Archer Batch Controls– Reporting

JONEL

CONTENTS

PHILOSOPHY OF ARCHER REPORTING

Jonel Engineering's Archer Reporting Tool is a comprehensive report and production dashboard that enables companies to track the most leveraging Key Performance Indicators and business production statistics in the ready mix business on a daily basis. Key Performance Indicators are detailed metrics that can be quantified that directly or indirectly drive production results of the organization. Some examples of these reports include plant productivity, material usage, inventory and batch plant optimization.

By accurately identifying and tracking these performance metrics, Jonel clients are better able to:

- Realize their customer service vision,
- Focus on the most important fundamentals of the business,
- Eliminate waste,
- Rapidly implement best practice processes,
- Educate everybody on the team about how their role impacts financial performance, and
- Simplify their business by streamlining management reporting.

The Archer Reporting tool can be used to identify the key performance metrics for every level of the organization, and allow every level of management to rapidly identify instances and causes of inefficiencies during the day.

UNDERSTANDING DATA SOURCES AND REPORTING ARCHITECTURE

Archer Reporting Services are designed with flexibility in mind. Archer is designed to provide management access to vital production data without effecting the day-to-day plant production by the plant or batch operator. To service this need, Archer is designed as a client-server architecture.

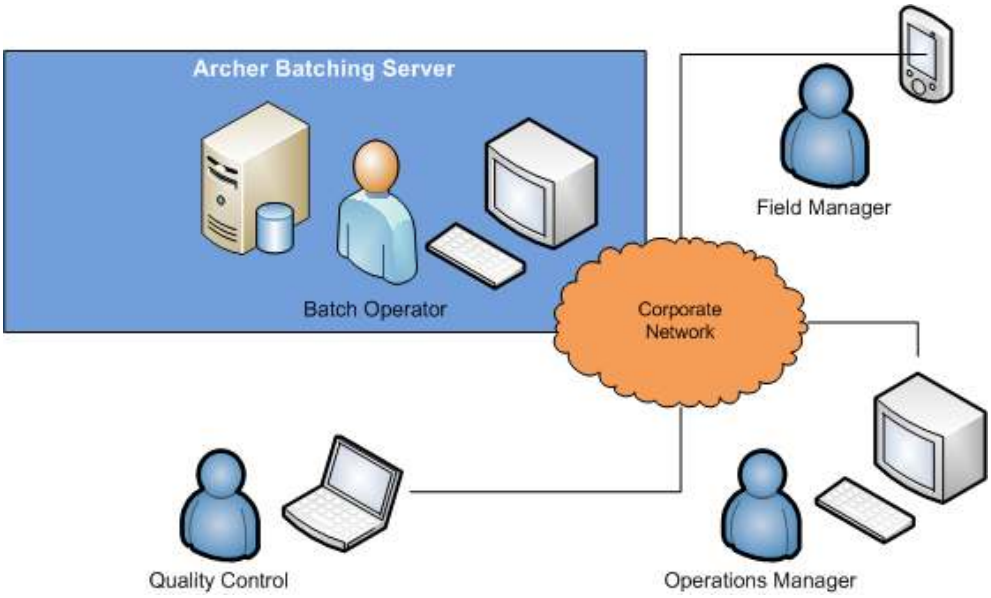


Figure 1 Archer Client Server Architecture

The system begins with the Archer Batching engine that resides at the plant. Information is then hosted through this system and disseminate throughout the enterprise. Having access to this information in real time, without having to interrupt the batch operator from their normal work flow, is critical to ensure that vital production information is accessed quickly, accurately and reliably.

REPORTING DASHBOARD

The Archer Reporting system is designed as a "dashboard" model. Think of an automobile there are gauges, lights and indicators that identify if your vehicle is operating at its optimum level, this is similar to looking at your production facility. When critical issues impact driving performance, the driver is alerted to these specific areas. Drivers in an automobile are not required to "run" a report, they simply look on the dash and see that something needs attention. Archer is designed with the same alert mechanism in mind.

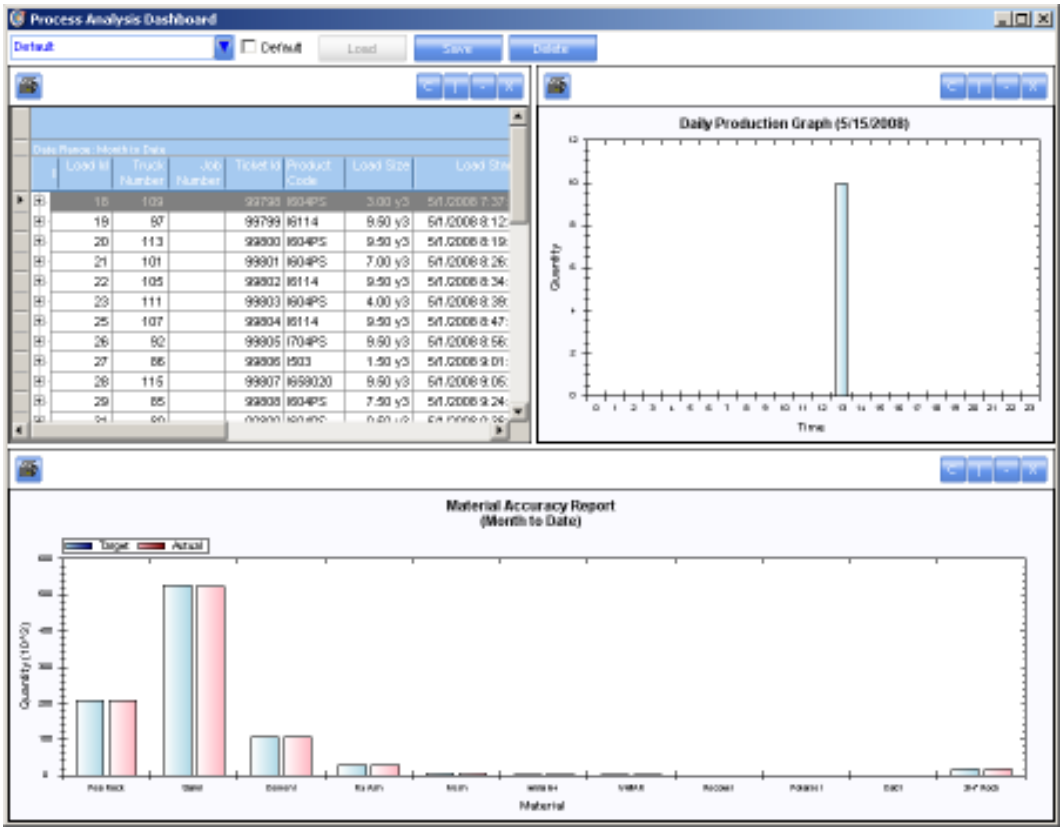
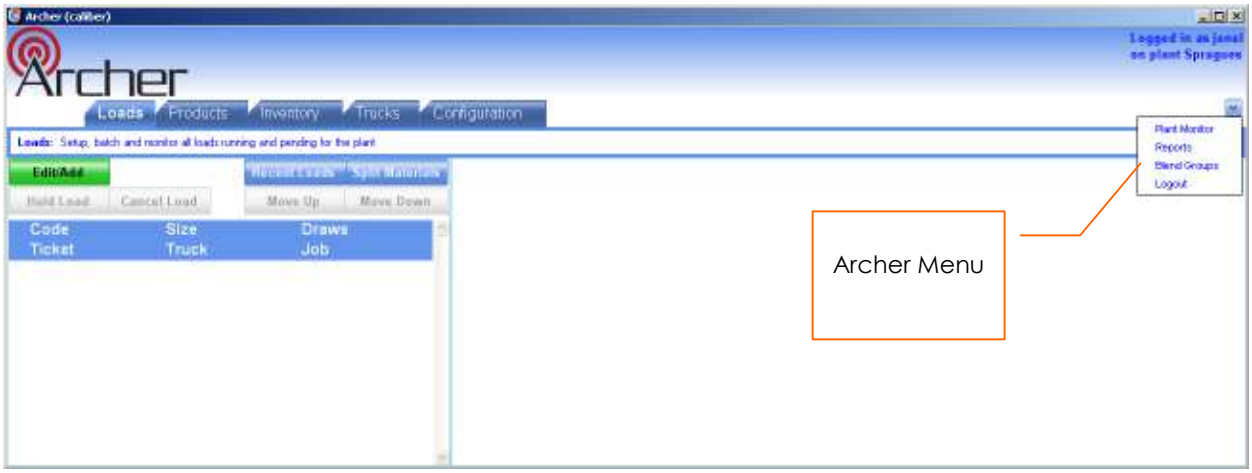


