

CASE STUDY

WASTECYCLE

Dry mixed recyclables
Commercial and Industrial Waste MRF



REDWAVE®



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“The MRF has helped to do sorting much more quickly, double the throughput without increasing labor. I particularly like the HMI (human machine interface) and am especially pleased with the backup service and response time. The 3-way split NIR gives particular value for money and performs well. We would recommend this product as it is reliable with a good support structure provided.

Jeremy Thompson, Plant Manager

CUSTOMER

Wastecycle Ltd, based in Nottingham city in the UK is the leading resource management and recycling company in the East Midlands, and is part of the Environmental division of the DCC Group.

Wastecycle process waste and material through their Recycling Facilities with over 90% recycled and recovered, whilst successfully locating and securing markets for over 200,000 tonnes of recycled products.



SITUATION

The client wished to increase production, without increasing staff levels.

The aim was the production of clean News and Pams fraction rather than a mixed product and to separate plastic containers into HDPE, PET and others. Of high importance is also the flexibility to change depending on market trends and material variations.

SOLUTION

One new system with a number of screens to divide the material flow into 2 dimensional and 3 dimensional materials. The paper fraction is transferred to a REDWAVE NIR/C 2400 unit to remove contamination from the News and Pams and a further REDWAVE NIR 1600 3 way in the 3D line unit separates plastic containers by material identification with high levels of efficiency, representing excellent value for money by positively removing 2 products.

SORTING PROCESS

Nottingham-based recycling company Wastecycle has installed two REDWAVE optical sorting machines at its new plant for dry mixed recyclables (DMR) and / or commingled commercial and industrial (C&I) waste.

As well as reducing labour costs and increasing throughput in the new facility, Wastecycle was also looking to achieve better separation of intake materials to help add more value to the separated products.

The recycling company wanted the equipment to be flexible so that it could handle a wide range of waste streams generated from household dry commingled waste as well as C&I and certain skip waste, which had already undergone primary sorting.

With the prepicked materials divided into two dimensional materials (such as paper, card and film), three dimensional materials (such as cans, plastic bottles and glass) and fines, REDWAVE's two near infrared (NIR) sorters pick up the materials from a Ballistic screen.



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The two-dimensional materials are delivered into REDWAVE's 2400mm NIR 2-way sorting unit which then ejects the contamination leaving a News and Pams product. This is then delivered to the baler after passing through a manual quality control station.

The three-dimensional materials pass over a glass breaking screen and then through ferrous and non-ferrous separation and the remaining plastic bottles are sorted with a REDWAVE 1600mm NIR 3-way. Due to REDWAVE machines taking 256 wavelength readings, the accuracy of detection and ejection enables high performance levels in units that do a 3-way split. This provides excellent value-for-money and ensures that the client can remove two different products in one pass, for example, HDPE and PET with only one sorter, which also requires less space and running costs.

These products and the defaulting materials pass through manual quality control and then into storage bunkers ready for batch baling.

The REDWAVE control system also allows the client the flexibility to change speeds based on different product. The sorters can also be monitored remotely to allow recalibration.

The fines are conveyed to the client's existing trommel screen with an air system allowing the glass to be cleaned by removing small paper and plastics.

TECHNICAL DATA

TYPE OF MACHINE	Redwave 2400 NIR/C Redwave 1600 NIR
INPUT MATERIAL	Contaminated News and Pams Mixed containers
CAPACITY	8 t/hr 3 t/hr
SENSOR SYSTEM	NIR (Near Infrared) with colour sensor for paper line NIR (Near Infrared)
WORKING WIDTH	2400 mm 1600 mm

