

Optimizing Over Time Plots via Analytics

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The typical practice of generating time series and mean measurement over time plots is by using PROC SGPLOT and GPLOT in SAS®. Even though these are extensively used and known procedures, it is challenging and tedious for the end users to review these static outputs which are non-interactive in nature. With the help of analytic tools, SAS® and TIBCO Spotfire®, we can generate highly customizable and web-based plots which allow the end users to interact dynamically with real-time data and to efficiently analyze the results. Also, the corresponding data tables and listings can be generated within Spotfire and can be exported as csv, pdf or ppt for manual review, significantly reducing the review time and to make decisions effortlessly

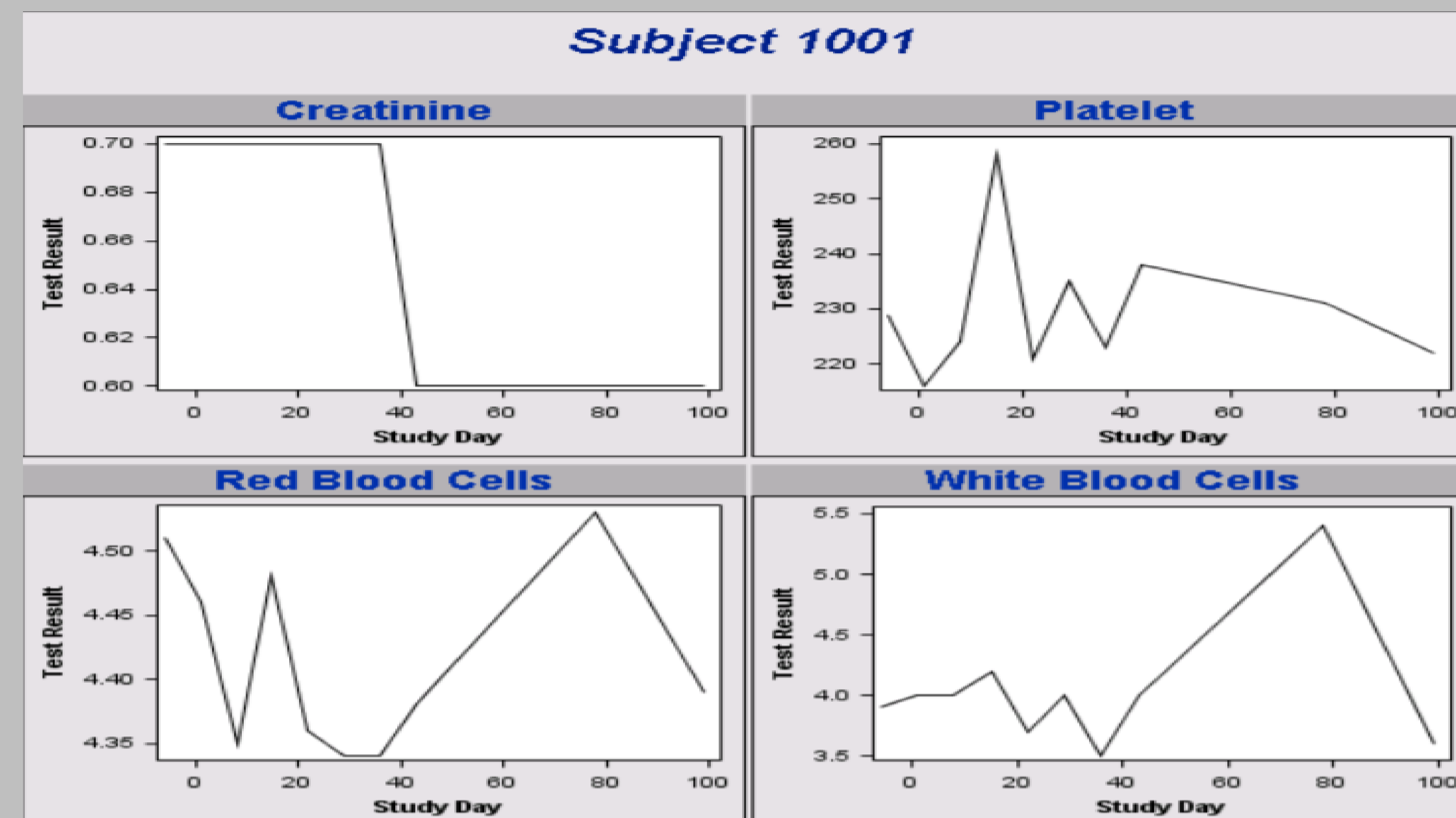


Figure 1: Lab Overtime Plots using PROC SGPLOT in SAS®

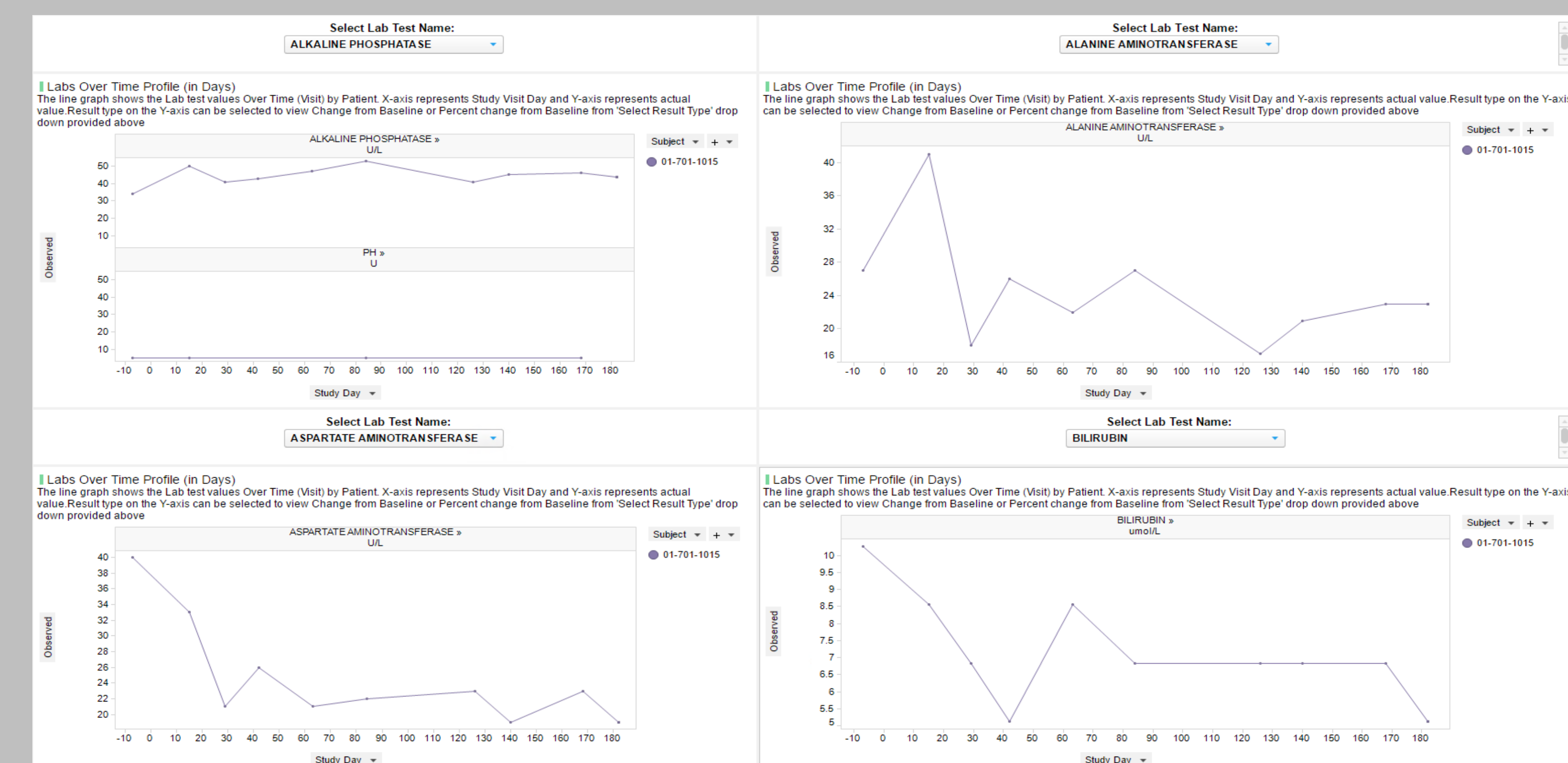


Figure 2: Lab Overtime Plots using SAS® and TIBCO Spotfire® from our VDS Data Analytics Instance

Figure 1 shows the static output of overtime plots for different lab parameters. Whereas figure 2 shows the interactive nature of overtime plots with an option to select the lab parameters of interest for a subject, allowing the end user to efficiently analyze the results across multiple parameters.

