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REGIONAL SEMINARS 2013

The Power of Data

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Improving Data Usability

Presented by **Sergio S. Villarreal**

Michael S. Nelson

SHERWIN ALUMINA COMPANY, LLC

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Plant Wide Application

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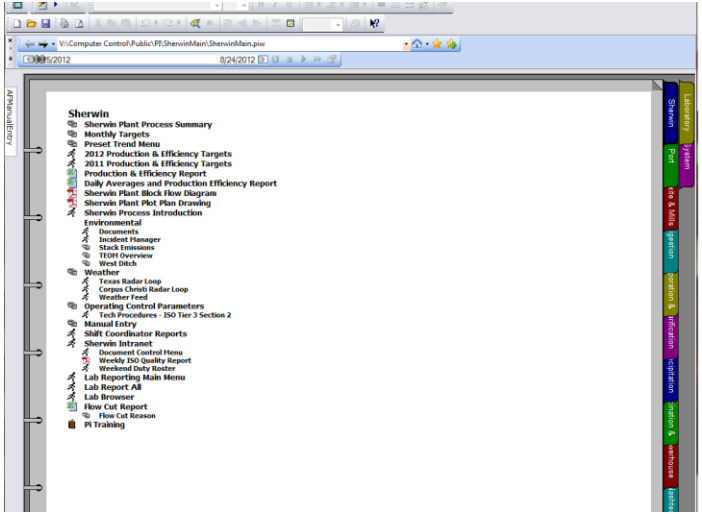
Plant Wide Application

“In a plant where the production output, status conditions, and plan execution from one process area directly affects another, PI ProcessBook has served as the ultimate tool.”

Sergio Villarreal – DCS & Controls Engineer



BUSINESS CHALLENGE

- Provide a single data monitoring source for all plant personnel.

SOLUTION

- Provide PI ProcessBook to all plant Personnel.
- Organize PI ProcessBook so that each process area has a dedicated section.
- Establish a method to manage content.

RESULTS & BENEFITS

- Area operations know what to anticipate and properly react.
- Operations and management monitor critical data from same source!

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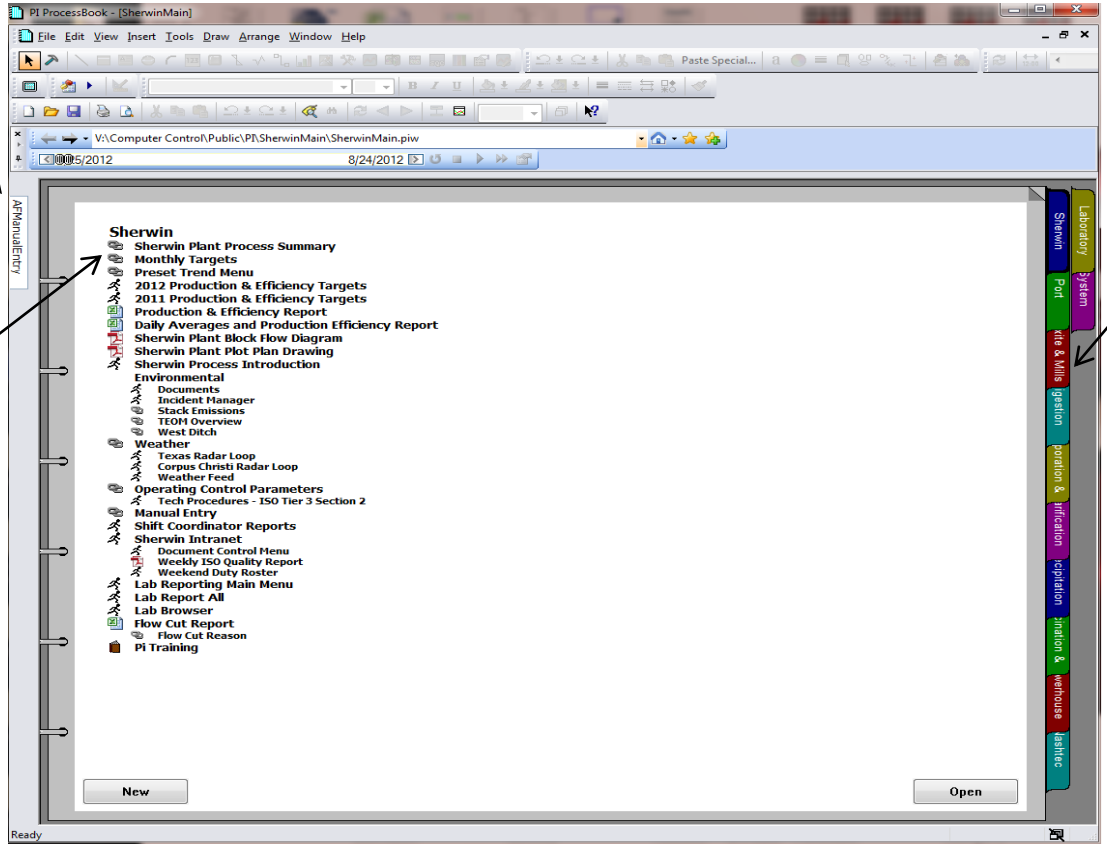
Plant Wide Application