Figure 2 Reporting Dashboard

Think of the reporting dashboard as a blank canvas. With this canvas or dashboard you can overlay various aspects of your operation and its information content. Thus the dasboard can be tiled with multiple reports that are all displayed simultaneously. Similar to the automobile dashboard example, these reports can be grouped together and will automatically update based on inputs from the operation. As batches occur and inventory is depleted the information is automatically displayed on the screen.

CONFIGURING AND RUNNING REPORTS

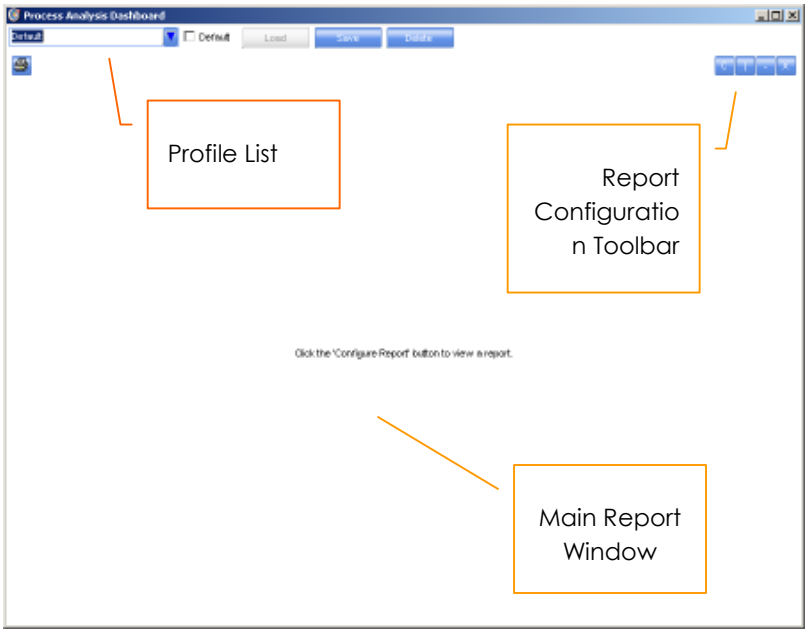
The Report system can be loaded by selecting the Report option located under the Archer Menu on



the far right of the main window. The Report module is designed to use **Profiles**. Profiles are designed to allow users to save different layouts and report configurations. This allows the user to customize their dashboard based on their own preferences.

THE MAIN REPORT WINDOW

When you launch the Report system for the first time the main Report window will be displayed. This is



the screen users can generate a single – "ad hoc" report or set up a report profile that you can run every time the Report window is opened.

If a report Profile has not been setup then a blank Report window will be displayed.

Report Configuration Toolbar

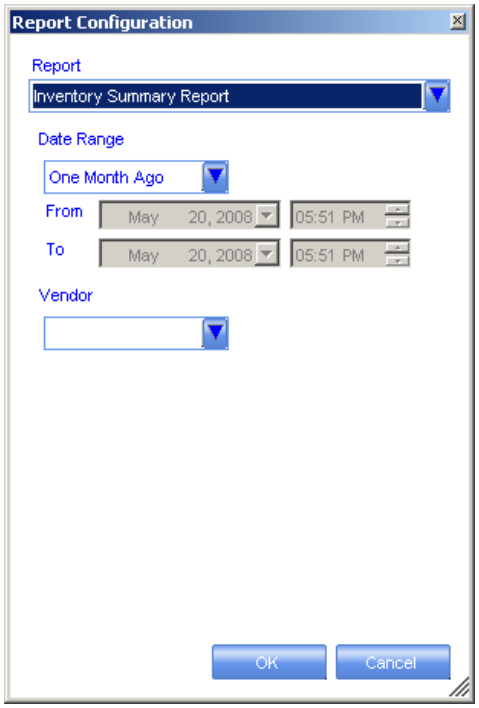
The Report Configuration tool bar is on the far right of the Main report window. The toolbar has four buttons that are used to control and setup new reports that can displayed on the Main Report Window. Each button is described below:

Icon	**Description**	**Function**

C	Configure	Click this button to create a new report configuration. This button launches the Report Configuration Editor.
|	Split Vertically	Click this button to create a new report in the main report screen that is Vertically split with an existing report.
-	Split Horizontally	Click this button to create a new report in the main report screen that is Horizontally split with an existing report.
X	Close Report	Closes a launched report definition

Report Configuration

The Report Configuration Dialogue is used to run new reports from the Main report window. This window will appear when selecting the "C" button on the report configuration toolbar explained in the previous section.

