

NURRC—IMPLEMENTING PROCESS WATER CONSERVATION AND FULL REUSE

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Abstract. In 2007, Coca Cola Enterprises formed an alliance with United Resource Recovery Company to become the beverage producer's supplier of food grade plastic for its future bottling needs worldwide. The venture, named NURRC, saw its initial investment realized in a new 50 million pound per year plastics recycling center at URRC's Spartanburg, SC facility. In 2010, the facility will be capable of converting 100 million pounds of recycled bottles to raw material for future bottles.

Through a series of automated sorting, grinding and chemical treatment steps, NURRC's process can convert recycled plastic bottles and jars into food-grade PET plastic for Coca Cola's bottle production. The process saves much of the resources and cost of producing raw plastic, and has low energy requirements.

Coca Cola has a worldwide initiative to dramatically reduce water consumption in its production plants: "Reduce, Recycle, Replenish." This applies to bottle production facilities as well.

Developing approaches to meet these objectives at a food products facility must take care to preserve the inherent objectives associated with food products, which are Product Quality, Product Consistency, and Public Health and Safety. Water conservation and water reuse must not compromise quality of the finished product.

Currently, NURRC is implementing a two-year plan that will ultimately maintain net water use from the City of Spartanburg at the level prior to the expansion, while increasing plant production capacity by over 10 times. Plant process water requirements will increase from 60 gpm to 180 gpm. The use of high-efficiency equipment provides 70 percent reduction in water use. The additional supply for the expanded plant will be through a closed loop recycle system. Precipitation, biological membrane reactors and reverse osmosis will allow full recycle of water. The conversion of organic materials will also reduce wastewater loads to the Spartanburg Sanitary Sewer District by more than 50 percent of that before the major expansion.