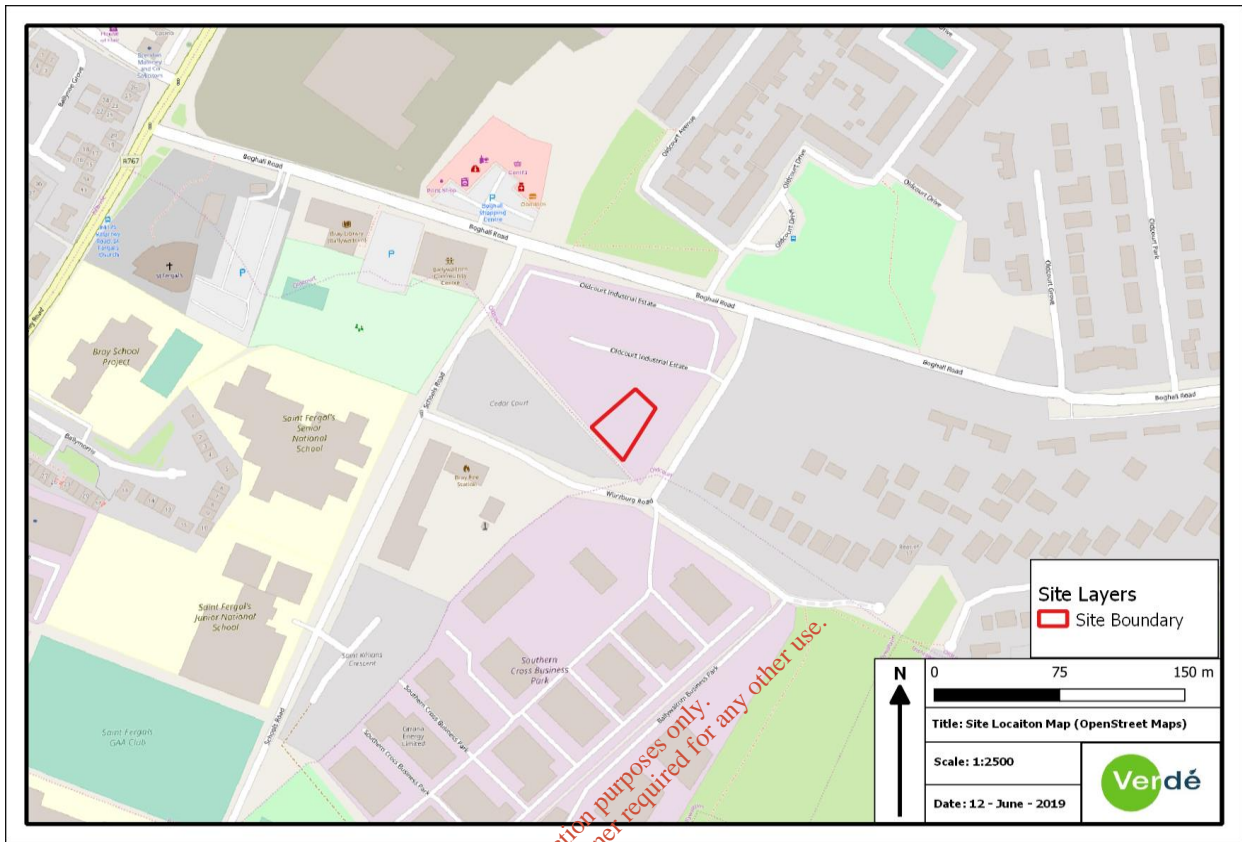
1 EXISTING FACILITY OVERVIEW & PROPOSED CHANGES

Packaging Laundry Limited, hereafter referred to as Packaging Laundry, is applying for a Waste Licence for their existing waste management facility located in the Oldcourt Industrial Estate, located off the Boghall Road in Bray, County Wicklow (Figure 1). The facility is currently authorised to operate through a Waste Facility Permit issued by Wicklow County Council (Permit No. WFP-WW-18-0043-01) and its primary activity relates to the acceptance and re-conditioning/refurbishment of empty industrial packaging; notably Intermediate Bulk Containers (IBCs). The permit allows collection of packaging defined under List of Waste Codes 15 01 02 and 15 01 04. The company plans to expand services so that limited packaging defined under List of Waste Code 15 01 10* can be accepted and refurbished. To facilitate this activity, Packaging Laundry has been advised by the Environmental Protection Agency through the Article 11 process that a waste licence is required.