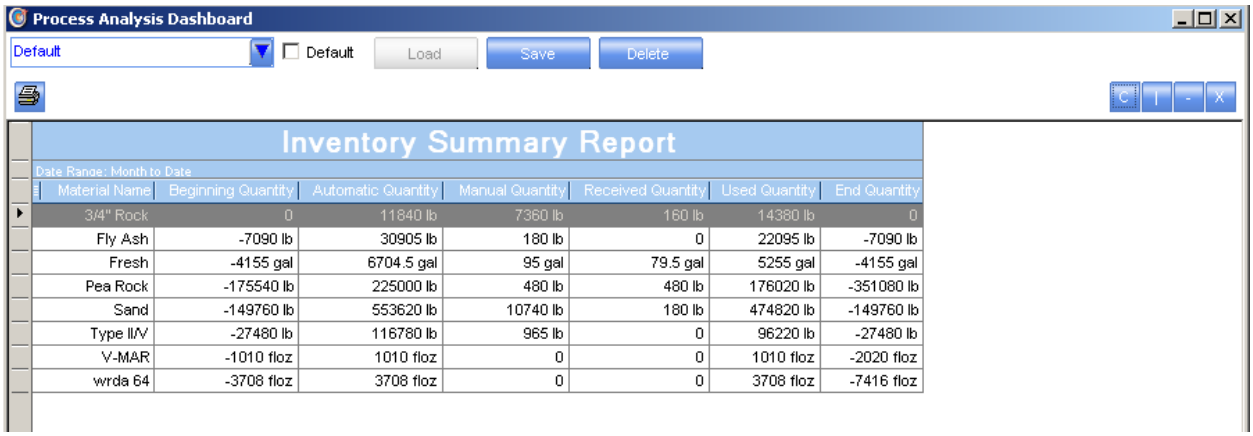


This window allows you to select the style of report and the input and filter parameters such as date ranges. The report configuration parameters differ based on the reports that are selected in the Report selection list at the top of the window. Once the report is selected the user is presented with the specific report options and filtering options of the report.

When the filtering options are selected you can press OK and the report will be generated with the filtering options selected.

Generating a Report

Single Report Output:



Material Name	Beginning Quantity	Automatic Quantity	Manual Quantity	Received Quantity	Used Quantity	End Quantity
3/4" Rock	0	11840 lb	7360 lb	160 lb	14380 lb	0
Fly Ash	-7090 lb	30905 lb	180 lb	0	22095 lb	-7090 lb
Fresh	-4155 gal	6704.5 gal	95 gal	79.5 gal	5255 gal	-4155 gal
Pea Rock	-175540 lb	225000 lb	480 lb	480 lb	176020 lb	-351080 lb
Sand	-149760 lb	553620 lb	10740 lb	180 lb	474820 lb	-149760 lb
Type II/V	-27480 lb	116780 lb	965 lb	0	96220 lb	-27480 lb
V-MAR	-1010 floz	1010 floz	0	0	1010 floz	-2020 floz
wrda 64	-3708 floz	3708 floz	0	0	3708 floz	-7416 floz

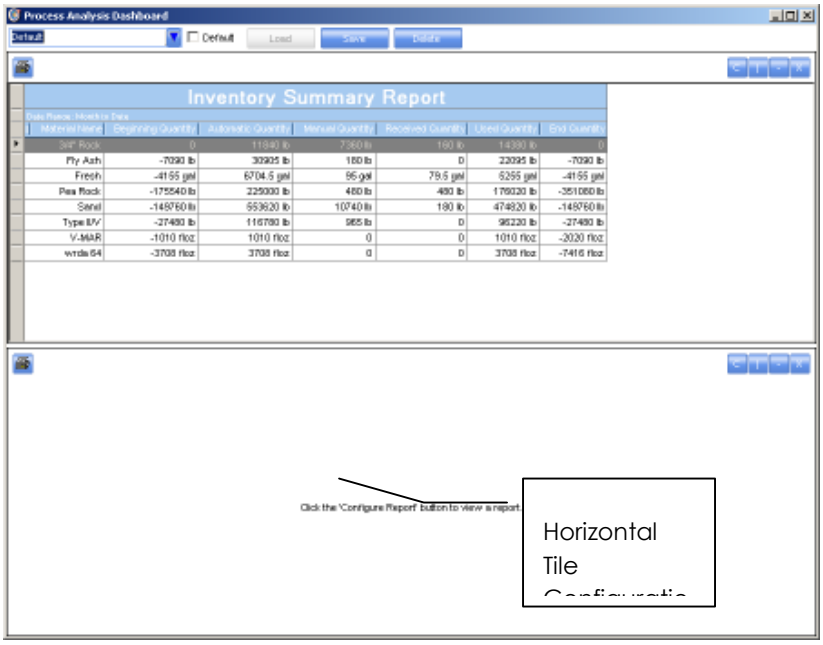
Once the report is generated you can leave this report on the screen for "view only" mode or you can print the screen output by selecting the Print button at the top-left of the Report Window.

To generate a new report simple select the "C" button for Report Configuration toolbar. This will present you with another list of reports in the configuration screen.

Report Tiling

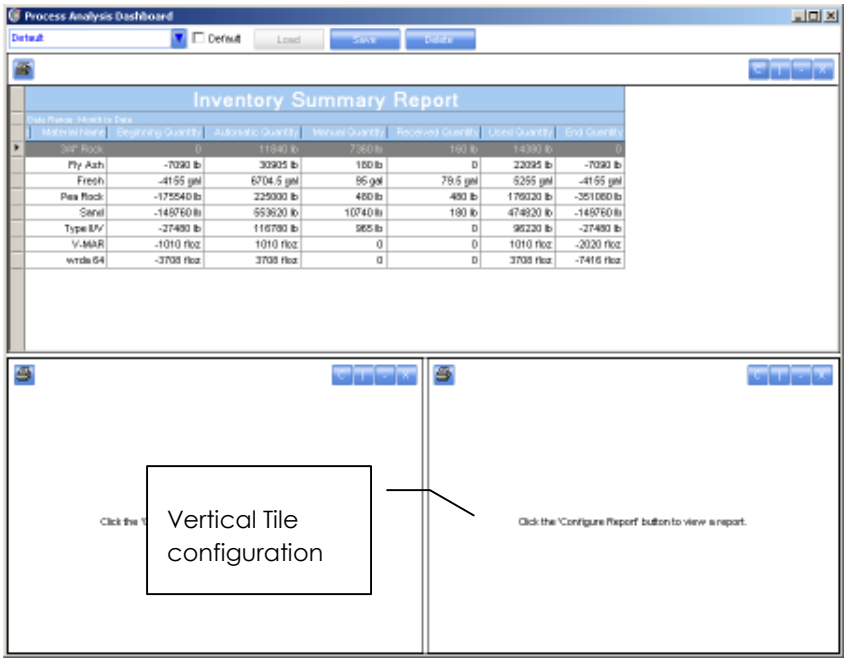
One unique feature to about the Archer Report system is that multiple reports can be tiled or grouped together on the dashboard. This allows users to provide them with multiple views and information content from various areas of operation, all in place, updating at the same time.

