

**SRL 1 - Contents of Application for Bespoke Environmental Permit for a Materials Recycling Facility – Sherbourne Recycling Limited - Sherbourne Resource Park, 255 London Road, Coventry, CV3 4AR.**

## **Non-Technical Summary**

### **1.0 Introduction**

Sherbourne Recycling Limited (SRL) is a waste management company specialising in the treatment of recyclate arising from household waste collections. The company was established in February 2021 to design, build and operate a state of the art facility on behalf of its Shareholders, made up of eight local authorities based in the West Midlands.

The site is located at the Sherbourne Resource Centre 255 London Road, Coventry, CV5 3AR.

The site is centred at National Grid reference SP 34857 77570 and comprises land north east of London Road, approximately 2km from the centre of Coventry. The residential area of Whitley Village is approximately 0.5km at its closest point, to the south of the site beyond the A4082 road. The Site is approximately 4.4ha in size.

The site will be operational 24hours a day, 7 days a week with the exception of Christmas Day, Boxing Day and Easter Sunday (calendar dates). In normal circumstances waste will be accepted on site between the hours of 07:00 and 17:00 Monday to Friday and 07:00 to 12:00 on Saturdays.

The site shall consist of a MRF designed with the flexibility to adapt as demands of the sector grow and evolve and as such the permission submitted is based on the MRF receiving up to a total of 250,000 tonnes of feedstock per annum. Processing activities on site shall be limited to sorting, separation, screening, baling and storage.

All activities, including processing and storage of waste prior to onward transportation will be undertaken within the building. The entire permitted facility will be on an impermeable surface, forming part of a sealed drainage system.

## 2.0 Waste stream acceptance

The proposed waste streams accepted at the site will be in line with those in the table below.

| <b>Maximum quantities</b>   |  |       |
|---|--|-------|
| <b>The quantity of wastes listed below accepted at the site shall be less than 250,000 tonnes a year.</b> |  |       |
| Waste Code  | Description  |       |
| <b>15</b>   | <b>WASTE PACKING; ABSORBENTS, WIPING CLOTHES, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED</b>                             |       |
| 15 01   | packaging  | State |
| 15 01 01  | paper and cardboard packaging  | Solid |
| 15 01 02  | plastic packaging  | Solid |
| 15 01 03  | wooden packaging   | Solid |
| 15 01 04  | metallic packaging   | Solid |
| 15 01 05  | composite packaging  | Solid |
| 15 01 06  | mixed packaging  | Solid |
| 15 01 07  | glass packaging  | Solid |
| 15 01 09  | textile packaging  | Solid |
| <b>20</b>   | <b>MUNICIPAL WASTES (HOUSEHOLD WASTE AND SIMILAR COMMERCIAL, INDUSTRIAL AND INSTITUTIONAL WASTES) INCLUDING SEPARATELY COLLECTED FRACTIONS</b> |       |
| 20 01   | Separately collected fractions (except 15 01)  | State |
| 20 01 01  | paper and cardboard  | Solid |
| 20 01 02  | glass  | Solid |
| 20 01 08  | biodegradable waste  | Solid |
| 20 01 10  | clothes  | Solid |
| 20 01 11  | textiles   | Solid |
| 20 01 38  | wood other than that mentioned in 20 01 37   | Solid |
| 20 01 39  | plastics   | Solid |
| 20 01 40  | metals   | Solid |
| 20 03   | Other municipal wastes   |       |
| 20 03 01  | mixed municipal waste  | Solid |

### 3.0 Industries Serviced

Sherbourne Recycling Limited focuses on recycling from households.

### 4.0 Hazardous waste

Sherbourne Recycling Limited will not accept any hazardous waste at the facility a strict waste acceptance process will be in place and adhered to.

### 5.0 Sherbourne Resource Park Site

The site is a dedicated built facility located around existing waste management activities of Household Waste Recycling Facilities, Waste to Energy and transfer stations.

#### Image of proposed Sherbourne Resource Park Site



### 6.0 Recycling Process

The MRF is fully automated being constructed specifically for the site to maximise the rate of recycling.

The MRF employs treatment consisting only of manual and mechanical sorting, separation, screening, baling, shredding and compaction of waste into different components for recovery.

The first item of equipment is a conveyor taking waste from the infeed hall into the process hall. The loading hopper includes a drum with teeth that will operate as a bag splitter. The material will be processed through the bag splitter to break open any bags of material, liberate the material and homogenise the waste stream ready for sorting. The machine is fitted with a drum made up of a number of rotating discs, each disc having a number of ‘teeth’ around their circumference. This drum works in conjunction with a ‘comb’ system and together provides the bag opening function.

The material is then transferred into the Process Hall and moved via a system of conveyor belts, through the various items of technology to effectively separate the material into the individual streams. The Reception Hall may also include some element of pre-sorting, should the load require it. This would involve limited manual sorting to remove any visibly out of specification materials and potentially large cardboard and textiles.