The facility operates from an industrial warehouse located within the Oldcourt Industrial Estate (also known as the Oldcourt Business Park). The industrial estate is located just off the Boghall Road in Bray, County Wicklow and features a range of tenants including a vehicle maintenance company, a flooring supply company, a paint and decorating centre and a packaging component company. The Packaging Laundry facility comprises a warehouse/industrial unit (4C) with associated triangular enclosed yard area on its eastern side (Figure 2). The overall site area, including the foreyard and storage yard areas is approximately 0.135 hectares. The premises are located close to the industrial park's sole entrance and exit onto Wurtzburg Avenue.

The facility operates five days per week and is open between 08:00 and 18:00. The business currently employs four staff members.

Figure 1. Site Location - Oldcourt Industrial Estate, Boghall Road, Bray, County Wicklow



Source: (Open Street Maps 2019)

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2 FACILITY OPERATIONS

The primary focus of activities at the facility is the refurbishment and reconditioning of a range of empty industrial packaging that is received from existing customers. The primary packaging accepted is empty IBCs or empty steel drums. A Waste Facility Permit issued by Wicklow County Council in May 2018 (Reg. No. WFP-WW-18-0043-01) allows the acceptance and treatment of plastic packaging (List of Waste Code 15 01 02) and Metallic Packaging (15 01 04).

The majority of activities undertaken at Packaging laundry involves “Closed Loop IBC Reconditioning”. This service involves accepting used, empty IBCs which are then cleaned, refurbished and pressure tested for leaks at the facility before being returned to the same customer for re-use for the same purpose. Other services include “Open Loop Reconditioning”, “Steel Packaging Reconditioning”, IBC dismantling and rebottling and steel drum dismantling. These processes are described in greater detail in Sections 2.1 – 2.5 below.

The waste licence application relates to an expansion in the list of waste codes that will be acceptable at the facility. Packaging Laundry has been advised by the Agency that a Licence is required to accept packaging code 15 01 10* (Packaging containing residues of or contaminated by hazardous substances). The company also plans to include additional waste codes on its licence including composite packaging and wooden packaging.

The type and quantity of wastes to be handled, stored and treated on site are described in Table 2.1. A summary of the current material processing is provided in detail below.

Table 2.1 Summary details of planned, licensed waste types and quantities for proposed facility.

<i>EWC Code (LoW)</i>	Description of Waste	Annual Tonnage
<i>EWC 15 01 02</i>	Plastic Packaging	100
<i>EWC 15 01 04</i>	Metallic Packaging	250
<i>EWC 15 01 05</i>	Composite packaging	400
<i>EWC 15 01 01</i>	Paper and cardboard packaging	100
<i>EWC 15 01 03</i>	Wooden Packaging	200
<i>EWC 15 01 10*</i>	Packaging containing residues of or contaminated by hazardous substances	600
	Total Tonnage PA	1,650

***Waste code relating to requirement for EPA Waste License**

In general, Packaging Laundry accepts empty IBCs and steel drums which are refurbished (through cleaning, drying and leak testing) and prepared for re-use. In certain instances, these packaging containers are dismantled and reconstituted (through the replacement of IBC bottles for example) or where they cannot be re-used, the containers are dismantled (cut into manageable pieces) and prepared for transfer to an authorised waste recovery/recycling facility. These established practices will be retained and applied subject to condition, pending the issuance of waste licence by the Agency.

2.1 IBC Reconditioning (Closed-Loop)

The main facility operations at Packaging Laundry involves the reconditioning of IBCs. This service allows their customers a sustainable alternative (both financially and with regards their overall ecological impact) to having to regularly discard used IBCs after a single use. Packaging Laundry accepts empty IBCs for reconditioning before they are returned to the same customer for re-use for the same original purpose. A number of Irish business send their used IBC's abroad (namely to the UK) for reconditioning, incurring significant carbon footprint and transport and waste disposal costs. IBCs are designed to be re-used and the closed loop reconditioning service (and indeed open loop described below) encourages this practice and also complies with the waste hierarchy in encouraging the prevention of waste and the re-use of materials.

