Non-routine Wastes – Construction Projects

Plant Expansions at Grifols, Clayton, NC

Samuel S. Vedder, Sr. ESS, Environmental
• Pharmaceutical Manufacturing in Clayton, NC
• ~1600 employees, ~250 acres
• Manufactures products from human plasma
• Participant in NCDENR's Environmental Stewardship Initiative (Rising Steward level)
• ISO 14001 Equivalent Program
What is plasma?

8% White blood cells and platelets

Plasma 50%

Red blood cells 42%

... is the liquid part of blood which contains a mixture of water, mineral salts, proteins and nutrients.
3 Significant Expansions in 2013-2015

Plasma Logistics Center
New Warehouse
Multi-Purpose Facility
Plasma Logistics Center
Fully automated high-rise -30°C freezer and 2-story processing facility for plasma receipt, shipping, and classification.

83,560 square feet
5,100 pallet spaces
Capacity to store 3 million liters of human plasma
New Raw Material Warehouse
for additional space to consolidate offsite storage facilities and support the continued growth of the Clayton site.

64,000 square feet
3,900 pallet spaces
First LEED Certified building in Johnston County, North Carolina
Multi-Purpose Facility
For processing and purifying immune globulins from survivors of rare diseases.

8,000 square feet
Unique construction building within a building
Enclosed and isolated from the rest of the site
Critical Steps in Construction Waste Management

- Segregate
- Track & Report
- Train
- Enforce (if necessary)
Training of Contractors

• Required for all contractors every six months
• Especially important to have engineers and construction managers on-board
• Monitoring and feedback
Segregation of Construction Waste

Metal
Wood
Cardboard

Concrete
Asphalt
Trash
# Monthly Project Recycling Report

## Project Details:
- **Project:** GRIFOLS
- **Est. End Date:** 2/1/2016
- **Address:** 8368 US 1
  - **Project MSA/CMA:** CLAYTON
  - **Building Type:** COMM
  - **LEED® Certification Type:** Silver

## Material Totals:

<table>
<thead>
<tr>
<th>Material</th>
<th>Target %</th>
<th>Actual %</th>
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<tbody>
<tr>
<td>Cardboard</td>
<td>NaN%</td>
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<tr>
<td>Concrete</td>
<td>NaN%</td>
<td>100.0%</td>
</tr>
<tr>
<td>Wood</td>
<td>NaN%</td>
<td>100.0%</td>
</tr>
<tr>
<td>Residual</td>
<td>NaN%</td>
<td>0.0%</td>
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<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>82.3%</strong></td>
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</tbody>
</table>

## Target Diversion:
- **50.0%**

## Actual Diversion:
- **82.3%**

## Ticket Details:
- **Ticket Date From:** (All)
- **Ticket Date To:** (All)

<table>
<thead>
<tr>
<th>Ticket Month</th>
<th>Ticket Date</th>
<th>Ticket</th>
<th>Destination Facility</th>
<th>Hauler</th>
<th>Material</th>
<th>UOM</th>
<th>Total Qty</th>
<th>Diverted Qty</th>
<th>Act %</th>
<th>Residual Qty</th>
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Please consider the environment before printing.
Waste Diverted from Landfill

- Dark color - Diverted
- Light color - Landfilled

IG - 2013: 16%
IG - 2014: 17%
IG - 2015: 27%
GBI - 2013: 84%
GBI - 2014: 83%
GBI - 2015: 73%
GTI - 2013: 66%
GTI - 2014: 68%
GTI - 2015: 81%
GPO - 2013: 96%
GPO - 2014: 95%
GPO - 2015: 95%
Cafeteria Waste Composting

- Food prep waste only – no post consumer
- Monday through Friday
- Average 92 pounds per day
- Sent to anaerobic digester

- Also save all food cans for metal recycling

Next Steps
- Converting to compostable dinnerware
- Collecting post consumer waste
Contact Information

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