You can tile reports by using the Split Horizontal and Vertical button options on the Report Configuration Toolbar. Using the split Horizontal option will display a new report definition horizontally.



In this mode, you can than select the Configuration button ("C") from the toolbar to select the new report and filter options you wish to view in the new report definition.

If you wish to tile vertically simply select the Vertical tile option on the toolbar (||). This will display new report definition with the reports displayed side by side.



Once the tile report definition is setup, you can select the reporting options for the new report through the Report Configuration window by clicking the "C" button on the toolbar.

Saving Report Configurations

The Report dashboard can be saved under a profile so that layouts and report filter parameters can be stored for future use. To save a report profile simple type in the name in the Profile List text box at the top left of the main report window and then click the Save button.

You can also flag a report layout profile as Default. Default profiles are what get loaded each time the report system is selected from the main menu. To set a profile as the default, make sure to click the Default check box next to the Profile List and then click the Save button.

Auto Refresh

Archer Reports auto-refresh content. This allows users to keep the reporting system running on their desktop and the information content is automatically displayed on your dashboard.

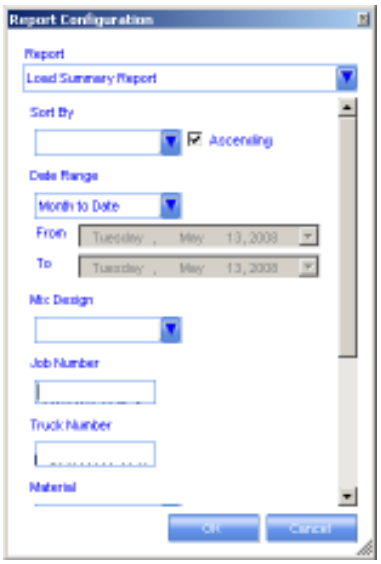
ARCHER REPORTS

The Archer Reporting system has several standard reports that can be displayed for reporting and analysis purposes. This section describes each one of the standard reports in the system.

LOAD SUMMARY REPORT

The Load Summary Report provides both summarized and detail view of all loads batched from the system. This report is very helpful for operations managers in order to get a quick list of all batches or to look up a specific load to determine load accuracy, batch weights or any additional information pertaining to the load.

Report Inputs:

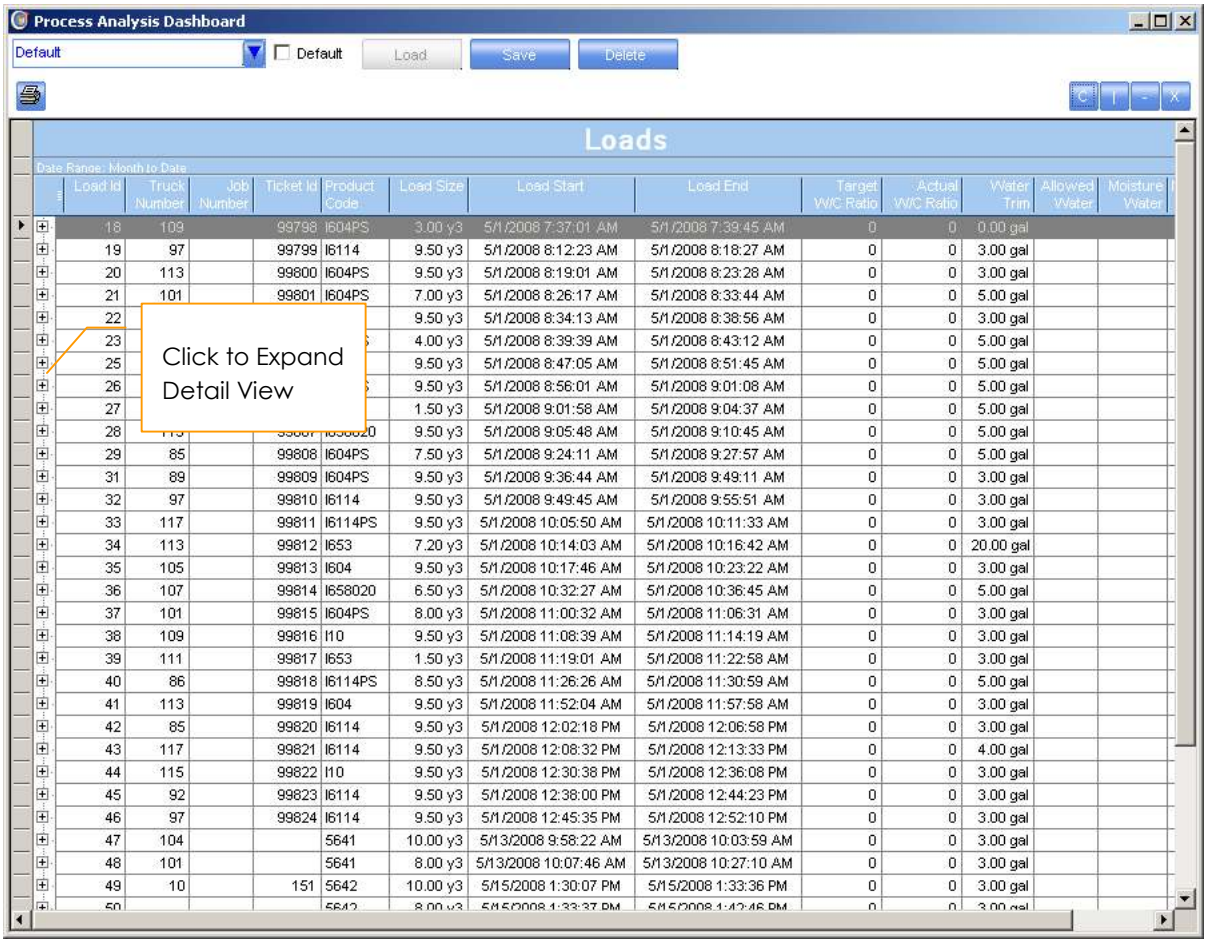


The report contains various filtering criteria to assist users in locating a specific load or group or loads that were batched. The filtering parameters include:

- Date Range
- Mix Design
- Job Number
- Truck Number

The report can also be sorted by both ascending and descending order.