The closed loop process involves the following stages:

- The external surfaces of each container are cleaned and labels removed;
- The inside of the container is cleaned/washed using a three-stage high pressure/low volume water system. No cleaning agents, chemicals or solvents are used in the cleaning process. A specialist 360° hose is mechanically lowered inside the IBC which cleans the interior of the container using high

pressure water spray at 400 Bar pressure. The containers undergo a three-stage washing process before the cleaning water is pumped into a 5,000 litre bunded storage tank prior to licensed discharge under controlled conditions (testing prior to discharge) to the municipal sewer;

- Cleaned IBCs are dried using fan dryers;
- Quality control checks are undertaken where any minor faults are identified and repaired (ie- faulty seals or damaged taps are replaced).
- A pressure test and final inspection is undertaken can also include painting of the steel cage to improve the appearance and mitigate rust.
- IBC containers are then labelled to indicate they have been reconditioned and tested before being made available for transport back to their owners.

There are several advantages to the close loop system – sustainability, prevention of waste, certainty of re-use and financially preferable to customers who are not required to purchase brand new replacement containers. IBCs are designed for multiple use.

2.2 IBC Reconditioning (Open-Loop)

Open Loop Reconditioning is the process whereby Packaging Laundry collect an IBC either free of charge or for a rebate from a company who has emptied their material out of the IBC and has no further use for it. Once reconditioned using the same process outlined above, these IBCs are sold to customers as certified, reconditioned IBCs.

2.3 Steel Barrel Reconditioning (Open-Loop)

Open-top steel drums arriving to site undergo the same inspection protocol that is implemented for IBCs and must be as empty as practically possible. Labels are removed from the outside of the drum. To remove any residue, the lids are removed, and the drums are inverted and placed over a steel collection bund inside a drum oven which is heated allowing residue to liquefy and flow into the bund. Collected residue is transferred to an IBC for storage prior to collection by Lehane Environmental for recovery. Lids are replaced onto the drums which are palletised for supply to a customer for re-use.

Packaging Laundry also accepts steel tighthead drums. Following an identical acceptance and preparation procedure listed above, the steel is then cleaned for re-use. Once Labels and closures are removed, drums are placed inside a purpose-built drum cleaning cabinet. A spinning wand automatically rotates inside the steel drums for two wash cycles at 200 bar pressure. Wash is pumped from a collection sump in the bottom of the drum washer into the 5,000-litre holding tank. As per above, the effluent is tested prior to discharge to the municipal sewer under conditions contained in a discharge licence issued by Irish Water.

2.4 IBC Dismantling and Rebottling

IBCs with a bottle no longer suitable for reconditioning or that fail the leak test are also accepted onto the site in line with conditions of the current WFP. All end of life IBCs are delivered onto the site following the same acceptance protocol implemented for all containers. IBCs are washed and dried using the same processes as those described above for refurbishment. Following drying, IBCs are removed to a dedicated area where the HDPE bottles are cut into 6 manageable 1m x 1m panels. Cutting of the IBCs is performed by staff on site using an electrical reciprocating saw. The panels are then stored on site to await authorised transfer to an off-site licenced facility for HDPE regrinding and recycling (current outlet is Leinster Environmental, Permit Ref. No. WFP-LH-11-0002-02). All processes on site are managed in compliance with conditions of the Waste Facility Permit (WFP-WW-18-0043-01) issued by Wicklow County Council. New bottles are then placed into the Reconditioned IBC steel cages and made available for re-use to customers.

