# PI System Rocks at

RockTenn

Presented by **Beth Murray:** Enterprise PI Administrator

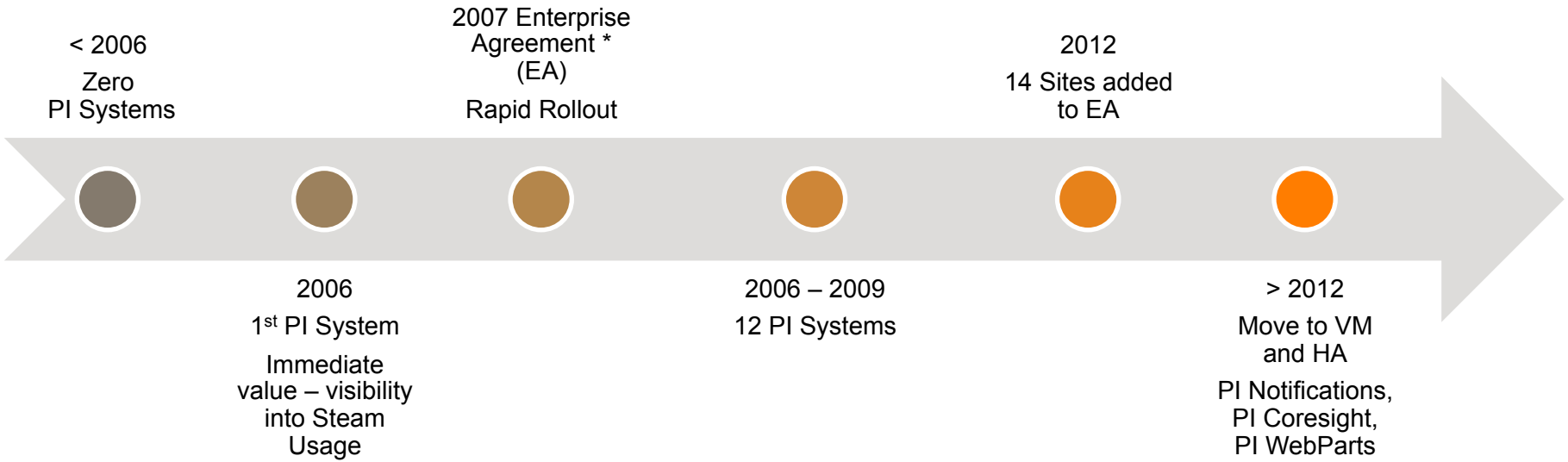
# Agenda

- About RockTenn
- PI System infrastructure at RockTenn
  - From Zero to Enterprise
- Why PI System Power User Group
- PI System Power User Group Meeting
  - How PI System Rocks at RockTenn
  - PI Coresight at RockTenn
- Conclusions

# About RockTenn

- One of North America's leading producers of corrugated and consumer packaging, recycling solutions, and merchandising displays
- Annual net sales of ~$10 billion
- Founded in 1936 and operates facilities throughout the United States, Canada, Mexico, Argentina, Chile and China
- 24 Paper Mills, 183 Manufacturing Facilities, 37 Recycling Facilities
- Headquartered in Norcross, Georgia

# From Zero to Enterprise




*EA Services: Field Services, Enterprise Project Management, Center of Excellence, NOC Monitoring, Training, Software

# Why a PI System Power User Group?

- As the PI System was deployed at each Mill 2 PI Power Users were selected
  - Interested and Excited
  - Wanted to use the PI System to do their jobs
- Needed to bring the Power Users together
  - Interesting use cases were emerging from the mills
  - Corporate provided ideas but the Mills had more and were more interested in developing their own
  - Train the trainers
- PI System Power User Group
  - Builds cross Mill relationships
  - More idea sharing
  - Friendly competition promotes learning and initiative

# PI System Power Users Meeting Nov'11

- Goals
  - Status of RockTenn company PI System initiatives
  - Introduce Smurfit Stone
    - Now part of the RockTenn Enterprise Agreement
  - OSIsoft Demos of AF Data Validation and PI Coresight
  - Share operating solutions using the PI System with other sites
    - How PI System Rocks at RockTenn
- Results
  - 17 attendees
  - Fernandina Mill tour
  - Cross Mill idea and solution exchange
  - Free OSIsoft logo stuff!

# PI Baking Contest - How PI System Rocks at RockTenn

- 11 Entries
- Showcased “Favorite PI ProcessBook Displays”

| Application | Developer |
|---|---|
| Grade Costing Calc Sheet | Don Simonson |
| Equipment Run Time | Nate Larson |
| 3-D Profiling | Matt Corcoran |
| Profile Data Research | John Brooke |
| Utility Bill Check | Steve Van Doren |
| Process Training w/PB | St. Paul |
| Interface Failover PB | Steve Van Doren |
| Slime Count | Kerri Kalmorgan |
| Coating Batch | John Brooke |
| Process Data in Excel | Tim Anderson |
| Effluent Monitoring | Travis Ritchens |

# Picking the winner

- Rated based on:
  - Value Add
  - Ease of Deployment
  - “Leverage-ability”
- Judging:
  - RockTenn PI System Power Users
  - RockTenn Enterprise PI System Administrators
  - RockTenn IT Manager
  - OSIsoft EA Program Manager
  - OSIsoft CoE
  - OSIsoft Field Sales

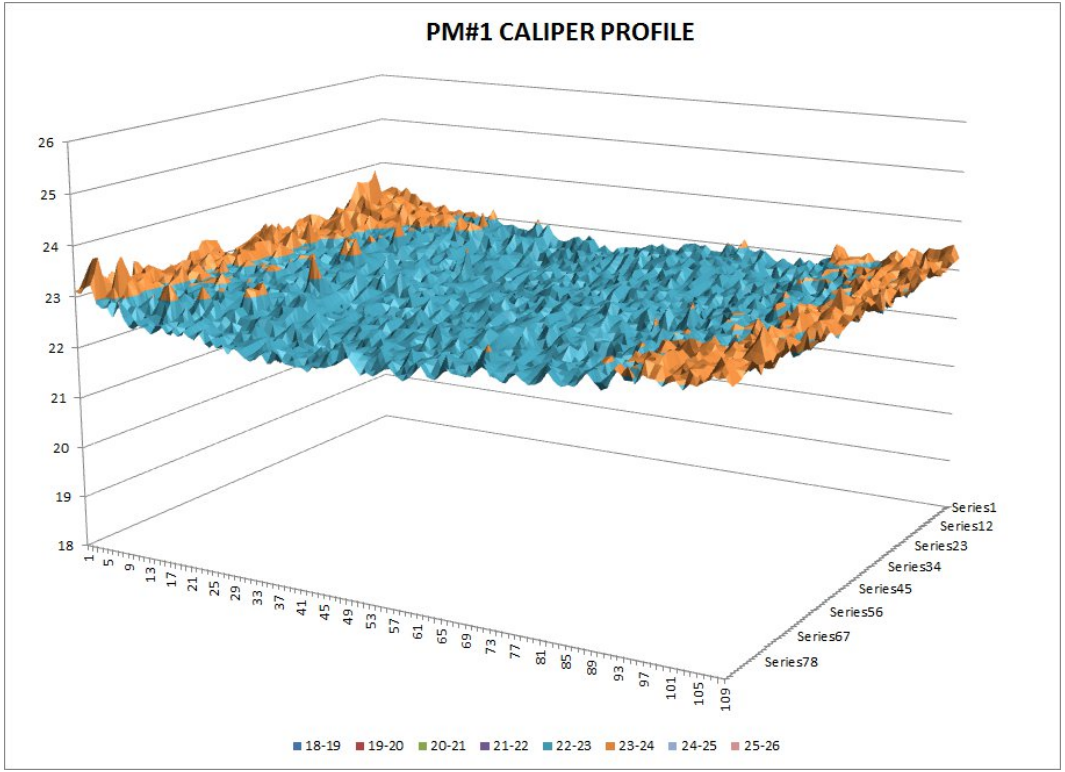
| | | Rating 1-5, 5 = Best | | | |
|---|---|---|---|---|---|
| Application | Developer | Value | Ease to Deploy | Leverage -able | Total |
| Grade Costing Calc Sheet | Don Simonson | 4.50 | 4.50 | 4.50 | 13.50 |
| Equipment Run Time | Nate Larson | 4.58 | 3.92 | 4.58 | 13.08 |
| 3-D Profiling | Matt Corcoran | 4.42 | 4.17 | 4.42 | 13.00 |
| Profile Data Research | John Brooke | 4.00 | 3.91 | 4.18 | 12.09 |
| Utility Bill Check | Steve VanDoren | 3.64 | 3.73 | 3.45 | 10.82 |
| Process Training w/PB | St. Paul | 4.33 | 3.25 | 3.17 | 10.75 |
| Interface Failover PB | Steve Van Doren | 3.45 | 3.64 | 3.64 | 10.73 |
| Slime Count | Kerri Kalmorgan | 3.91 | 3.25 | 2.91 | 10.07 |
| Coating Batch | John Brooke | 4.17 | 3.00 | 2.83 | 10.00 |
| Process Data in Excel | Tim Anderson | 3.33 | 3.33 | 3.08 | 9.75 |
| Effluent Monitoring | Travis Ritchens | 4.10 | 2.40 | 2.10 | 8.60 |

# What did we get?

# 3-D Profiling

- Challenge
  - Need better visualization tool for profile data
- Solution
  - 3-D chart in Excel showing caliper, basis weight and moisture
  - VBA code to update chart every minute
- Result
  - More visually intuitive than PI Profile View
  - Operator real time display