This Reception Hall has been sized to allow the unloading of vehicles with the access doors closed to minimise noise, dust and odour impacts off-site. In addition, the hall is large enough to accommodate the storage of 2-3 days of input to buffer the input of material in the event of short-term unplanned plant outages. The overall dimensions of the Reception Hall are 60m x 40m with the access doors along the long dimension of the hall. The Reception Hall is shown as 11.0m in height to the eaves to reduce the risk of impact damage to roof trusses from operating the loading shovel and mobile grabs. The separation of waste will be undertaken by a range of technologies operating to separate the material streams, which will be configured to optimise the efficiency of the process, space available and quality of the outputs.

The following processes will be undertaken:

Aside from reject material, there are four separate categories that can be removed – these materials will differ depending on input material composition.

These materials are stored in open top bins (skips), these materials will leave site loose for end market processing. It is envisaged that the end market will provide exchange skips at time of collection, to minimise any potential disruption to operations.

Film Plastic – loose, clean film materials

This material is transported via suction hoods located above the sorting conveyor and pneumatically transported via ducting to the dedicated motion floor storage bunker.

This material is stored in the same way as the fibre, in that it uses the same centralisation conveyor and “jog” arrangement to ensure the bunker is full. All the film material collected from around the facility is deposited onto the centralisation conveyor via a rotary valve.

Glass fraction is removed from the main stream via the sub 50mm opening in the trommels and transferred over to a dedicated glass clean up line. Our trommels have built in glass breakers - diagonal bars welded inside the trommel drum.

Glass clean up: Screening, optical sorting and air classification systems are utilised to improve the quality and value of the glass products.

There are three outputs from the glass processing section:

- Fines – glass <8mm
- Glass cullet – 8mm – 50mm
- CSP – 8mm – 50mm

These materials are all stored within purpose built concrete bays each adjacent to a roller shutter door to facilitate easy loading of tipper lorries for end markets using the front-end loading shovels on site.

2D/3D Separation: Ballistic separators separate 3D containers from 2D paper and card by utilising circular motion of ballistic panels. Principle used is that 2D stream is pushed upwards as the 3D stream is pushed down providing very efficient separation.

2D Sort: This stage is required to meet the latest export quality standards producing a news, office paper and printed paper product together with a mixed paper product. Technology is likely to include star screens and/or various optical sorting arrays.

There are three outputs from the fibre processing section:

- OCC/OBB - makes part of the over 150mm stream out of the trommel, is further sorted via 350mm OCC screen and via a final manual QC to ensure high purity levels
- News & Pams - main output of the 150 – 350 mm section of the OCC screen. This material is sent through further 4 optical sorters and 4 robot sorting units to ensure its quality requirements are met.
- Mixed Paper - 2D stream from ballistic separators – undergoes further sorting via 6 optical units and 4 robots for final QC purposes

These materials are all stored with motion floor bunkers utilising a centralisation conveyor that ensures all material is deposited at one end to of the respective bunkers. Due to automatic level sensors and the action of the motion floor to “jog” the material to the other end of the bunker, maximum storage is achieved, prior to baling these materials.

Over Band Magnet (OBM): For ferrous removal. The over band magnet exposes the waste flowing along the conveyor to a high magnetic charge. This causes magnetic (ferrous) metals to become magnetised and attracted to the magnet. The magnetic separator transports the ferrous metals onto a separate transport line where the ferrous metal will be deposited into a ferrous metal vertical bunker.

Optical Sorting of 3D containers: An array of optical sorters use optical identification and separation using air jets to separate the various plastic fractions: natural and coloured HDPE and PET fractions, together with a mixed plastic container stream.

Eddy Current Separator (ECS): To remove non-ferrous metals. Material passes over a drum. Within the drum is a rapidly rotating magnet which produces an alternating magnetic field. The alternating magnetic field induces a current within the non-ferrous metal. As the metal does not have a linear shape, the current flow is constrained to 'eddies' and the magnetic field produced does not align with that produced by the separator. As a result, the magnetic fields oppose each other, and the non-ferrous metals are repelled from the belt and leap 'from the conveyor. Material gents then carried over to a vertical storage bunker ready for baling.

These materials are stored in bins located at floor level and as due to the composition and size of the materials, it is not envisaged that they will be baled. The end market that collects to scrap steel will may also be a beneficial end market for these materials.

## **7.0 Wastes received and stored**

The only wastes to be received under the permit will be those listed below –

| Maximum quantities   |  |              |
|--|--|--------------|
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| 20 01 38   | wood other than that mentioned in 20 01 37   | Solid        |
| 20 01 39   | plastics   | Solid        |
| 20 01 40   | metals   | Solid        |
| <b>20 03</b>   | <b>Other municipal wastes</b>  |              |
| 20 03 01   | mixed municipal waste  | Solid        |

- The maximum quantity of waste to be received within 1 week in 6,500 tonnes.
- The maximum quantity of waste to be received within 1 year is 250,000 tonnes.
- The maximum quantity of waste to be stored on the site at any time is 1,650 tonnes

## 8.0 Drainage

The MRF will be fully contained within a building. The building will benefit from an impermeable surface, forming parts of a sealed drainage system.

The exterior road ways and roof will drain to the surface water, however in the event of fire the drainage system can be closed to prevent any runoff from leaving the site.

## 9.0 Emissions

There will be no point source emission from the site other than to the foul sewer.

## **10.0 Fire**

The site will operate to an approved Fire Prevention Plan.