2.5 Steel Drum Dismantling

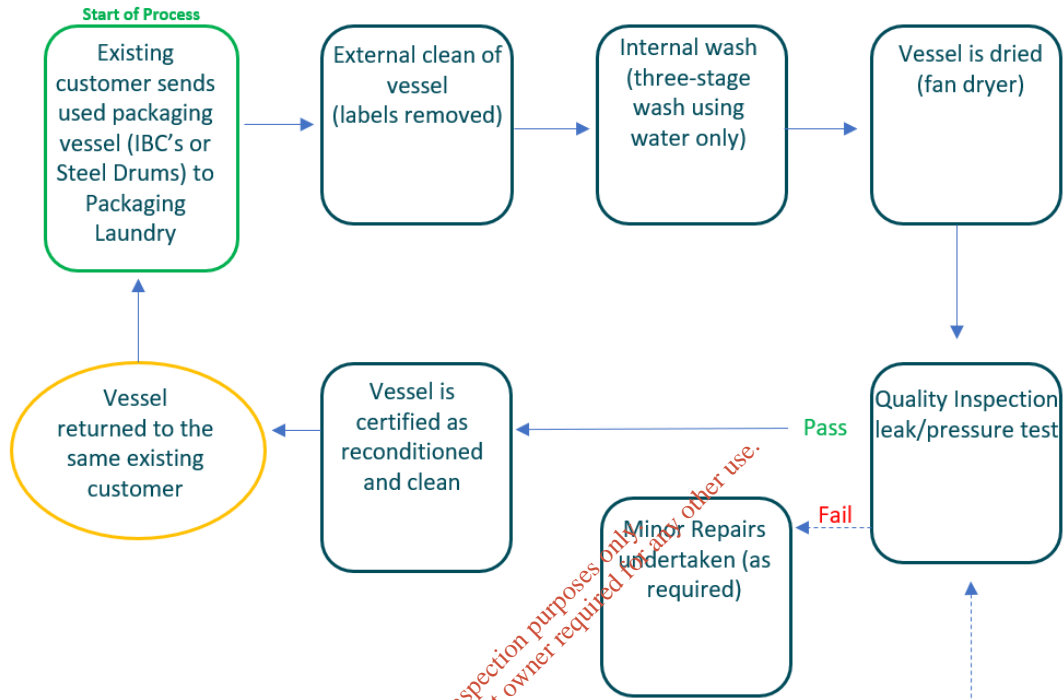
Steel drums which are not suitable for re-use are accepted onto site as per waste acceptance protocols referred to above. The drums are then washed in the steel drum washer and are crushed in preparation for steel recovery at an appropriated licenced facility (currently Multimetals Recycling in Wicklow Town - Permit Reg. No. WFP-WW-09-0014-05).

An overview of the internal site layout is provided below in Figure 2. Process Flow Diagrams for the above process are presented overleaf.

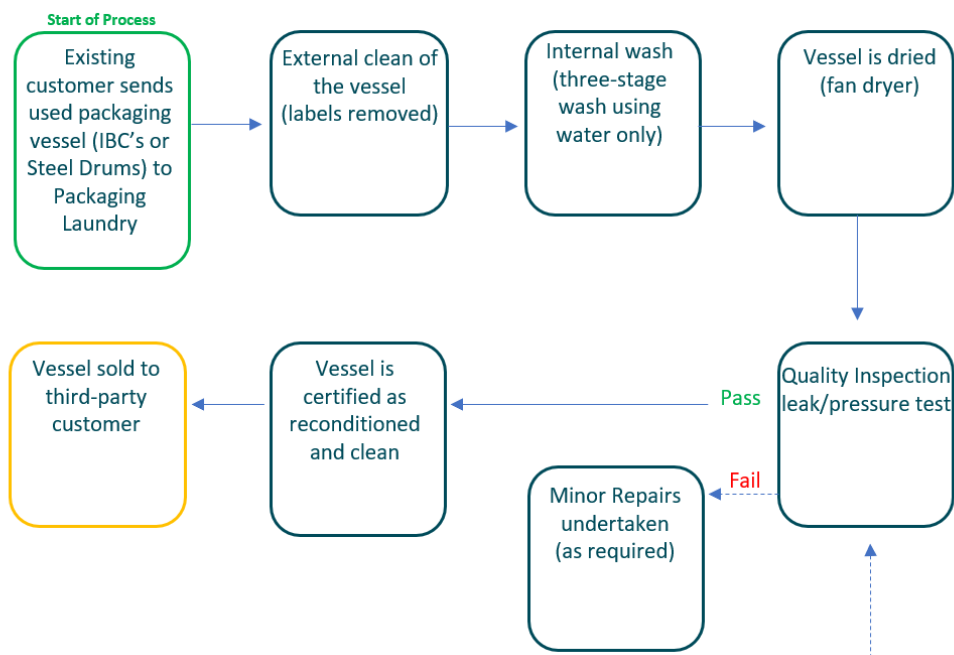
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Process Flow Diagrams for the above process are presented below.