Custom developed manual entry add-in to PI ProcessBook

We have placed a variety of file types within our PI ProcessBook in order to best serve users. The following slide will show several examples.



Individual tabs per facility. This helps with organization efforts of our Displays and links while creating user-friendly navigation.

Benefit: Operations and management monitor critical data from same source!

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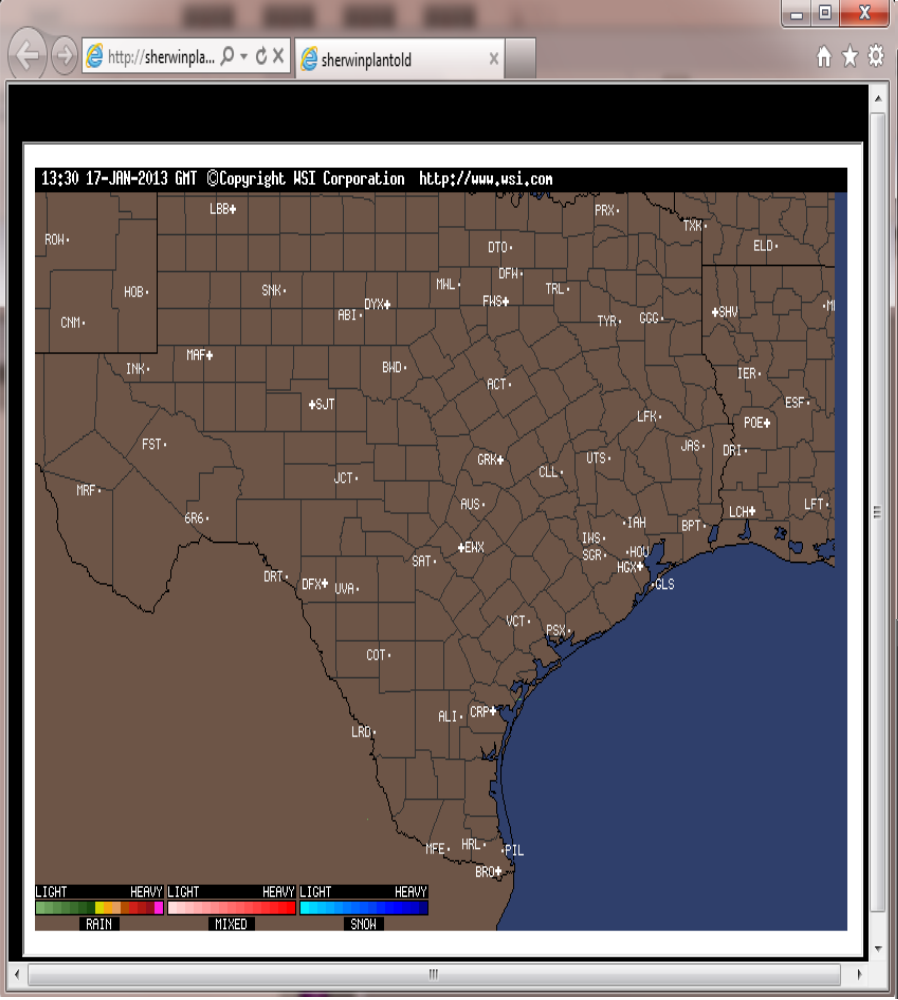