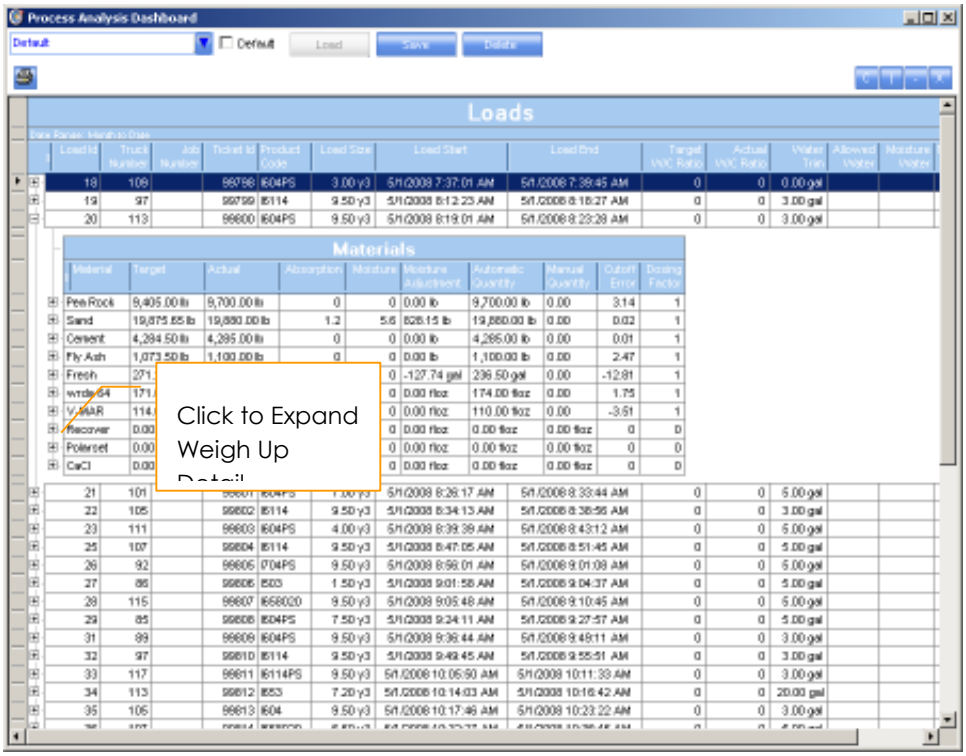
Report Output:



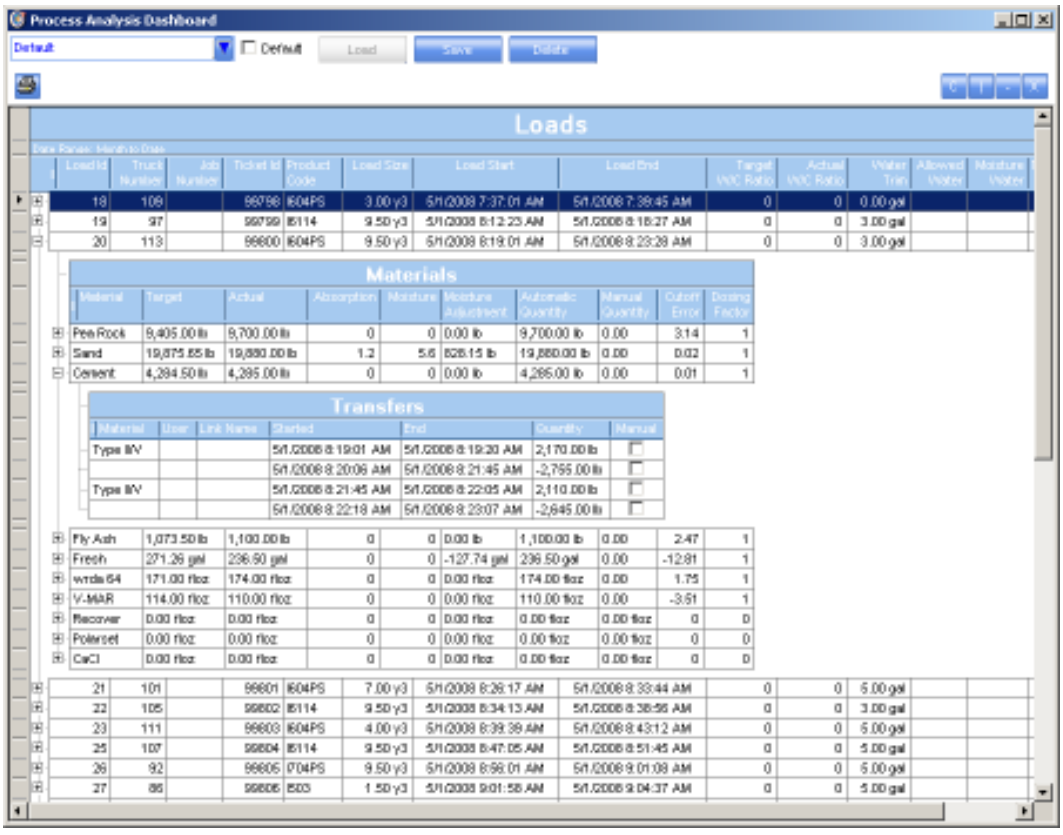
Load Id	Truck Number	Job Number	Ticket Id	Product Code	Load Size	Load Start	Load End	Target W/C Ratio	Actual W/C Ratio	Water Trim	Allowed Water	Moisture Water
18	109		99798	I604PS	3.00 y3	5/1/2008 7:37:01 AM	5/1/2008 7:39:45 AM	0	0	0.00 gal		
19	97		99799	I6114	9.50 y3	5/1/2008 8:12:23 AM	5/1/2008 8:18:27 AM	0	0	3.00 gal		
20	113		99800	I604PS	9.50 y3	5/1/2008 8:19:01 AM	5/1/2008 8:23:28 AM	0	0	3.00 gal		
21	101		99801	I604PS	7.00 y3	5/1/2008 8:26:17 AM	5/1/2008 8:33:44 AM	0	0	5.00 gal		
22					9.50 y3	5/1/2008 8:34:13 AM	5/1/2008 8:38:56 AM	0	0	3.00 gal		
23					4.00 y3	5/1/2008 8:39:39 AM	5/1/2008 8:43:12 AM	0	0	5.00 gal		
25					9.50 y3	5/1/2008 8:47:05 AM	5/1/2008 8:51:45 AM	0	0	5.00 gal		
26					9.50 y3	5/1/2008 8:56:01 AM	5/1/2008 9:01:08 AM	0	0	5.00 gal		
27					1.50 y3	5/1/2008 9:01:58 AM	5/1/2008 9:04:37 AM	0	0	5.00 gal		
28					9.50 y3	5/1/2008 9:05:48 AM	5/1/2008 9:10:45 AM	0	0	5.00 gal		
29	85		99808	I604PS	7.50 y3	5/1/2008 9:24:11 AM	5/1/2008 9:27:57 AM	0	0	5.00 gal		
31	89		99809	I604PS	9.50 y3	5/1/2008 9:36:44 AM	5/1/2008 9:49:11 AM	0	0	3.00 gal		
32	97		99810	I6114	9.50 y3	5/1/2008 9:49:45 AM	5/1/2008 9:55:51 AM	0	0	3.00 gal		
33	117		99811	I6114PS	9.50 y3	5/1/2008 10:05:50 AM	5/1/2008 10:11:33 AM	0	0	3.00 gal		
34	113		99812	I653	7.20 y3	5/1/2008 10:14:03 AM	5/1/2008 10:16:42 AM	0	0	20.00 gal		
35	105		99813	I604	9.50 y3	5/1/2008 10:17:46 AM	5/1/2008 10:23:22 AM	0	0	3.00 gal		
36	107		99814	I658020	6.50 y3	5/1/2008 10:32:27 AM	5/1/2008 10:36:45 AM	0	0	5.00 gal		
37	101		99815	I604PS	8.00 y3	5/1/2008 11:00:32 AM	5/1/2008 11:06:31 AM	0	0	3.00 gal		
38	109		99816	I10	9.50 y3	5/1/2008 11:08:39 AM	5/1/2008 11:14:19 AM	0	0	3.00 gal		
39	111		99817	I653	1.50 y3	5/1/2008 11:19:01 AM	5/1/2008 11:22:58 AM	0	0	3.00 gal		
40	86		99818	I6114PS	8.50 y3	5/1/2008 11:26:26 AM	5/1/2008 11:30:59 AM	0	0	5.00 gal		
41	113		99819	I604	9.50 y3	5/1/2008 11:52:04 AM	5/1/2008 11:57:58 AM	0	0	3.00 gal		
42	85		99820	I6114	9.50 y3	5/1/2008 12:02:18 PM	5/1/2008 12:06:58 PM	0	0	3.00 gal		
43	117		99821	I6114	9.50 y3	5/1/2008 12:08:32 PM	5/1/2008 12:13:33 PM	0	0	4.00 gal		
44	115		99822	I10	9.50 y3	5/1/2008 12:30:38 PM	5/1/2008 12:36:08 PM	0	0	3.00 gal		
45	92		99823	I6114	9.50 y3	5/1/2008 12:38:00 PM	5/1/2008 12:44:23 PM	0	0	3.00 gal		
46	97		99824	I6114	9.50 y3	5/1/2008 12:45:35 PM	5/1/2008 12:52:10 PM	0	0	3.00 gal		
47	104			5641	10.00 y3	5/13/2008 9:58:22 AM	5/13/2008 10:03:59 AM	0	0	3.00 gal		
48	101			5641	8.00 y3	5/13/2008 10:07:46 AM	5/13/2008 10:27:10 AM	0	0	3.00 gal		
49	10		151	5642	10.00 y3	5/15/2008 1:30:07 PM	5/15/2008 1:33:36 PM	0	0	3.00 gal		