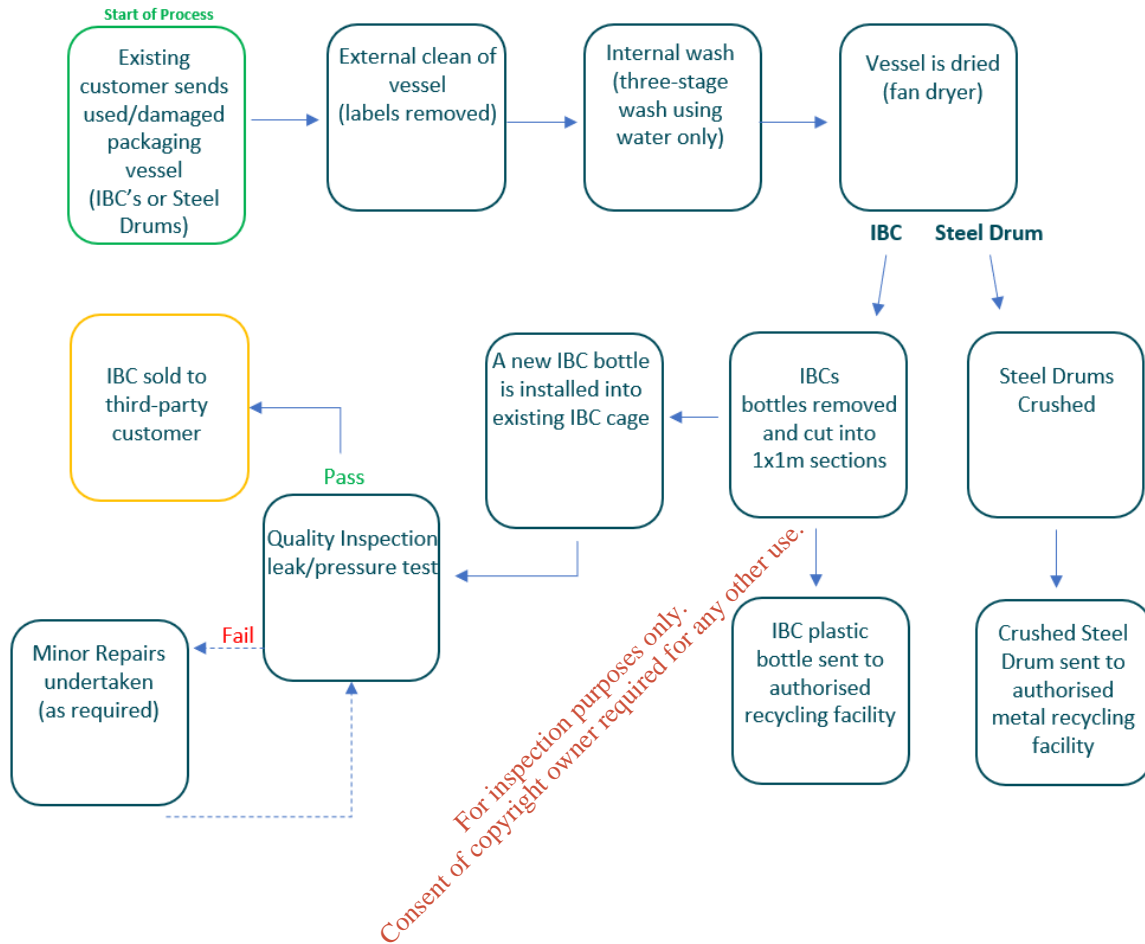
Closed Loop Vessel Reconditioning



Open Loop Vessel Reconditioning



Vessel Dismantling & Rebottling/Recycling



2.7 Capacity and Throughput

Packaging Laundry currently operates under a Waste Facility Permit issued by Wicklow County Council in May 2018 (Permit Ref. No. WFP-WW-18-0043-01). The permit was granted listing the site as Class 10 activity with List of Waste (LoW) codes 15 01 02 and 15 01 04. The current permitted capacity is limited to 500 tonnes per annum as per permit condition 1.5.

Following consultation with the Agency, Packaging Laundry intends to apply for a waste licence so that List of Waste Code 15 01 10* can be accepted at the facility. This code is precluded under the current permit. Containers accepted on the site will be considered empty as is currently the case with any IBC or container accepted onto the facility under the existing Waste Facility Permit. Packaging Laundry will only collect IBC's and Drums which are drained or emptied to the point that they as empty as is practically possible (less than 1% residue). In advance of any collection, this is agreed with suppliers via a container returns form which outlines the collection conditions.