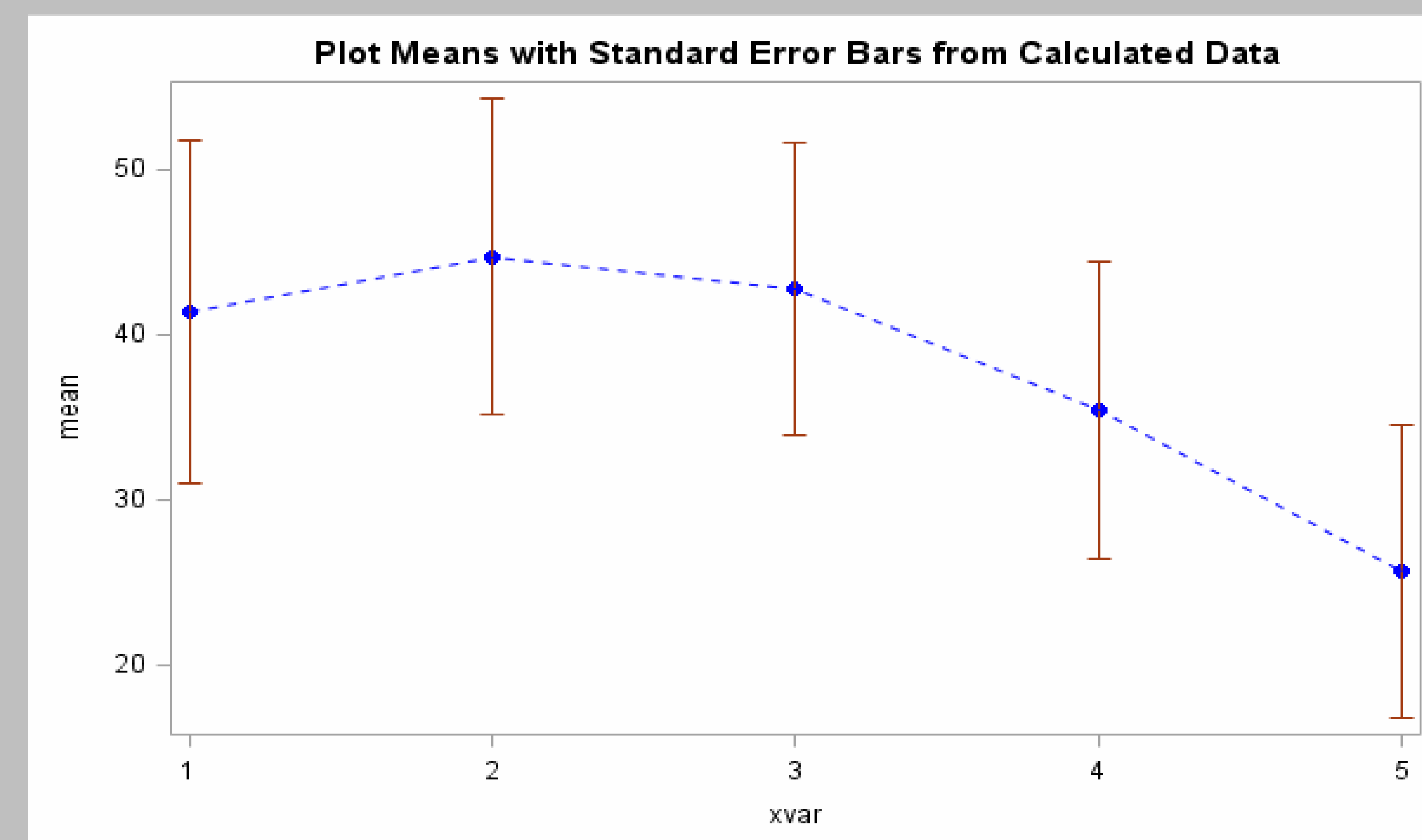


Figure 3: Means Plot with Standard Deviation using PROC SGPLOT in SAS®



Figure 4: Screen shot of Lab Test Mean +/- Standard Deviation plot using SAS® and TIBCO Spotfire® from our VDS Data Analytics Instance