Drill Down

The Load Summary report can be expanded to include specific details regarding a load.

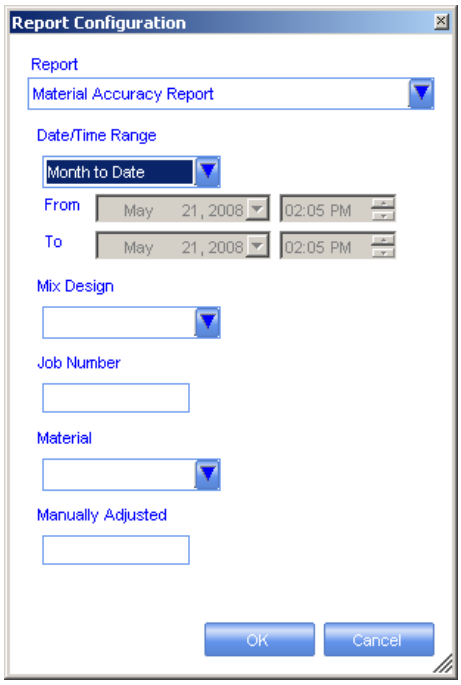


Each Material can also be expanded to show load sequencing (weigh up and discharge) times and manual adjustments.



MATERIAL ACCURACY REPORT

The Material Accuracy Report is a graphical reports that allows operators to quickly identify plant issues by comparing the target vs. actual batch quantities.