Under conditions of a waste licence, Packaging Laundry is seeking to accept up to 1,650 tonnes per annum. Of this, 400 tonnes will comprise 15 01 10*.

Theoretically, it is estimated that up to 3,000 tonnes per annum could be processed at the existing facility. The capacity sought as part of the licence application is 1,650 tonnes per annum in total and is regarded as a reasonable aspiration in terms of meeting customer needs and securing the future of the business.

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3 MATERIALS & WASTES

3.1 Materials Used

Materials used in day to day operations at the facility include the following (referred to also in Attachment-4-6-2-Raw Materials);

- Dilute (HCL) acid for the pH neutralisation of wastewater prior to discharge (1,000L)
- Antifoaming agent to facilitate high pressure washing of containers (80L)
- Alcohols (n-butanol) used in the flushing stages of steel drum cleaning (1,500L)
- Small amounts of assorted paints for reconditioning containers (40L)
- Small amounts of assorted domestic cleaning substances for general use within staff canteen and bathrooms (surface cleaners, bleach etc) (10L)
- Small amounts of pest control product (1kg)
- Small amounts of general-purpose lubricants and solvents (5L)

Given the scale of the operations proposed at the site (maximum 1,650 tonnes per annum), only small amounts of the above listed materials will be retained on site at any one time.

3.2 Bund Testing & Leak Prevention

Any of the substances/chemicals that are stored on site are kept in appropriately banded containers which are leak tested and certified as outlined in the current Waste Facility Permit. All processed/reconditioned IBC tanks are leak tested using a pressure device which determines the integrity and condition of the valves and walls of each IBC tank. Any containers failing this test are either repaired or sent for decommissioning/deconstruction.

3.3 Waste Management

In general; 98% of material accepted at the facility is refurbished/recondition for re-use. 2% of materials accepted are prepared for recovery/recycling at off-site licensed/permitted waste management facilities. As described in Section 2; waste mainly arises when containers are determined to be unsuitable for re-use or reconditioning. In this scenario, containers are decommissioned through crushing (steel drums) or through cutting and bailing of plastics (IBC containers). Where a container is damaged beyond repair and cannot be refurbished, plastic and metal component are retrieved from the clean packaging and are segregated and prepared for transfer to an authorised recycling/recovery facility. This treatment can involve cutting of plastic from IBCs into manageable sizes (six 1m x 1m sheets) or crushing of metal. Metal waste arising from the decommissioning of steel drums is initially stored in a basket on site, where it awaits shipping to an offsite metal recovery facility. The scrap steel is periodically sent to Multimetals Recycling in Wicklow Town (Permit

ID: WFP-WW-09-0014-05) whilst bails of cut plastic are sent to Leinster Environmental, (Permit ID: WFP-LH-11-0002-02) for HDPE grinding and reprocessing. If re-usable, the remaining steel cage from the decommissioned IBC is then reconditioned as per normal procedure and a new/reconditioned IBC plastic tank installed Waste wash water, resulting from the internal cleaning of containers, is temporarily stored in a 5,000-litre on-site tank, where it is gradually discharged to the municipal sewage system as per the trade effluent discharge license granted by Irish Water (License: W-DTS-809938-01). Municipal and general waste generated by the site through the operation of the facility, is segregated, stored in standardised 240-litre bins, and regularly collected by Greenstar waste services.

4 EMISSIONS

The primary activity at the facility will continue to be the recovery and reconditioning of used packaging comprising plastic, metal or composite materials (mainly IBCs). In terms of waste management facilities, emissions are limited at the Packaging Laundry facility due to the scale of the operation, limited type of material accepted, and nature of processing undertaken. The activity does not generate significant dust, noise or odour and there is no discharges to groundwater.

The main source of emissions will continue to be the discharge of wash water to the municipal sewer. This is currently undertaken in compliance with a discharge licence issued by Irish Water under the Local Government (Water Pollution) Acts, 1977 and 1990, as amended. Wash water is contained within a 5,000 litre bunded tank, prior to controlled (see below) discharge to sewer. Other minor emissions are described below.

