Eco Solution Overview

- Established in 2013
- Headquartered in Pittsburgh, PA
- Over 50 Years of Coal Experience
- #1 FCA Turn-key Program Provider for the Coal and Steel Industry
ESD Storage / Blending Facility

Location: Pittsburgh, PA

Dedicated FCA Outbound Product Storage Capacity
- 1,000,000+ Gallons
- 5 Tanks

Operating Hours
- 24 hours / 7 days a week

Railroads Utilized
- Norfolk Southern and CSX

Barge Service Utilized
- Ingram Barge
Location: Evansville, IN

Dedicated FCA Outbound Product Storage Capacity

- 500,000 Gallons

Rail Car Storage Capacity

- 50+ Cars or 1,000,000+ Gallons

Operating Hours

- 24 hours / 7 days a week

Railroads Utilized

- N/S and CSX
Problems from Frozen Coal

- Carryback = Inefficient Transportation
- Demurrage Costs
- Additional Labor to Unload
- Added Cost of Thaw Shed Fuel / Operation
- Reduction in Coal Production / Tons Shipped from the Mine
ESD FCA Program Alternatives
We Treat Moisture Not Coal

- Clean Coal Surface Moisture 7-12%
- Precipitation During Transit / Unloading
- Rail Car Precipitation Prior to Loading of Coal (Snow/Ice)
- Product Type / Selection
- Chemical Application
Pre-Winter Services

- Location Visit / Assessment
- New Application Systems Design
- Install / Upgrade Equipment
- Sample / Test for Product Compatibility
- Clean Tanks As Necessary
- Formulate Application Rates for Shipments
Pre-Loading Services (In-Season)

- Confirm Schedule with the Railroad, the Producer, and the Monitor
- Track Train Itineraries
- Inspect Application Equipment
- Confirm Chemical Inventory on Location
- Utilize Coal Cast Forecasting Service
- Verify Treatment Rate
Wireless Inventory Management (WIM)

Tank Status:
- Inventory Time: 4/7/2011 10:45:03 PM
- Primary Location Contact: Not Assigned
- Alarm Status: OK
- Comm Status: No Recent Update
- Maintenance Status: Low Battery Alarm
- Sensor Status: OK
- Level: 115.4 in
- Inventory: 7347.2 gal
- Tank Type: Standard Vertical Cylindrical Tank
- Tank Height: 157.0 in
- Tank Number: 1
- Region: 

Tank Level:

Signal Strength:

Battery Level:

Tank History:
- Date Range:
  - From: 2/7/2011
  - To: 3/31/2011
  - Submit Date Range

Volume (gal):

- Product
- Low Alarm Level
- Critical Low Alarm Level

Time Reported
WIM Benefits for ESD/Customer

- Automatic Order Generation Option
- Real-time Product Inventory Access
- Level Alarm Options to Eliminate Spills / Running Out of Product
- Third Party Verification of Product Use
- Increase Delivery Efficiencies = Reduced Costs for All Involved