http://lqres015n/ReportServer/P

Report Viewer

Find | Next | Select a format | Export

Sherwin Alumina Company

Data Browser
AUTO TAG MAN

Lab Information Data

OVERVIEW

Daily Report
ALL Area Group

Corpus Christi, Texas
1/17/2013 8:01:33 AM

Area	Group	PI Tag Name

- Area I (0001)
- Area II (0002)
- Area III (0003)
- Area IV (0004)
- Area V (0005)
- Cleaning (0006)
- Standards (0007)
- Raw Material (0008)
- Weekly (0009)
- Monthly (0010)
- Charge Calculation (0011)
- RH-15 (0015)
- RH-20 (0020)
- RH-30 (0030)
- Calcined Alumina (0050)
- Miscellaneous (0060)
- Special Requests (0070)
- Monthly Inventory (0080)
- Nashtec (1000)
- Powerhouse (1010)

PiTraining

ProcessBook-Beginner

- Setting A Start Page
- Finding SherwinMain
- SherwinMain Menu And Trend
- Tag Search
- Toolbar Manager
- Multiple Windows
- Navigate With Browser Toolbar Home and Bookmarks
- Open Workbook Entries
- Show Statistics Information
- Use the Playback Functionality
- Use the Revert Button on the Time Axis
- Expand and Reduce a Trend
- Use Forward and Backward Arrows on the Time Axis
- Show Timestamp of a Value With the Trend Cursor
- Use the Zoom In and Out Functionality Directly on the Trend
- Show and Hide Multiple Traces on a Trend
- Manual Entry

ProcessBook-
essBook-
Link-Begin
Link-Adva

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Little Instrumentation, huge visibility

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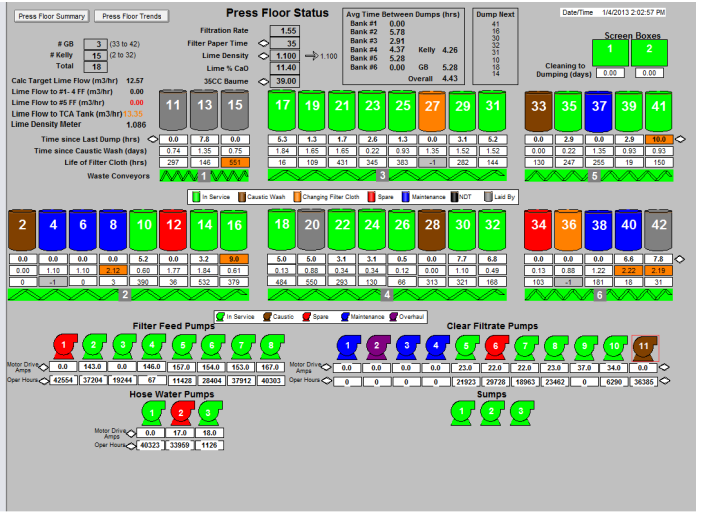
PRESSFLOOR

“This is the best and most comprehensive view of the press floor operation Sherwin Alumina has ever had.”

Joseph Cook – Process Engineer



BUSINESS CHALLENGE

- Little to no instrumentation.
- Provide the field operators a simple electronic method of entering and monitoring data related to the stages of their equipment.

SOLUTION

- Using PI AF, PI Performance Equations, and our custom developed manual entry add-in to PI ProcessBook, we created a display for live monitoring.