4.1 Emissions to Air

There are no significant emissions to air associated with the operation of the facility. No significant amounts of Volatile Organic Compounds are stored on site other than the kerosene used to heat the boiler supplying water for the power washer. This kerosene is stored in a tested and certified tank which is stored in a bunded area which will contain any fluids in the event of a leak or breach.

A Nilfisk-alto Neptune 5-57X Hot Power Washer is occasionally used to clean the external surfaces of IBC tanks. This uses an ECoPower diesel boiler, rated to 92% efficiency by the manufacturer. The facility consumes about 1.2 tonnes (1,500 litres) of kerosene annually in the fuelling and usage of this power washer. Using the Sustainable Energy Authority of Ireland's (SEAI) 2019 emission conversion information, it is estimated that approximately 4 tonnes of CO₂ is emitted annually through the use of the power washing device.

As outlined in the Site Condition Report (Attachment-4-8-4), particulate matter arising from the decommissioning of plastic packaging materials, does not occur in any significant quantities. The limited amount of cutting of plastics on-site, as well as the fact that such activities are carried out indoors, prevents

dust generation. The principle activity of the facility involves the washing and refurbishment of packaging containers through a wet, closed-loop process. As such, these activities are not associated with the generation of fine particulates or dust. The small-scale nature of the decommissioning activity and the maintenance of good housekeeping policies, coupled with the indoor location of such processes, means that dust and particulate generation is negligible. Whilst no quantitative information is available on on-site plastic particulate generation is available, an EPA ambient air quality monitoring station is located less than 100m from the facility. Results of airborne particulate matter (PM2.5 and PM10) measured at this station indicate that Bray has an AQIH rating of Good.

The facility does not generate significant emissions of dust or particulates to the local atmosphere.

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4.2 Emissions to Surface Water

General storm water from the surfaces and roofs on-site is drained via gutters and pipes to the municipal storm water drainage system.

As well as this, IBCs that are accepted onto the site (having been screened and approved as per waste acceptance procedures described) are initially stored in the goods receiving area in front of the facility. If required, the external surfaces of the IBCs are cleaned using a Nilfisk-alto Neptune 5-57X Hot Power Washer. No chemicals or cleaning agents are used in this process. The resulting water drains to the local storm water drainage system after going through a drain mesh and silt trap. This process does not involve the washing or removal of chemical or substances from the containers, but instead is primarily to ensure all labelling is removed and the external surfaces of the containers are aesthetically clean.

4.3 Emissions to Sewer

The main emission source associated with current and future activity at the facility is the licensed discharge to sewer of wash water arising from the internal laundering of containers. Water from the washing process is drained and stored pending release in a 5,000 litre bund-protected, water storage tank. The tank is monitored prior to discharge to public sewer to ensure compliance with emission limit values contained in Discharge Licence W-DTS-809938-01 issued Irish Water discharge licence in 2017.

Prior to discharge, water within the tank is tested for pH as per condition of the Discharge Licence. If found to be outside the emission limit value (6.0 – 10.0 pH units), the water is neutralised through dosing with dilute Hydrochloric Acid (HCL). Records of pH and flow are measured before every discharge. These records are retained on site. As per Schedule B of the Discharge Licence, the discharge is sampled on a quarterly basis and tested by an accredited laboratory for a range of parameters. Results are forwarded to Irish Water in the annual report due before 31st January each year. The parameters and associated acceptance limits are outlined in Table 2.2 below.

The facility has 3-4 people working on site. Apart from the sewer discharge emissions associated with the wash water produced on site, sanitary wastewater is discharged directly to the municipal foul sewer.

Table 24.1 - Summary of Irish Water Discharge Permit Threshold Parameters

<i>Parameter</i>	<i>Concentration (mg/l)</i>	<i>Load (kg/day)</i>
<i>Biological Oxygen Demand (BOD)</i>	1000	5
<i>Chemical Oxygen Demand (COD)</i>	3000	15
<i>Total Suspended Solids</i>	1000	5
<i>Fats, Oils and Grease</i>	100	0.5
<i>Total Phosphorous</i>	15	0.075
<i>Total Ammonia (As N)</i>	20	0.1
<i>Chloride</i>	1000	5
<i>Sulphate</i>	800	4
<i>Detergents (MBAS)</i>	100	0.5
<i>Flow (m³/day or m³/hr)</i>	5.0 or 0.5	
<i>pH</i>	6.0 – 10.0	
<i>Temperature (°C)</i>	35.0	
<i>Toxicity (Toxicity Units*)</i>	10.0	

