EPA Sustainable Materials Management Webinar

Residential Recycling Top Contaminates.

Bob Cappadona
Vice President
Casella
December 17th, 2015
**Casella Company Overview:**

- Founded in 1975 with one truck
- 1,900 employees serving over 170,000 customers
- Traded on NASDAQ as CWST
- Over $500M in annual revenue
- Operating in ME, MA, NH, NY, PA, and VT
- Vertically integrated collection, transfer, disposal and recycling operations
- Recovering over 600,000 tons of recycling and over 400,000 tons of organics for beneficial use each year
- Strategy to help our customers reduce waste utilizing our expertise, services, and assets
Casella Footprint

- Hauling Facilities
- Recycling Facilities
- Organics Facilities
- Landfills
- Landfill Gas-to-Energy
- Transfer Stations

Our Customers
The Casella Recycling Arm

- 12 Recycling Operations
- 6 Single Stream Recycling Operations
- Process and markets over 600,000 tons/yr
- Boston, MA MRF – 7th largest in the U.S. (210,000 tons processed in 2015)
The Evolution of The Recycling Stream – Facts

Source Separated Recycling

- Sorted at the curb
- Very little contamination
- Only a baler needed
- 90% of the total stream = newspaper and cardboard
- But how do we capture more material and keep trucks off the street??
The Evolution of The Recycling Stream – Facts

Dual Stream Recycling

• Technology of processing equipment has evolved to align with ease of hauling

• Little bit more contamination but average still below 5% at the MRF

• MSW stream still contains 50% recycling material – how do we capture more??
The Evolution of The Recycling Stream – Facts

**Single Stream Recycling**

- Convenience for the consumer & larger container
- Evolving product mix
- MRF technology advancement
- Automated pickup
- Un-intended consequences
- Average residual rate at U.S MRF’s = 15%
MRF Contamination - Film

- Wraps around separation equipment (Newspaper and OCC screens)
- Creates ineffectiveness of screens
- Must clean screens once per shift
- Safety issue during maintenance
MRF Contamination – Scrap Metal

- Causes damage to processing equipment
- Small scrap metal contaminates the finished glass stream for our end users
- Safety issue (propane, etc)
MRF Contamination - Textiles

- “Jams” Screens.

- “Blinds” Optical Sorters and Magnets

- Causes considerable downtime

- Downtime = increased operational costs
MRF Contamination – “Wrapping Items”

- Considerable damage to screens
- Lengthy maintenance items
- Safety issue
MRF Contamination – Food Waste

- Odors
- Usually a “full load rejection”
MRF Contamination – Weather

- Overall adjustments needed to process
- Ice damages equipment
- Impact to quality
## Example: Single Stream Material Mix

<table>
<thead>
<tr>
<th>Material</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>ONP#8</td>
<td>33.0%</td>
</tr>
<tr>
<td>OCC</td>
<td>16.00%</td>
</tr>
<tr>
<td>Mixed Paper</td>
<td>19.0%</td>
</tr>
<tr>
<td>Glass</td>
<td>23.00%</td>
</tr>
<tr>
<td>PET</td>
<td>2.70%</td>
</tr>
<tr>
<td>HDPE-Natural</td>
<td>0.60%</td>
</tr>
<tr>
<td>HDPE-Colored</td>
<td>0.50%</td>
</tr>
<tr>
<td>Plastic-Mix</td>
<td>0.40%</td>
</tr>
<tr>
<td>Plastic-Bulky</td>
<td>0.70%</td>
</tr>
<tr>
<td>LDPE-B</td>
<td>0.40%</td>
</tr>
<tr>
<td>Aluminum</td>
<td>0.50%</td>
</tr>
<tr>
<td>Aluminum-Foil</td>
<td>0.00%</td>
</tr>
<tr>
<td>Steel/Tin</td>
<td>1.50%</td>
</tr>
<tr>
<td>Scrap Metal</td>
<td>0.70%</td>
</tr>
<tr>
<td>Residue</td>
<td>15.00%</td>
</tr>
<tr>
<td>Totals</td>
<td>100.0%</td>
</tr>
</tbody>
</table>
We Must Continue to Educate
We are in it together !!

Teamwork
EPA Sustainable Materials Management Webinar

Questions?

Casella Waste Systems

Bob Cappadona
Vice President
Casella
December 17th, 2015