RESULTS & BENEFITS

- Plant personnel now have the ability to monitor Pressfloor conditions near real-time as opposed to end of shift.
- Provides operating history.

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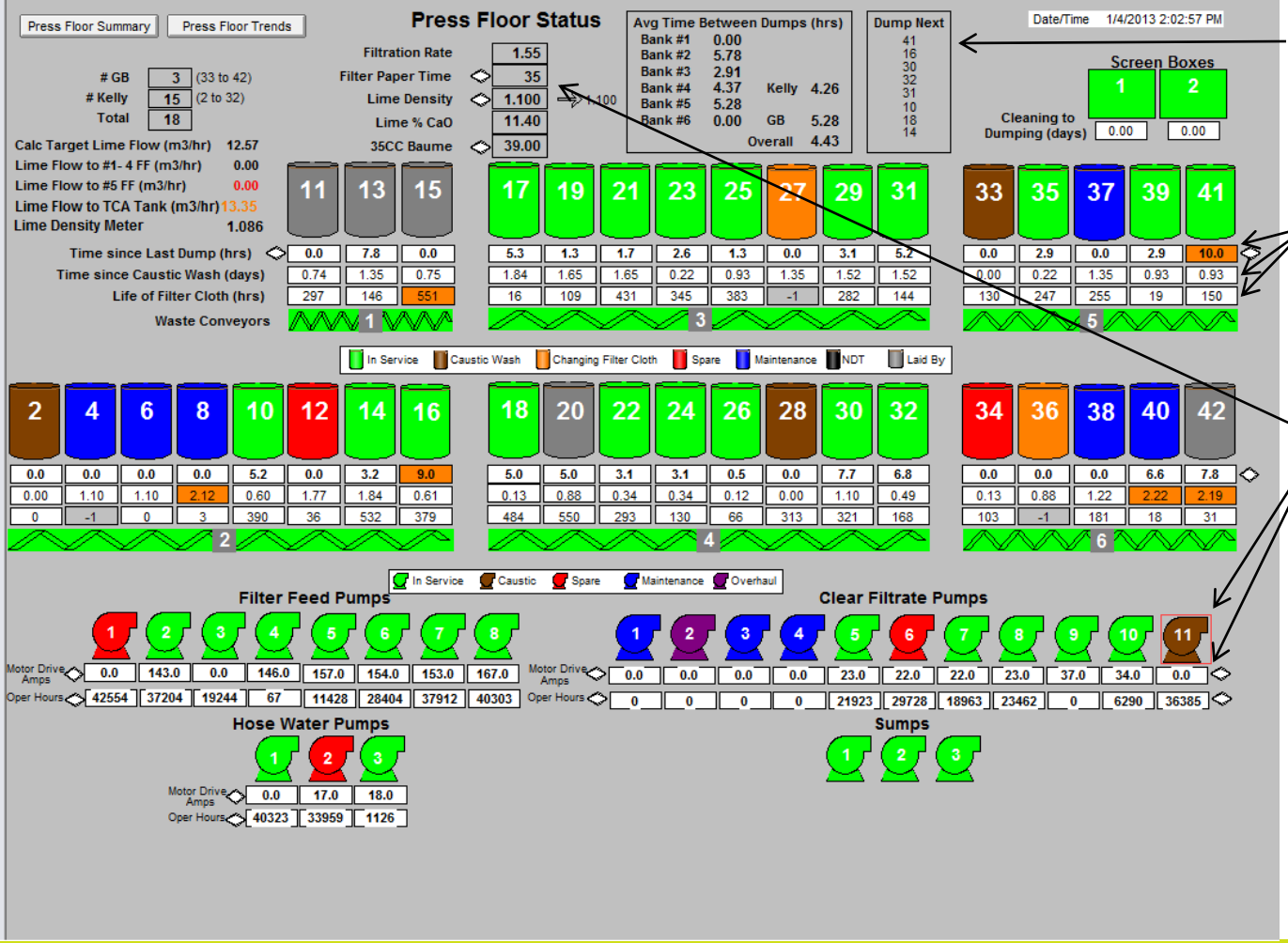

Using PI ACE, we search for the “oldest” press and provide a running list for operations to know which press to dump next.