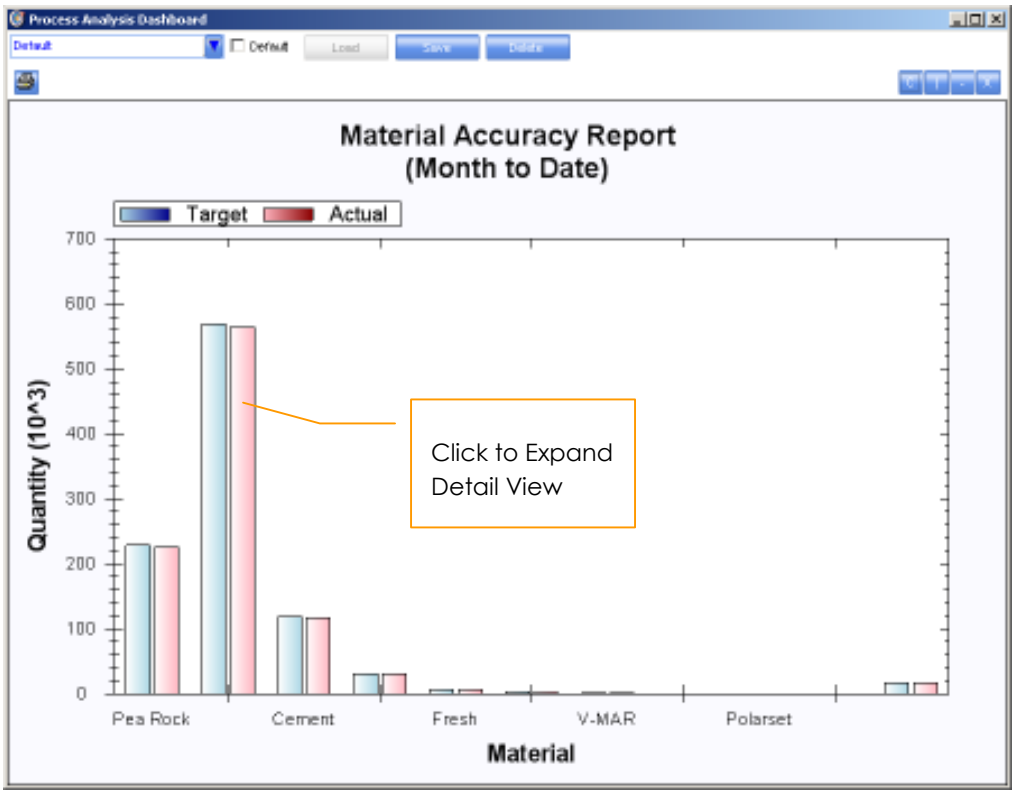


Report Inputs

The report contains various filtering criteria to isolate material batch requests. The filtering parameters include:

- Date Range
- Material
- Mix Design
- Job Number
- Manually Adjusted Loads

Report Output

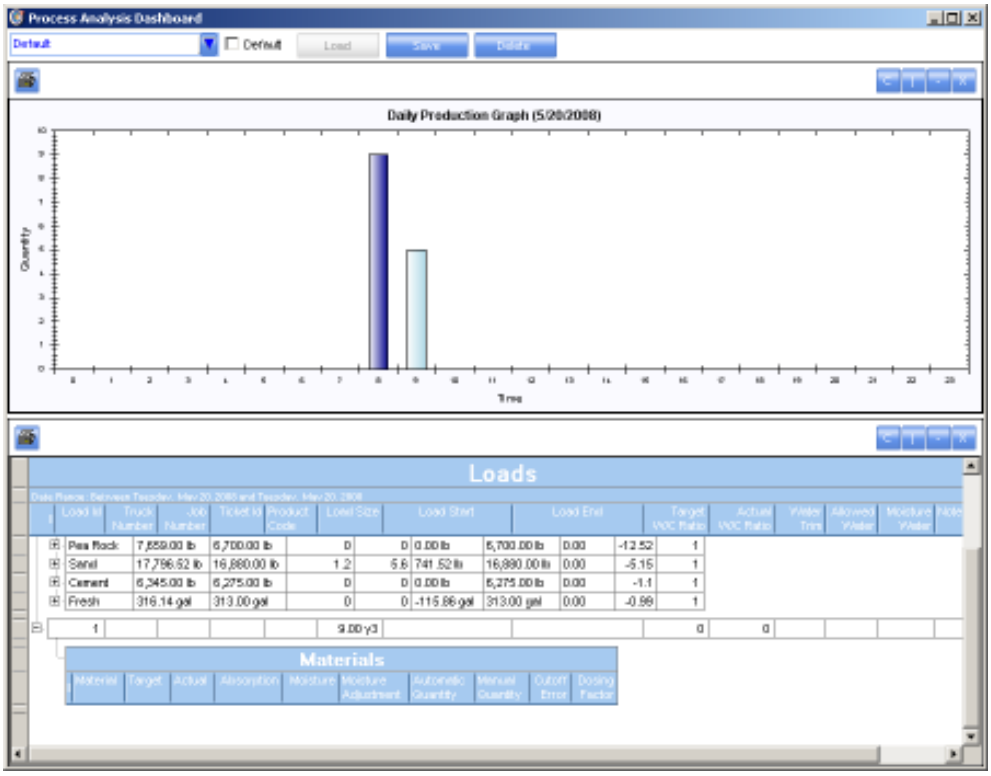


Drill Down

By double-clicking on the Target Actual bar graph, you can drill down to all loads for the specific material to get further analysis on why a material may not be weighing properly.

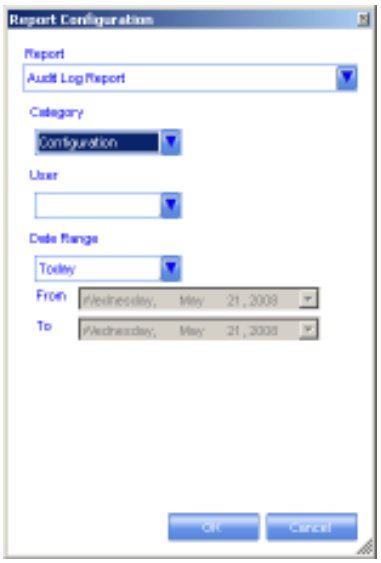
DAILY PRODUCTION GRAPH

The Daily Production report displays the total product of the plant by day, by hour. The report also provides drill down on the each graph element to display each load that makes up the production for each hour.



AUDIT LOG REPORT

Capturing specific changes to the system including mix designs, loads and system parameters is important to ensure proper auditing of the system. The Audit Log Report details all changes made during the course of operation of the system.



Report Inputs

The report contains various filtering criteria to track specific users and categories of the system you wish to report on. The filtering parameters include:

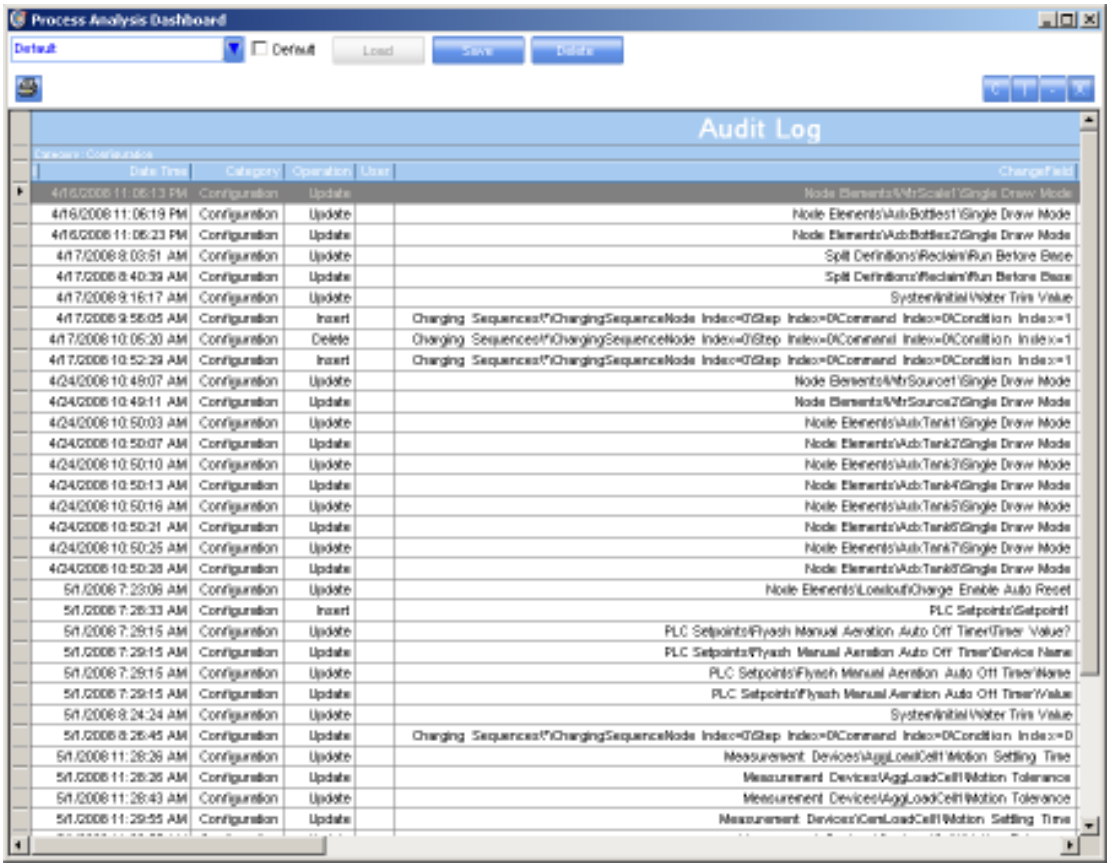
- User

- Category
- Date Range

The categories are the different modules of the system that are audited these modules are listed below:

- Configuration – all configurations files including free falls, scale calibrations, transfer devices and discharge rates
- Ingredients - Raw Materials
- Product – Product name, descriptions, etc
- Recipe – mix design quantities
- Trucks

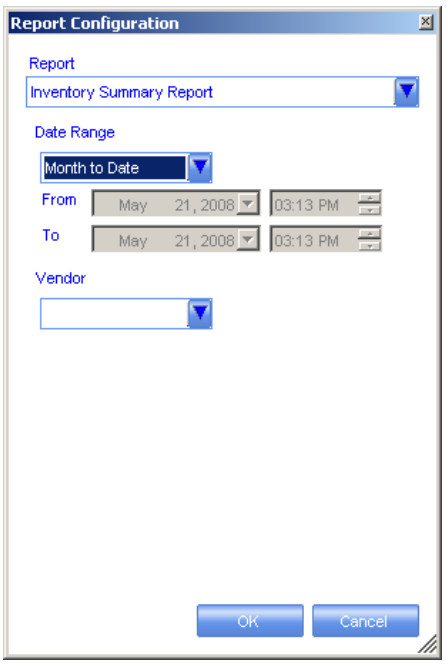
Report Output



INVENTORY SUMMARY REPORT

This report provides output for all inventoried items in the system.

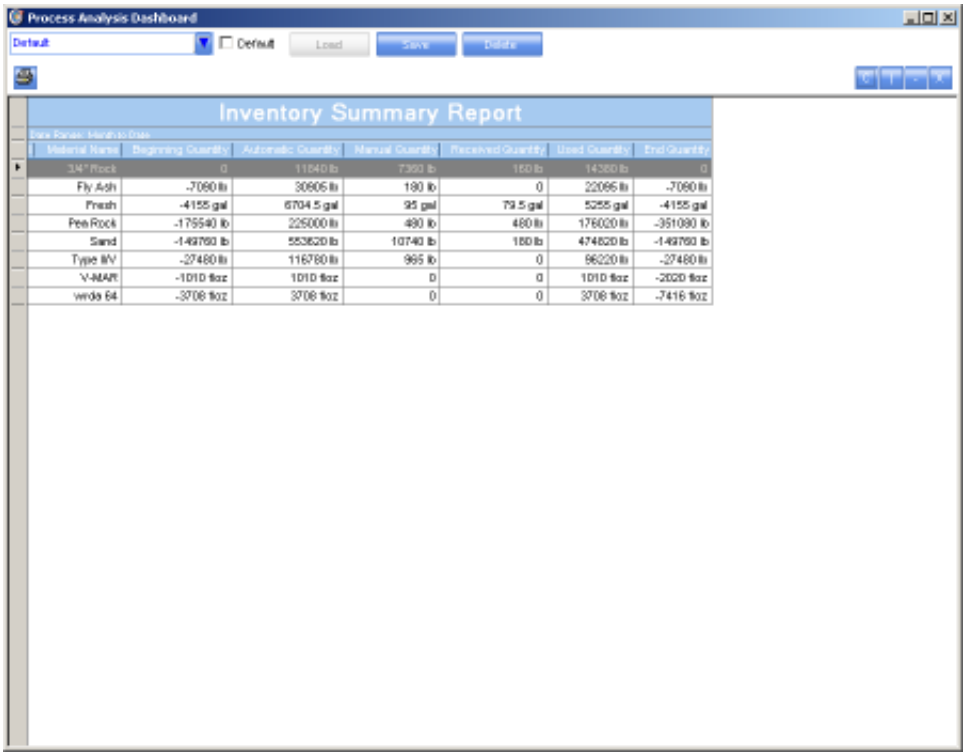
Report Inputs:



The report contains various filtering criteria to track inventory usage, receipts and balances. The filtering parameters include:

- Date Range
- Vendor

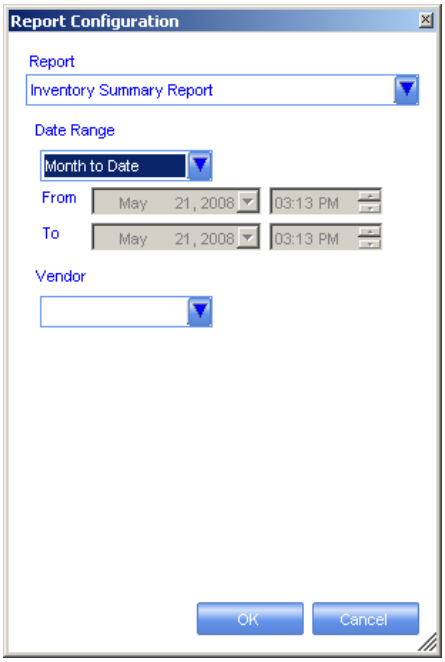
Report Output:



MATERIAL RECIEPT REPORT

The Material Receipt Report shows all receipts for inbound materials into the Archer batch system.

Report Input:



The report contains various filtering criteria to track a material receipts. The filtering parameters include:

- Date Range
- Vendor

Report Output: