

## Attachment-4-3-4-R and D Activity Capacity Calculations

### Capacity - Waste Recovery/Disposal Activities

The majority of operations at Packaging laundry Ltd. (hereafter referred to as Packaging Laundry) involve recycling of metal and plastic from Intermediate Bulk Containers (IBCs) and steel drums. These processes are summarised as follows:

- IBC Reconditioning Closed Loop – The principal activity at Packaging Laundry is the reconditioning of customer’s used IBC’s. This process involves receiving empty IBCs (that is, as empty as practicably possible), removing any trace residue by way of washing under pressure with water (no chemicals, cleaning agents or solvents are used in the process) before they are dried, pressure tested, checked for defects and returned to the customer for reuse again for the same purpose. This process, together with open loop IBC reconditioning mentioned below, makes up 98% of activities at the business and represents Class R4, R5, R12 and R13 (discussed in greater detail below).
- IBC Reconditioning Open Loop – This occurs where empty, used IBCs are collected from a customer who has no further use for the packaging. The same reconditioning service is performed as above however the reconditioned IBC’s are sold to a third party for re-use. This process also represents Class R4, R5, R12 and R13.
- Steel Barrel Reconditioning Open Loop –Reconditioning of customer’s steel drums which are cleaned, dried and checked for defects before being returned to the customer for re-use again for the same purpose. This process represents Class R4 and R12.
- IBC Dismantling and Rebottling – Damaged IBC bottles, or bottles that fail the leak test in the reconditioning services provided, are removed, washed, dried and cut into manageable pieces before being transferred to authorised recyclers. New bottles are then placed into reconditioned IBC steel cages and supplied as a re-bottled IBC to a third party. This process represents Class R4 and R12.
- Steel Drum Dismantling – Steel drums that are damaged beyond safe repair are washed and crushed before transfer to authorised metal recovery facility. This process represents Class R4, R12 and R13.

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.

In order to offer additional services at the facility, Packaging Laundry consulted with the EPA (under Article 11) to allow material described under LoW code 15 01 10\* (packaging containing residues of or contaminated by hazardous substances) to be accepted at the facility. The Agency advised that these activities do not apply to the acceptance, recovery and storage of used packaging that contained remnants of hazardous substances.

Packaging Laundry intends to apply to the Agency so that List of Waste Code 15 01 10\* can be accepted at the facility. Containers accepted on the site will be effectively empty as is currently the case with any IBC or container accepted onto the facility at present 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 are considered to be as empty as practically possible. In advance of any collection, this is agreed with suppliers via a container returns form which outlines the collection conditions.

The type and quantity of wastes to be handled, stored and treated on site are described in Table 1.1 below. Out of a total tonnage per annum of 1,650; up to 400 tonnes will constitute packaging that contains residues of, or contaminated by a hazardous substance

#### Class Description

The following activities proposed to be authorised under the waste licence will be restricted to the following classes:

*Fourth Schedule of Waste Management Act 1996 (as amended)*

#### **R3**

Recycling/reclamation of organic substances which are not used as solvents (including composting and other biological transformation processes), which includes gasification and pyrolysis using the components as chemicals.

Packaging Laundry Ltd will accept and store wooden pallets (used in transport of IBCs and drums onto the site) pending their re-use.

#### **R4**

Recycling/reclamation of metals and metal compounds.

Packaging Laundry Ltd recondition/refurbish empty IBCs and metal drums so that these can be re-used by the owners of these containers (closed loop) or by new customers.

#### **R5**

Recycling/reclamation of other inorganic materials, which includes soil cleaning resulting in recovery of the soil and recycling of inorganic construction materials.

Packaging Laundry Ltd recondition/refurbish plastic packaging containers and other composite packaging containers

#### **R12**

Exchange of waste for submission to any of the operations numbered R 1 to R 11 (if there is no other R code appropriate, this can include preliminary operations prior to recovery including pre-processing such as, amongst others, dismantling, sorting, crushing, compacting, pelletising, drying, shredding, conditioning, repackaging, separating, blending or mixing prior to submission to any of the operations numbered R1 to R11).

Where packaging material cannot be re-furbished, Packaging Laundry Ltd will prepare that material for recovery/recycling at other facilities. In the case of metal drums, these will be washed in the steel drum washer and are crushed in preparation for steel recovery at authorised facility. Unusable IBCs plastic containers are washed and dried and cut into 6 manageable 1x1m panels which are stored on site pending collection by authorised collector for further treatment (HDPE regrinding and recycling) at authorised facility.

**R13**

Storage of waste pending any of the operations numbered R 1 to R 12 (excluding temporary storage (being preliminary storage according to the definition of ‘collection’ in section 5(1)), pending collection, on the site where the waste is produced).

This activity refers to the storage of waste at the facility prior to on site recovery or consignment to off-site recovery facilities.

Maximum Capacity

The calculations provided in Table 1.1 below present a breakdown of each class of waste to be accepted at the facility. Table 1.2 presents this same information as represented by each List of Waste (LoW) code.

These calculations are based on current and projected increases in waste accepted. Waste is managed in such a way that it is frequently received, reconditioned and leaves the site within one week or less.

**Table 1.1 – Activity Capacity Calculation – Class**

Class	Description	Tonnage Per Annum	Tonnes per day
R3	Recycling/reclamation of organic substances which are not used as solvents (including composting and other biological transformation processes), which includes gasification and pyrolysis using the components as chemicals.	300	1.20
R4	Recycle/reclamation of metals and metal compounds.	830	3.31
R5	Recycling/reclamation of other inorganic materials, which includes soil cleaning resulting in recovery of the soil and recycling of inorganic construction materials.	500	1.99
R12	Exchange of waste for submission to any of the operations numbered R 1 to R 11 (if there is no other R code appropriate, this can include preliminary operations prior to recovery including pre-processing such as, amongst others, dismantling, sorting, crushing, compacting, pelletising, drying, shredding, conditioning, repackaging, separating, blending or mixing prior to submission to any of the operations numbered R1 to R11).	10	0.04
R13	Storage of waste pending any of the operations numbered R 1 to R 12 (excluding temporary storage (being preliminary storage according to the definition of ‘collection’ in section 5(1)), pending collection, on the site where the waste is produced).	10	0.04
<b>Total:</b>		<b>1,650</b>	<b>6.57</b>

**Table 1.2 – Activity Capacity Calculation – LoW Codes**

List of Waste Code	Description of Waste	Tonnes Per Annum	Tonnes per day	R Code		
15 01 02	Plastic Packaging	100	0.40	R5	R12	R13
15 01 04	Metallic Packaging	250	1.00	R4	R12	R13
15 01 05	Composite packaging	400	1.59	R5	R12	R13
15 01 01	paper and cardboard packaging	100	0.40	R3	-	-
15 01 03	Wooden Packaging	200	0.80	R3	-	-
15 01 10*	Packaging containing residues of or contaminated by dangerous substances	600	2.39	R4	-	-
<b>Total</b>		<b>1,650</b>	<b>6.57</b>			

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