Using PI Performance equation tags, we calculate the filter cloth age, hours since last dump, and days since last caustic wash.

Using our custom manual entry tool, operators enter numerical data and update Press and Pump Statuses to compensate for lack of instrumentation. The manual entry tool is tied to a PI AF structure which then updates a PI tag.

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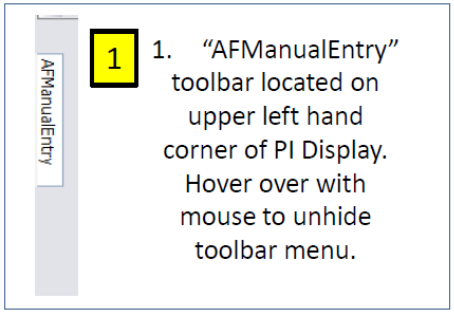
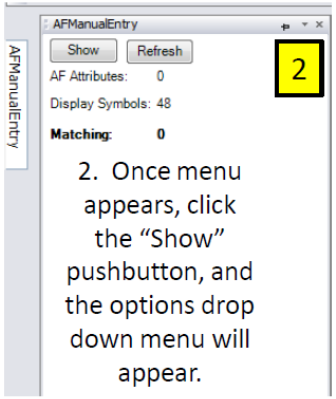
Date	Doc. No.	Developed By	Owner Approval	Revision No.
10/18/2012	12-PREC-1033	Sergio Villarreal	Chris Gonzalez	0

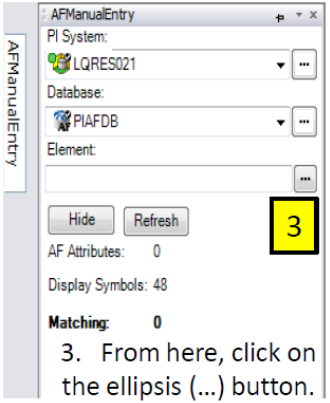
How to Activate Manual Entry for Precipitation



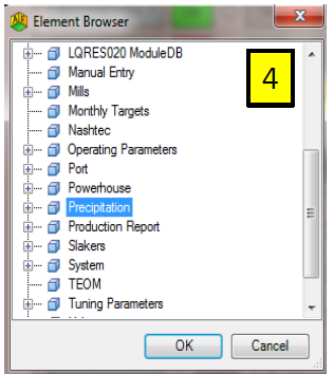
1. "AFManualEntry" toolbar located on upper left hand corner of PI Display. Hover over with mouse to unhide toolbar menu.



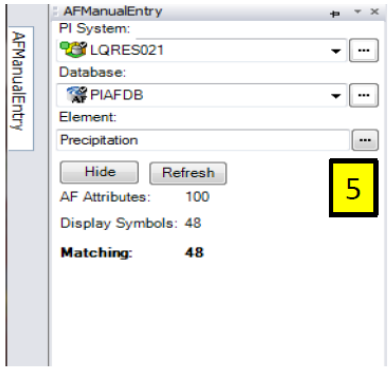
2. Once menu appears, click the "Show" pushbutton, and the options drop down menu will appear.



3. From here, click on the ellipsis (…) button.



4. The Element Browser will appear, browse down and double click on Precipitation. The Element Browser will disappear and fill in Precipitation as the selected element. Then Click on the "Refresh" Pushbutton.



5. Your final menu display states the number of AF Attributes under Precipitation, the number of symbols on the current PI Display, and total symbols matching.

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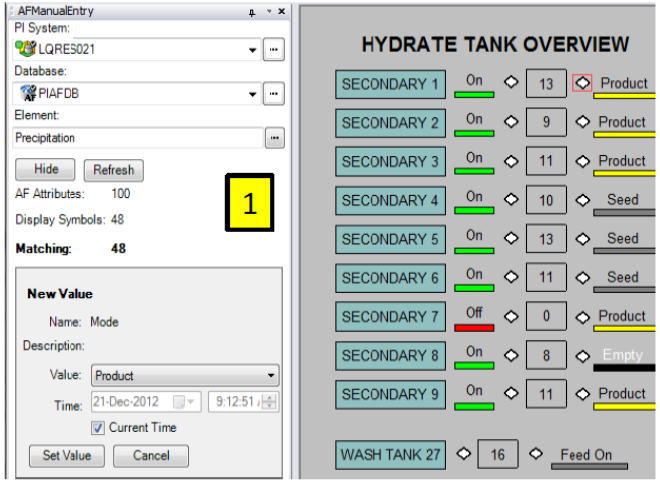
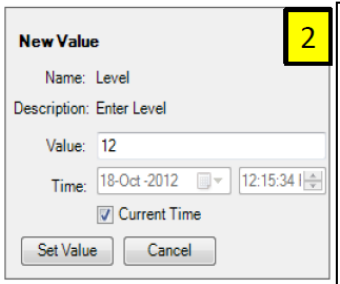
Date	Doc. No.	Developed By	Owner Approval	Revision No.
10/18/2012	12-PREC-1034	Sergio Villarreal	Chris Gonzalez	0

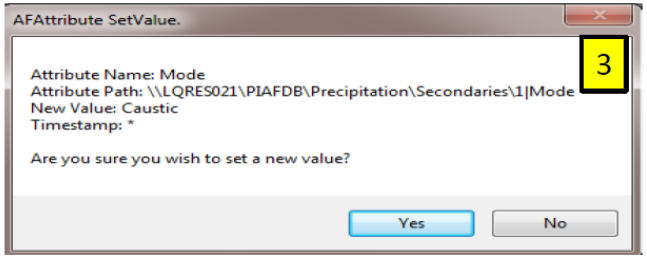
How to Use Manual Entry for Precipitation



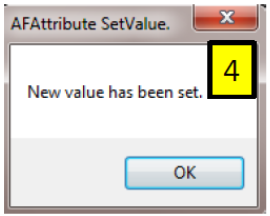
1. A white diamond is displayed to the left of manual entry statuses and values. By double clicking on the diamond you bring up the AFManualEntry menu. To change the value use the drop down menu and select the desired value. Click on the "Set Value" button.



2. For numeric input, type in the new value and then click on the "Set Value" Pushbutton. You can use Current Time or set the time of sample. Uncheck the checkbox and set the time of sample, then click "set value."



3. This pop up window is simply to confirm that you wish to set a new value in to the selected tag. Click yes to confirm and no to cancel.



4. Lastly, Pi will notify you that the new value has been set. Click ok or press Enter. The new value will then appear on the display momentarily.

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Business Challenge

- How much bauxite do we have and where in the building is it stored?
- Where are we pulling from?

Solution

- Modify scheduled building inventory to include entering data.

Results

- Improves efficiency for ship unloading.
- Prevents contamination!

Don't mix High Temp Bauxite into Low Temp Bauxite.

- Plan out process plan.