<table>
<thead>
<tr>
<th>Status</th>
<th>Inventory Time</th>
<th>Level</th>
<th>Inventory</th>
<th>%</th>
<th>Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>OK</td>
<td>3/4/2011 8:15:41 PM (F)</td>
<td>86.3 in</td>
<td>5682.2 gal</td>
<td>94.70%</td>
<td>66.00 °F</td>
</tr>
<tr>
<td>FD</td>
<td>3/4/2011 12:15:41 PM (F)</td>
<td>86.3 in</td>
<td>5682.2 gal</td>
<td>94.70%</td>
<td>66.00 °F</td>
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<tr>
<td>LA,FD</td>
<td>3/4/2011 4:15:42 AM (F)</td>
<td>29.7 in</td>
<td>1581.1 gal</td>
<td>26.35%</td>
<td>66.00 °F</td>
</tr>
<tr>
<td>LA</td>
<td>3/3/2011 8:15:43 PM (Th)</td>
<td>29.7 in</td>
<td>1577.4 gal</td>
<td>26.29%</td>
<td>66.00 °F</td>
</tr>
<tr>
<td>LA</td>
<td>3/3/2011 12:15:44 PM (Th)</td>
<td>29.7 in</td>
<td>1581.1 gal</td>
<td>26.35%</td>
<td>66.00 °F</td>
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</tr>
<tr>
<td>LA</td>
<td>3/2/2011 8:15:43 PM (W)</td>
<td>29.7 in</td>
<td>1577.4 gal</td>
<td>26.29%</td>
<td>66.00 °F</td>
</tr>
<tr>
<td>OK</td>
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<td>2717.8 gal</td>
<td>45.30%</td>
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<tr>
<td>OK</td>
<td>3/2/2011 4:15:46 AM (W)</td>
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<td>5943.3 gal</td>
<td>99.06%</td>
<td>66.00 °F</td>
</tr>
<tr>
<td>OK</td>
<td>3/1/2011 8:15:46 PM (Tu)</td>
<td>93.1 in</td>
<td>5946.3 gal</td>
<td>99.10%</td>
<td>66.00 °F</td>
</tr>
<tr>
<td>OK</td>
<td>3/1/2011 12:15:46 PM (Tu)</td>
<td>93.0 in</td>
<td>5943.3 gal</td>
<td>99.06%</td>
<td>66.00 °F</td>
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<tr>
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<td>93.1 in</td>
<td>5947.7 gal</td>
<td>99.13%</td>
<td>66.00 °F</td>
</tr>
</tbody>
</table>
Coal Cast’s Algorithm generates custom application rates for each loading between the Producer and the Customer.

- 7-day forecast to factor any transit or unloading delays.
- Verifies Low Temperature, Chance and Amount of Precipitation.
- System Operates in real-time 24/7/365.
- Customized login for Customer viewing.
Loading Services

• Inspect each Rail Car; Documenting any Snow, Ice, or Carryback

• Set Equipment to the Requested Application Rate

• Document Application, Usage, etc. in Report

• Reconfirm Application Rates every 10 Cars
Post-Loading Services

- PM Equipment
- Document Final Inventory and Chemical Applied
- Email / Fax Reports
- Order Additional Product as Necessary
- Report Maintenance or Service Issues
- Customer Visits to Audit FCA / SRA Performance
FCA-100 (CaCl Based Product)

- Best Value in the Industry
- Dual FCA/SRA Performance
- Treated More Rail Cars than Any Other FCA/SRA Agent
- Freeze Point Below -38°F
- Not Corrosive to Aluminum or Steel Cars
FCA-207 (CaCl₂ / Glycol Blended Product)

- Superior Ice Melting Properties
- #1 Performance Product when dealing with Re-Freeze from Precipitation
- Increased Unloading Efficiencies
- Eliminates Thaw Shed Use

- Dual Performing FCA/SRA Product
- Cost Effective Alternative to Glycol-based Agents
- Non-Corrosive for all Rail Cars
- Guaranteed Performance
- Can be Applied Hot (Shown Above)
FCA-307 (Glycerin Product)

- GREEN Product
- Non-Corrosive on all Rail Cars
- Excellent Shear Strength Performance
- Cost Effective Alternative to Glycol Products
- Side Release Capabilities
- 0% Methanol Content
FCA-600 (Glycol Product)

- Non-Corrosive on all Rail Cars
- Excellent Shear Strength Performance
- Cost Effective Alternative to Glycerin Products
- Side Release Capabilities
- Frozen Coal Thaw Capabilities
FCA-800 (Hot Acetate Thawing Product)

Before Application

Product Applied at 200° F

After Application
What’s the next step?

- Have you experienced **dumping problems in the past** during winter months?
- Does your **O&M budget increase** in the winter?
- **How much fuel** is consumed to operate your **Thaw Shed**?
- Do you **know how much is spent** on FCA/SRA products?