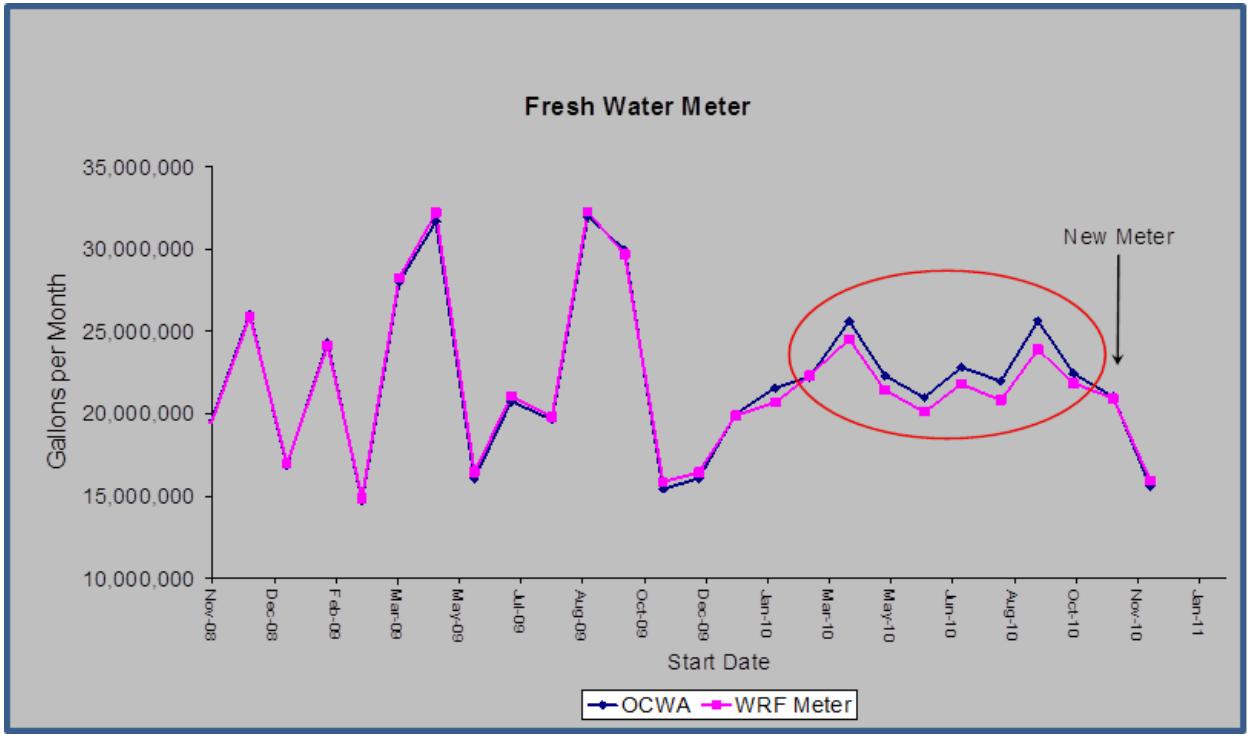
# 3-D Profiling



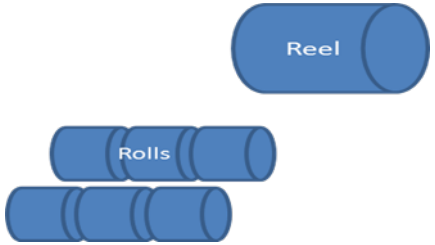

# Monitoring Utility Bills

- Challenge
  - Validate actual water usage against water utility bill
  - Validate Effluent meter to county treatment plant
- Solution
  - Real time water usage stored in PI System and analyzed in Excel using PI DataLink
- Result
  - Found a faulty water meter installed by Utility company
  - Overcharging for Effluent treatment due to a build up on the Effluent meter
  - ~$75,000 savings in utility bills

# Utility Bill Check



# PI System Reel Report




- Challenge
  - Trimming rolls produces slab waste which equals lost revenue from paper that could have been sold
- Solution
  - Six Sigma project
  - PI DataLink Excel sheet to match reels to rolls and calculate difference
  - Slab calculator helps operators calculate what they trim
  - Operators assign reason codes and comments
- Result
  - Operator accountability and visibility reduced unnecessary waste
  - ~$150,000 annual savings for one site
  - Plan to roll out to other sites

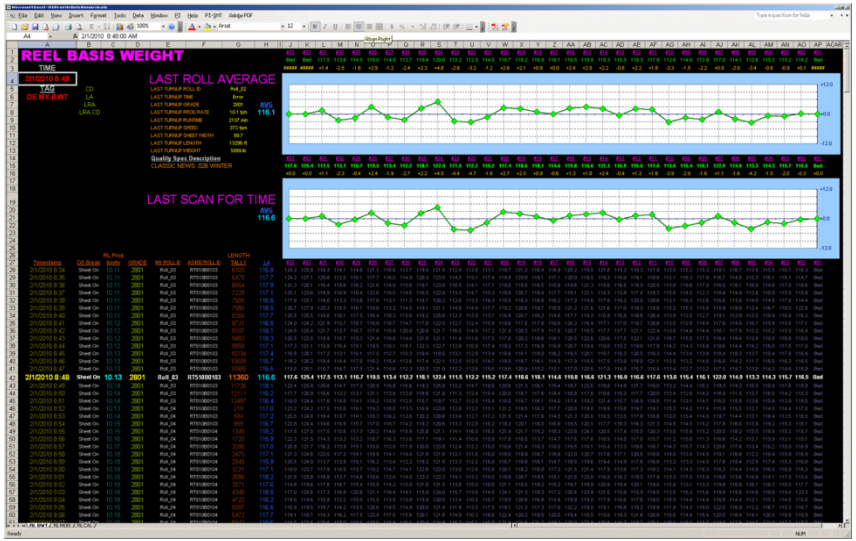
# PI System Reel Report

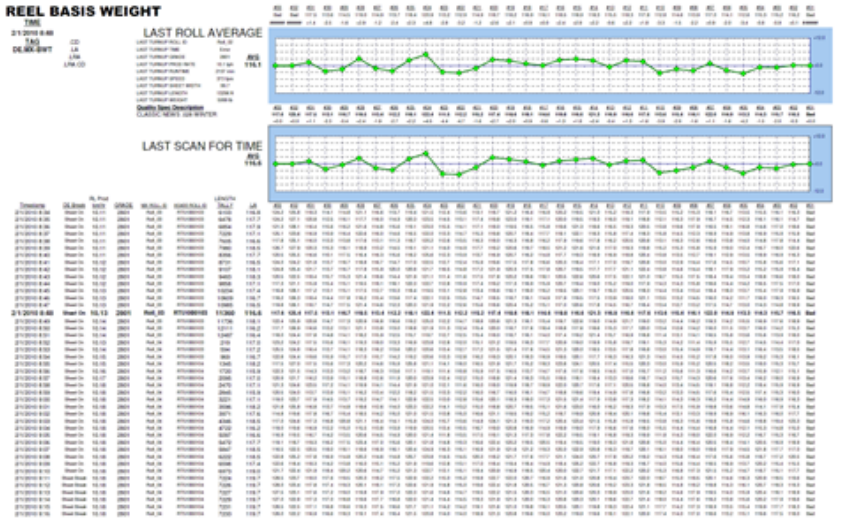
| | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| 1 | PIServer | NT327002 | 3270 | | | | Ready |
| 2 | PaperMachine | PM1 | | | | | |
| 3 | StartTime | 3/12/2012 7:00 | Get Data | | | | |
| 4 | EndTime | 3/19/2012 7:00 | | | | | |
| 6 | | Loss (Feet) | 161,099 | | | 4.45% | % Total Loss |
| 7 | Total | AS400 Lineal Feet | 3,457,307 | | | 2.07% | % Unaccounted for Loss |
| 8 | Total | PI Reel Lineal Feet | 3,618,406 | 193 | 86,194 | 74,905 | Unaccounted for Loss |
| 9 | | | | | | | |
| 10 | ID | Start Time | Reel # | Min | Slab | Cause | Comments |
| 11 | | 13-Mar-12 16:35 | RT512C1304 | 14.9 | 7,576 | Grade Change | .020unc - .018 mill |
| 12 | | 13-Mar-12 21:07 | RT512C1312 | 4.4 | 2,309 | Other | cut 1.5" clayoff / cut 5" off e roll c.s. |
| 13 | | 13-Mar-12 21:44 | RT512C1313 | 5.4 | 2,832 | Coating AK | clayoff c.s. |
| 14 | | 14-Mar-12 00:14 | RT512C1317 | 1.8 | 952 | Hole | holes |
| 15 | | 14-Mar-12 02:02 | RT512C1320 | 0.0 | 0 | Coating AK | set 1 b.r. clayoff c.s. |
| 16 | | 14-Mar-12 02:52 | RT512C1321 | 7.0 | 3,683 | Coating AK | clayoff c.s. |
| 17 | | 14-Mar-12 03:45 | RT512C1322 | 7.3 | 3,843 | Other | cleaning backing roll and scraping oven roll |
| 18 | | 14-Mar-12 04:28 | RT512C1323 | 7.5 | 3,931 | Caliper Change | .018-.016 |
| 19 | | 14-Mar-12 05:03 | RT512C1324 | 0.0 | 0 | Caliper Change | no set |

# Profile Research

- Challenge
  - Correlating profile data to customer complaints
- Solution
  - Use Excel to view any quality profile for any given time of any reel produced
- Result
  - Faster customer complaint analysis

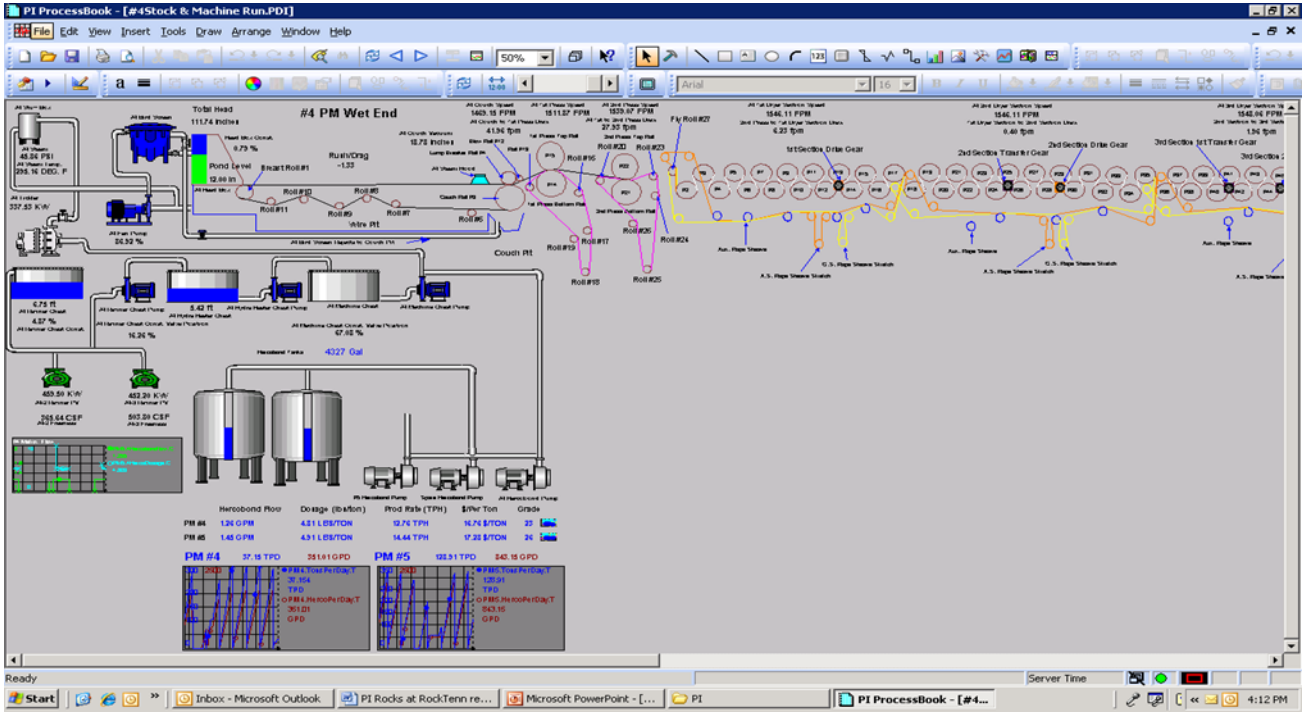
# Profile Research



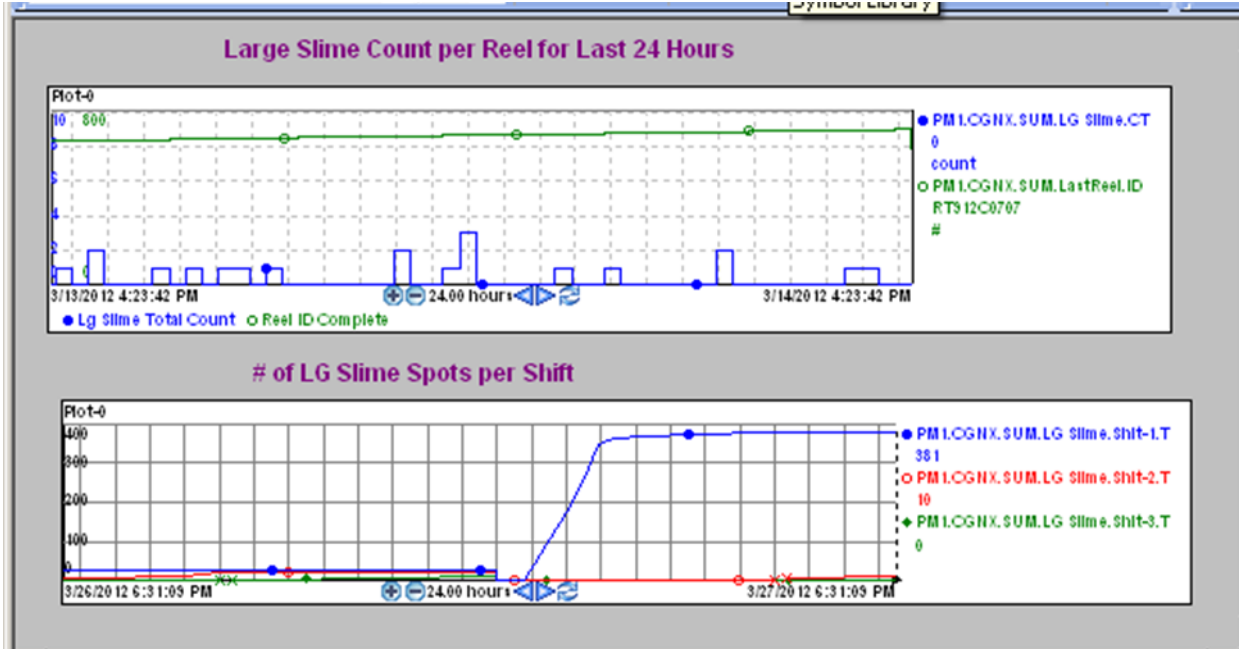




**Prints nicely on Legal Size Paper**

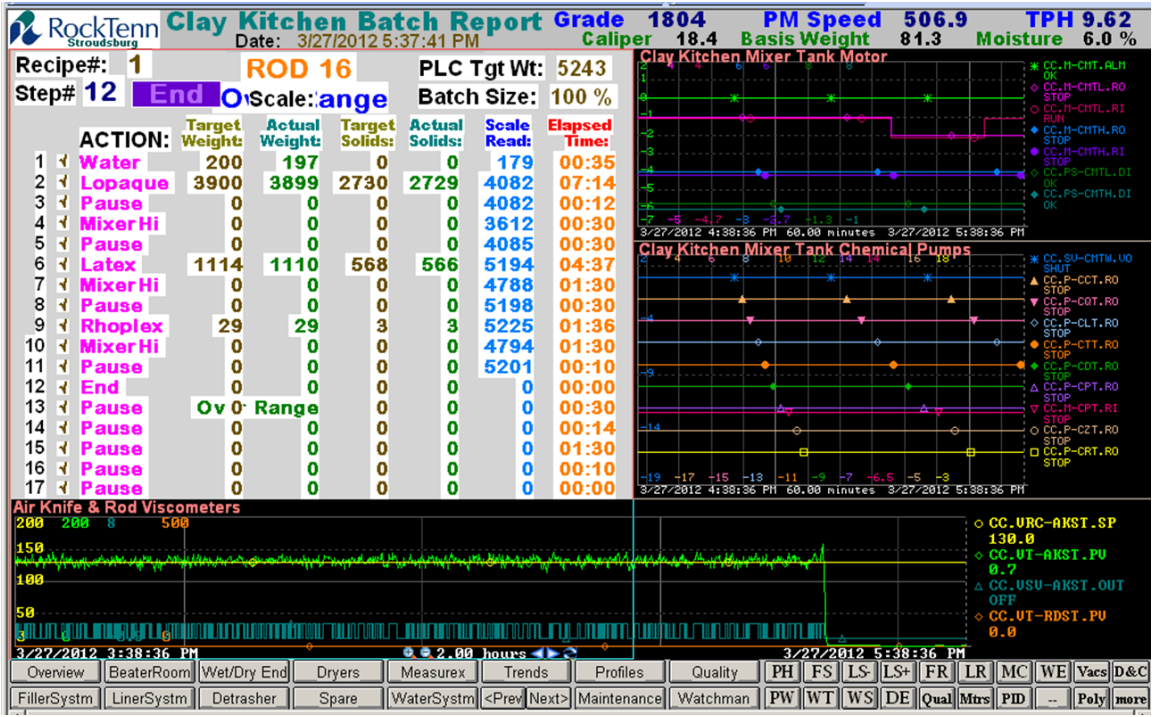
# Favorite PI ProcessBook Displays – Documenting the Process



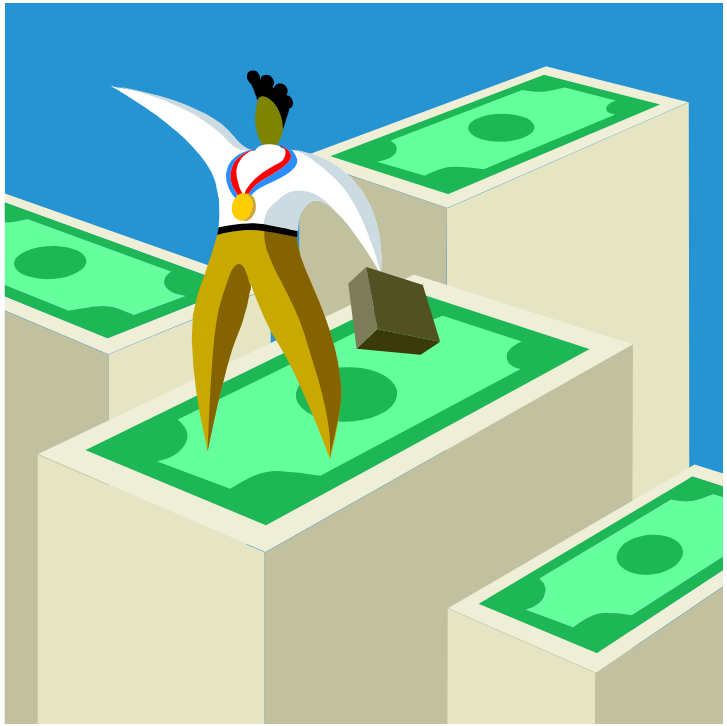
# Favorite PI ProcessBook Displays -
## Counting Defects with PI ProcessBook and Alerting



# Favorite PI ProcessBook Displays – Coating Kitchen



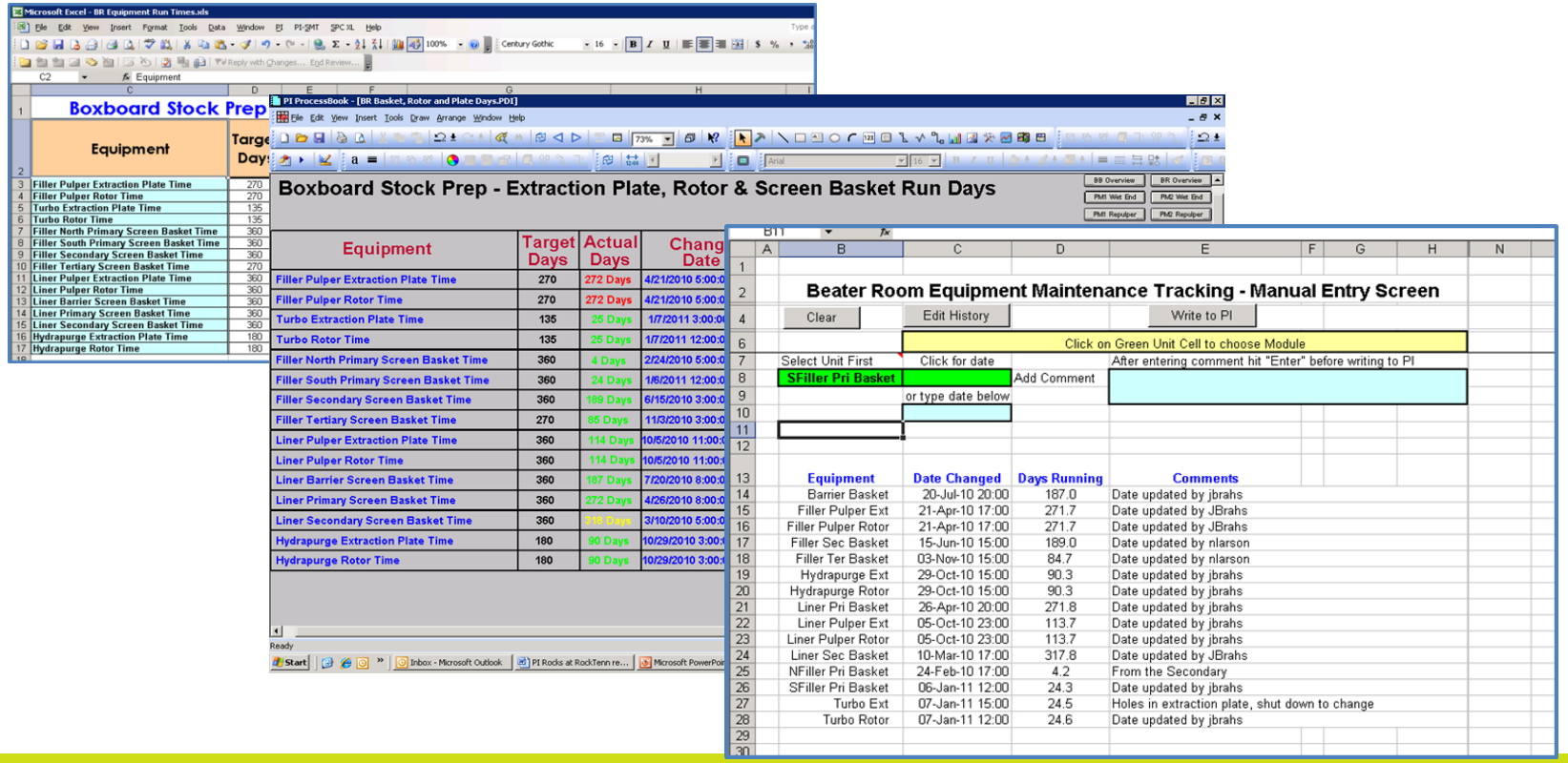
# And the Winner is…



# Tracking Equipment Run Times

- Challenge
  - Suspect “over-maintenance” occurring
- Solution
  - Manually enter run time into PI System using Excel and VBA
  - PE’s calculate run hours since last maintenance
  - E-mail notifications when maintenance is due
- Result
  - Maintenance every 6 weeks instead of 4

# Tracking Equipment Run Time



Boxboard Stock Prep

| Equipment | Target Days |
|---|---|
| Filler Pulper Extraction Plate Time | 270 |
| Filler Pulper Rotor Time | 270 |
| Turbo Extraction Plate Time | 135 |
| Turbo Rotor Time | 135 |
| Filler North Primary Screen Basket Time | 360 |
| Filler South Primary Screen Basket Time | 360 |
| Filler Secondary Screen Basket Time | 360 |
| Filler Tertiary Screen Basket Time | 270 |
| Liner Pulper Extraction Plate Time | 360 |
| Liner Pulper Rotor Time | 360 |
| Liner Barrier Screen Basket Time | 360 |
| Liner Primary Screen Basket Time | 360 |
| Liner Secondary Screen Basket Time | 360 |
| Hydrapurge Extraction Plate Time | 180 |
| Hydrapurge Rotor Time | 180 |

Boxboard Stock Prep - Extraction Plate, Rotor & Screen Basket Run Days

| Equipment | Target Days | Actual Days | Change Date |
|---|---|---|---|
| Filler Pulper Extraction Plate Time | 270 | 272 Days | 4/21/2010 5:00:0 |
| Filler Pulper Rotor Time | 270 | 272 Days | 4/21/2010 5:00:0 |
| Turbo Extraction Plate Time | 135 | 25 Days | 1/7/2011 3:00:0 |
| Turbo Rotor Time | 135 | 25 Days | 1/7/2011 12:00:0 |
| Filler North Primary Screen Basket Time | 360 | 4 Days | 2/24/2010 5:00:0 |
| Filler South Primary Screen Basket Time | 360 | 24 Days | 1/6/2011 12:00:0 |
| Filler Secondary Screen Basket Time | 360 | 189 Days | 6/15/2010 3:00:0 |
| Filler Tertiary Screen Basket Time | 270 | 85 Days | 11/3/2010 3:00:0 |
| Liner Pulper Extraction Plate Time | 360 | 114 Days | 10/5/2010 11:00: |
| Liner Pulper Rotor Time | 360 | 114 Days | 10/5/2010 11:00: |
| Liner Barrier Screen Basket Time | 360 | 187 Days | 7/20/2010 8:00:0 |
| Liner Primary Screen Basket Time | 360 | 272 Days | 4/26/2010 8:00:0 |
| Liner Secondary Screen Basket Time | 360 | 336 Days | 3/10/2010 5:00:0 |
| Hydrapurge Extraction Plate Time | 180 | 90 Days | 10/29/2010 3:00: |
| Hydrapurge Rotor Time | 180 | 90 Days | 10/29/2010 3:00: |

Beater Room Equipment Maintenance Tracking - Manual Entry Screen

Clear | Edit History | Write to PI

Click on Green Unit Cell to choose Module

Select Unit First: SFiller Pri Basket

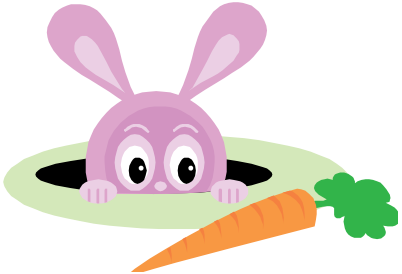
Click for date / or type date below

Add Comment

After entering comment hit "Enter" before writing to PI

| Equipment | Date Changed | Days Running | Comments |
|---|---|---|---|
| Barrier Basket | 20-Jul-10 20:00 | 187.0 | Date updated by jbrahs |
| Filler Pulper Ext | 21-Apr-10 17:00 | 271.7 | Date updated by JBrahs |
| Filler Pulper Rotor | 21-Apr-10 17:00 | 271.7 | Date updated by JBrahs |
| Filler Sec Basket | 15-Jun-10 15:00 | 189.0 | Date updated by nlarson |
| Filler Ter Basket | 03-Nov-10 15:00 | 84.7 | Date updated by nlarson |
| Hydrapurge Ext | 29-Oct-10 15:00 | 90.3 | Date updated by jbrahs |
| Hydrapurge Rotor | 29-Oct-10 15:00 | 90.3 | Date updated by jbrahs |
| Liner Pri Basket | 26-Apr-10 20:00 | 271.8 | Date updated by jbrahs |
| Liner Pulper Ext | 05-Oct-10 23:00 | 113.7 | Date updated by jbrahs |
| Liner Pulper Rotor | 05-Oct-10 23:00 | 113.7 | Date updated by jbrahs |
| Liner Sec Basket | 10-Mar-10 17:00 | 317.8 | Date updated by JBrahs |
| NFiller Pri Basket | 24-Feb-10 17:00 | 4.2 | From the Secondary |
| SFiller Pri Basket | 06-Jan-11 12:00 | 24.3 | Date updated by jbrahs |
| Turbo Ext | 07-Jan-11 15:00 | 24.5 | Holes in extraction plate, shut down to change |
| Turbo Rotor | 07-Jan-11 12:00 | 24.6 | Date updated by jbrahs |

# Next Power User Group Meeting – Sneak Peak



- Zero to PI Coresight in one week!

PI Coresight™ Brought to you by OSIsoft.

# PI Coresight

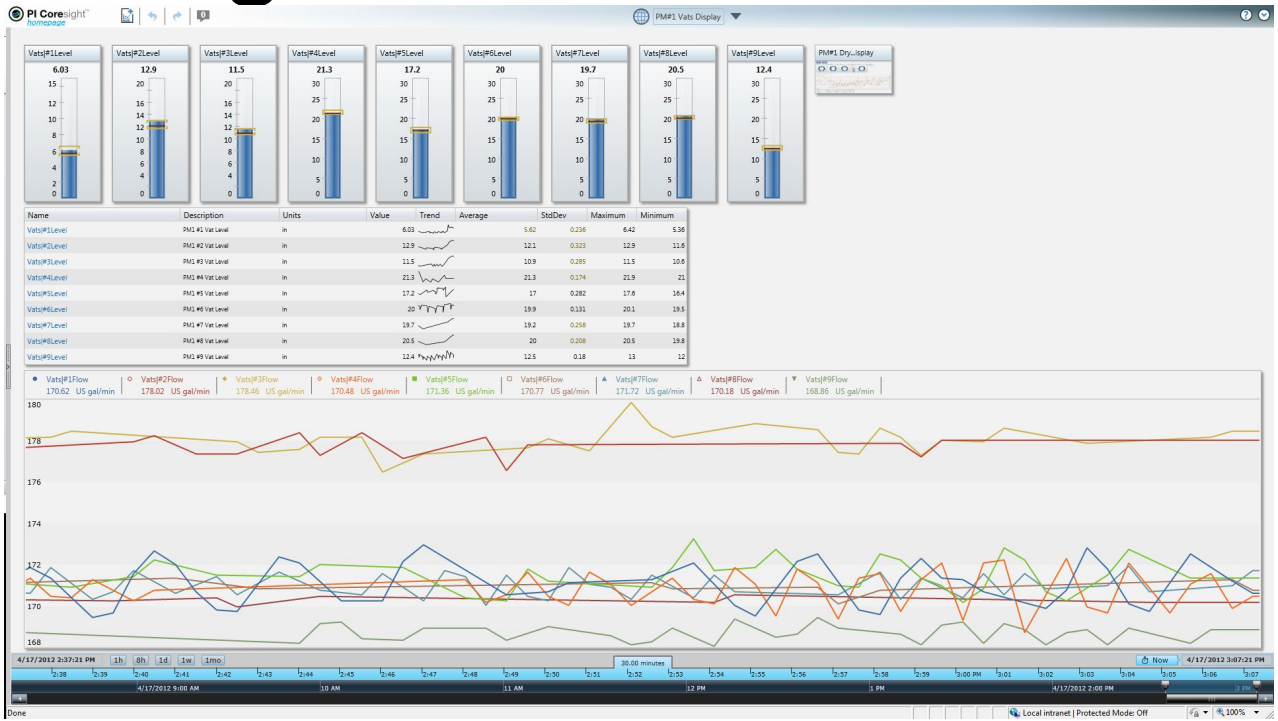
- Demonstrated at the PI System Power User Group meeting
  - "*Tired of getting overwhelmed by all this big, crazy data. PI Coresight is a huge step forward in creating a holistic view because it is nice and clean and easy to use*" – Matt Corcoran
  - What RockTenn likes about PI Coresight
    - Easy to Understand, Minimal training
    - Minimal display configuration effort
    - Minimal Resources to Rollout and Support
    - Professional, Superior Visual Aesthetics'
  - Matt is determined to win in 2012 and be the one that Rocks at RockTenn!

# PI Coresight at RockTenn

# PI Coresight – PM Dry End


- "*Operators are afraid of full blown PC Applications, PI Coresight will give them easy to use Ad-hoc capabilities*" – Matt Corcoran

# PI Coresight – PM Vats




*"Professional, Superior Visual Aesthetic's"* – Matt Corcoran

# In Summary

- Need to keep the momentum going
- Implement the best across all Mills
- Include power users from 14 added Mills

# RockTenn Power Users

Beth Murray, Enterprise PI Administrator, bmurray@rocktenn.com

| Application | Developer | Contact |
|---|---|---|
| Grade Costing Calc Sheet | Don Simonson | dsimonson@rocktenn.com |
| Equipment Run Time | Nate Larson | NLarson@rocktenn.com |
| 3-D Profiling | Matt Corcoran | MRCorcoran@rocktenn.com |
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| Coating Batch | John Brooke | jbrooke@rocktenn.com |
| Process Data in Excel | Tim Anderson | tmartin@rocktenn.com |
| Effluent Monitoring | Travis Ritchens | tritchens@rocktenn.com |
| PI System Reel Report | Ralph Morgan | remorgan@rocktenn.com |

# THANK YOU

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