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5 REDUCTION/ABATEMENT SYSTEMS

The following systems are in place to abate the discharge of certain substance to the municipal foul and storm water draining networks;

- Wastewater arising from internal washing of tanks is collected and stored in a 5,000L bunded storage tank. This tank facilitates the following;
 - Controlled discharge of wastewater to the sewage network
 - pH neutralisation of wastewater prior to discharge
 - Scheduled sampling of wastewater
- Wash water arising from the occasional external cleaning of IBC tanks at the facility drains to surface water. The abatement of solid material discharge to this network is provided by;
 - Silt traps within the storm drain receiver
 - Particulate and debris trap in the form of mesh drain traps which are cleaned daily.

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6 SPILL MANAGEMENT & ABNORMAL OPERATING CONDITIONS

In compliance with Conditions 7.1 and 7.2 of the current Waste Facility Permit, Packaging Laundry has developed an Emergency Preparedness and Response Plan (MN01). This Plan includes the procedural response to be taken in the event of a chemical or wastewater spill at the facility. With regard to such an event occurring, the Plan outlines the following procedure;

- Immediately report the occurrence to the Operations Manager
- The spill should be contained immediately to prevent pollution to on-site storm water drainage
- Ensure personnel are fully protected through usage of PPE
- Locate the source of the spillage and turn off tap or valve, plug the leak or roll the drum/IBC so that the hole is on the top
- If this is not possible, use containers to catch the escaping liquid.
- In the event where a flood or spillage cannot be contained, contact the Fire Brigade
- Switch off or remove any sources of ignition close to the spill
- Block access to Factory drainage, gullies etc., through the correct use spill containment kits as appropriate
- Do not wash liquid away with water as this may disperse any contaminant off-site
- Contaminated absorbents shall be bagged and shipped and disposed of as special waste
- Seal off the contaminated area
- Clean the contaminated area
- Record the spillage on the waste facility permit compliance log, detailing the circumstances of the incident and the remedial action taken
- Submit report to Wicklow County Council or the Agency

In addition to the above scenario and spill management, the Emergency Preparedness and Response Plan includes Standard Operating Procedures (SOPs) for the following emergency incidents;

- Fires or Explosions
- Electrical Emergencies

Packaging Laundry's Emergency Preparedness and Response Plan aims to reduce, minimise or eliminate the likelihood of negative environmental impacts occurring in the event of an unforeseen event or accident.

7 ALTERNATIVES

The primary focus of activity at the facility is the refurbishment/reconditioning of a range of empty industrial packaging that is received from existing customers of Packaging Laundry. The primary packaging accepted is empty IBCs. A permit issued by Wicklow County Council allows the acceptance and treatment of plastic packaging (List of Waste Code 15 01 02) and Metallic Packaging (15 01 04). A Closed Loop IBC Reconditioning service allows Packaging Laundry to provide a reconditioning service for customers, whereby used, empty IBCs are transferred to the facility, refurbished and returned to the customer for same purpose re-use. The process is described in more detail below. Other services include open loop reconditioning, steel packaging reconditioning, IBC dismantling and rebottling and steel drum dismantling. The licence application relates to an expansion in the list of waste codes that will be acceptable at the facility. Packaging Laundry has been advised by the Agency that a Licence is required to accept packaging code 15 01 10* (Packaging containing residues of or contaminated by hazardous substances). The company also plans to include additional waste codes on its licence including composite packaging and wooden packaging.

From consultation with the Agency, Packaging Recycling understands that the proposed activities cannot be authorised under a waste facility permit despite the small-scale nature of the activity. The alternative is to seek a waste licence to accept up to 1,650 tonnes per annum.

The current washing activity results in discharge to the municipal foul drainage network. This discharge is controlled (via temporary storage within a 5,000 Litre holding tank) and authorised under a discharge licence issued by Irish Water. This is considered the best viable option for such discharged process water.

Whilst the activity can be considered relatively straight forward, the technology employed at the facility represents the cleanest and safest option for the laundering of used chemical storage vessels. No cleaning agents or chemicals are used in the process. Only clean water is applied under pressure using purpose-built drum wash machines which remove all trace chemical residue over several varying wash cycles.