Separation (cont.)

managed correctly and coupled to a good collection system, this type of separation can be a success. The Bluewater Recycling Association, in Grand Bend, Ontario, showcases what a facility of this type can achieve.

Technologically extensive separation facilities are truly fascinating. The machinery used is state-of-the-art in the recycling community. Most of the equipment was designed to be highly efficient at a specific task. The example we are about to explore is similar to a recycling operation found in Rhode Island.

Recyclables are source separated into two groups: paper and mixed materials. Both are collected at the curbside, then taken to the processing plant. Each group is tipped in distinct areas of the plant. The mixed materials (glass, plastics, and metals) are fed into a receiving pit. Computer sensors regulate the flow from the pit to an incline conveyor. The conveyor rises approximately 8 m enabling the recyclables to be gravity sorted. Workers at an inspection station, remove any non-recyclable items onto a reject conveyor. Materials left on the incline conveyor then pass under an *electromagnetic* belt. Ferrous metals are deposited in a chute then dropped onto a conveyor. The metals are sent to a shredder for processing to meet end market specifications. The rest of the commingled items ignore the magnet and fall onto a screening machine. Here, fine materials are shaken out as the plastic, aluminium and glass are divided into two distinct but equal streams.

Chain curtains move over the recyclables taking away the light products: plastic and aluminium. The glass is too heavy to be affected by the curtains; it travels to another screening machine. Broken glass and other small articles fall from the screen onto a recovery conveyor. This material is taken away for further processing. The rest passes over the screen and travels to the main glass line. Workers first remove the green glass into hoppers then do the same for the amber portion. By a process of elimination, only clear glass is left. Each colour is then sent along a separate conveyor to be crushed, screened once more and placed into individual concrete bunkers.

The light material that was removed by the chains, falls into a sorting machine. A bar screen stops larger plastic items from entering this equipment. Instead it moves to yet another conveyor. Plant employees separate each plastic based on resin type. *High Density Polyethylene* (H.D.P.E.) is dropped into a hopper then sent to be granulated. *Polyethylene Terephalate* (P.E.T.) is perforated and baled into 365 kg bundles. In the mean time, the light recyclables exit the sorting apparatus and are sent to be divided using opposing magnetic fields. Aluminium is forced by this field onto a different conveyor belt destined for a flattener. The compressed metal is blown by air directly into a trailer, ready for shipping.

After unloading the mixed products we have just