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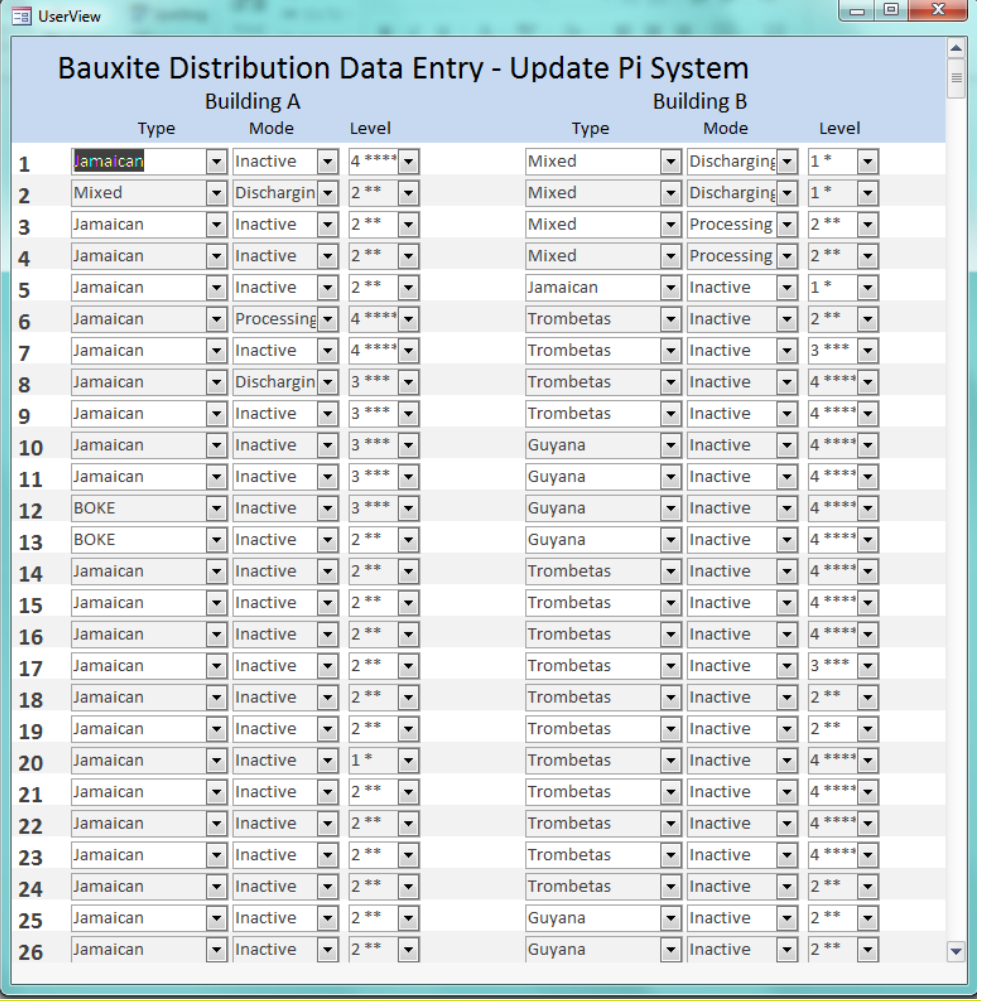

- Microsoft Access form used to enter observed data during bauxite building walk-through. The form updates a SQL table which is linked to PI AF.
- Type: Type of bauxite is selected by using the drop down menu. For building A choices are Jamaican, Boke, and Mixed. For building B choices are: Trombetas, Guyana, Mixed.
- Mode: Discharging – Adding bauxite to section.
  Processing – Pulling bauxite from section.
  Inactive – Stored bauxite.