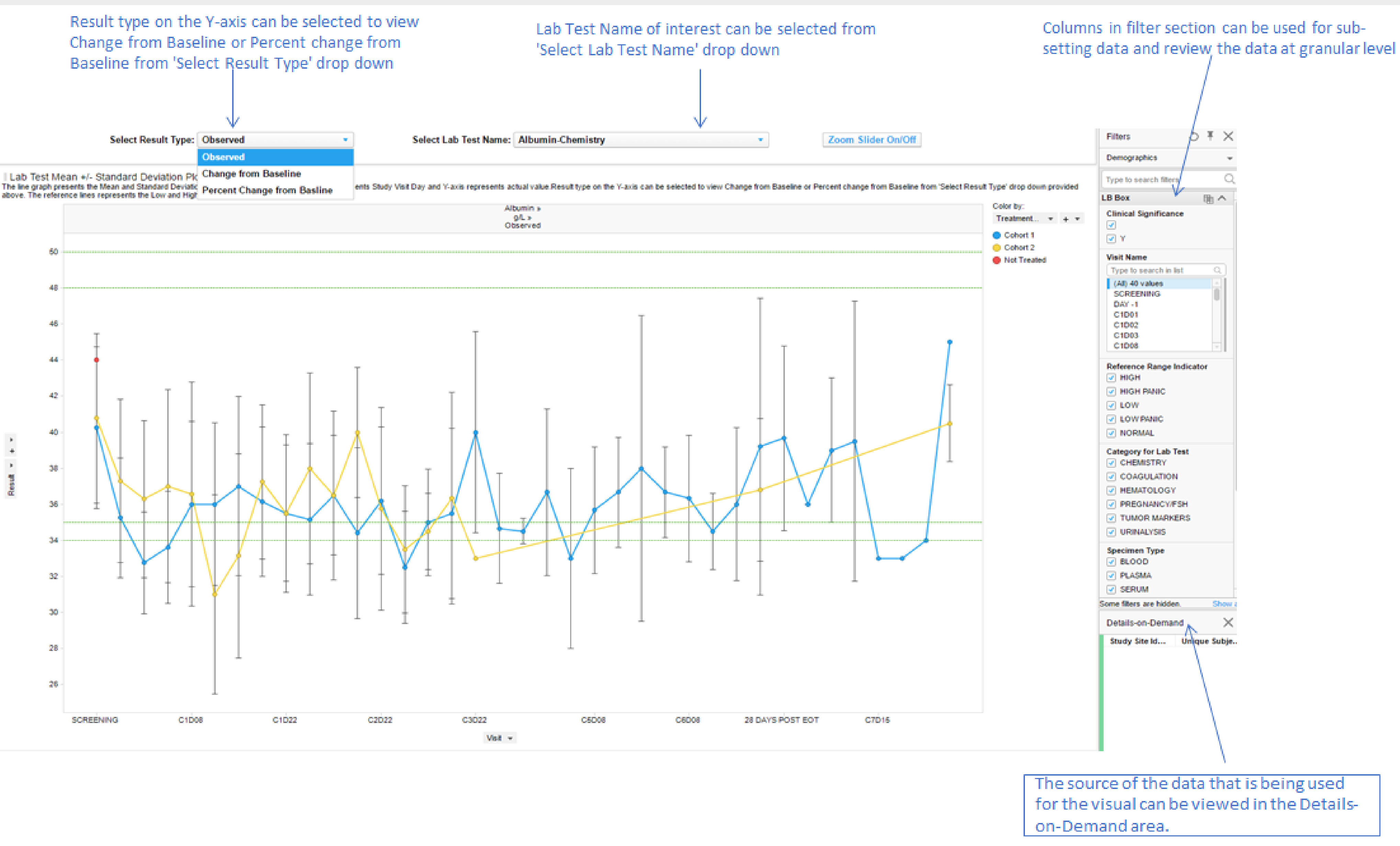


Figure 5: Screen shot of Screen shot of the Lab Test Mean +/-Standard Deviation plot from our VDS Data Analytic instance - annotated to show how one can select pre-defined data filters to only display value of interest

The source of the data that is being used for the visual can be viewed in the Details-on-Demand area. Figure 7 shows the Details-on-Demand panel presenting the underlying source data of the visual in Figure 6. When a particular data is marked in the visual then all the rows of the data of that part will be presented in the Details-on-Demand panel. This functionality can also be used to drill down into specific details and the data rows can be exported to excel sheet. In this example, a data listing of lab results with high reference ranges are presented which can be exported into CSV for internal review and communication.

Details-on-Demand													
Study Site Id...	Unique Subje...	Category for ...	Specimen Type	Specimen ID	Lab Test or E...	Lab Test or E...	Character Re...	Numeric Res...	Standard Units	Reference Ra...	Reference Ra...	Reference Ra...	Reference Ra...
101	101-10108	CHEMISTRY	SERUM	AU63571	CL	Chloride	110	110.00	mmol/L	102.00	109.00	102 - 109	HIGH
101	101-10108	CHEMISTRY	SERUM	AU63580	CL	Chloride	110	110.00	mmol/L	102.00	109.00	102 - 109	HIGH
101	101-10108	CHEMISTRY	SERUM	AY36410	CL	Chloride	112	112.00	mmol/L	102.00	109.00	102 - 109	HIGH
101	101-10108	CHEMISTRY	SERUM	AX84027	CL	Chloride	113	113.00	mmol/L	102.00	109.00	102 - 109	HIGH

Figure 7: Screen shot of the Details-on-Demand window displaying underlying source data based on the marking on the Lab Test Mean +/-Standard Deviation page - restricted to display High Range Lab Test Mean Values based on the selection of a data filter