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Daily Automated Report

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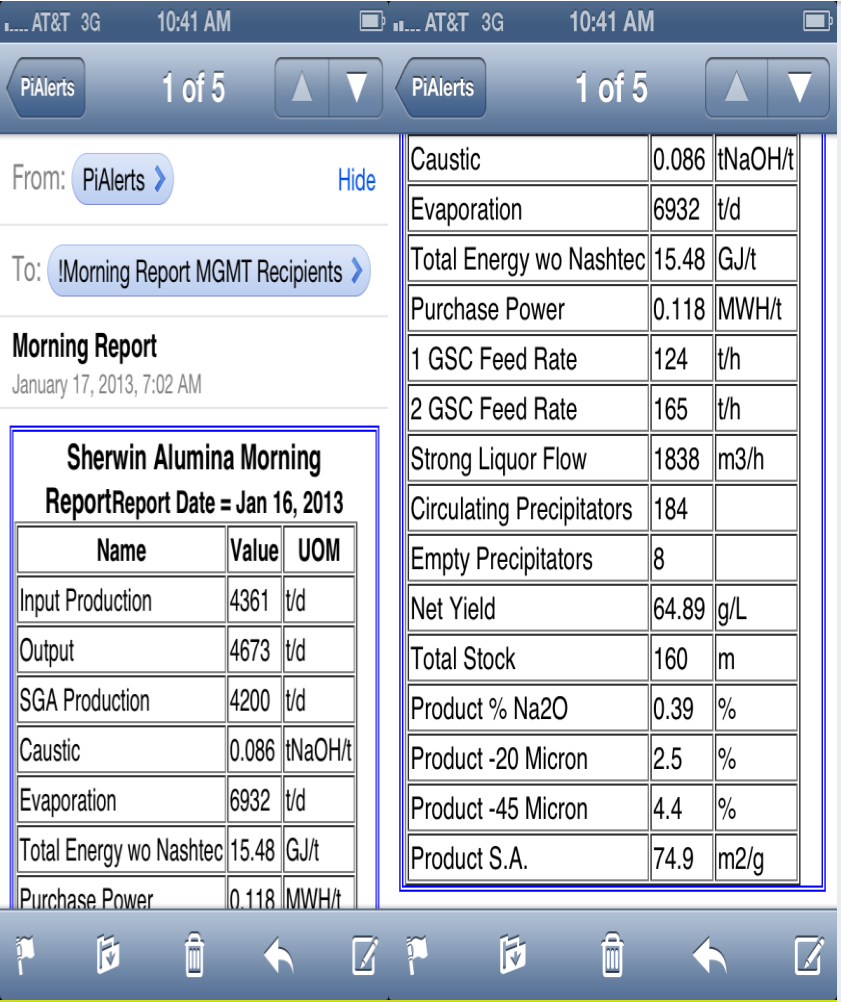

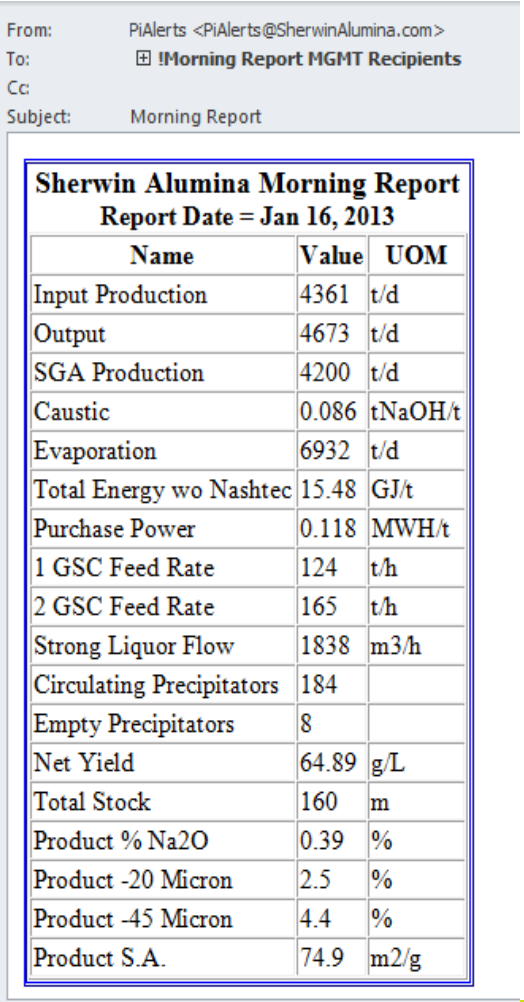

Business Challenge

- Automating a report highlighting totals for key information and emailing it to Management.

Solution

- Using PI OLEDB, MS-SQL, and PI AF we generate and distribute the morning report.

Results

- Members of management are provided with report prior to morning meetings.
- As shown, report successfully displayed via mobile device.

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Closing Quote!

The implementation of PI at Sherwin has allowed me to quickly access and analyze much more process data than before, including the ability to create relatively complex real time computations, and to share results via ProcessBook or Excel.

Darrell Schmidt – Senior Process Engineer

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