

MSC-LIMS™ *Insights*

The source for news and tips of interest to users of MSC-LIMS,
an affordable laboratory information management system for small labs.

Issue No. 20

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Welcome

Welcome to **MSC-LIMS Insights**.

This newsletter will help current MSC-LIMS users get the most out of their software, and will complement the product literature and demo that prospective users can find on our web site at www.msc-lims.com.



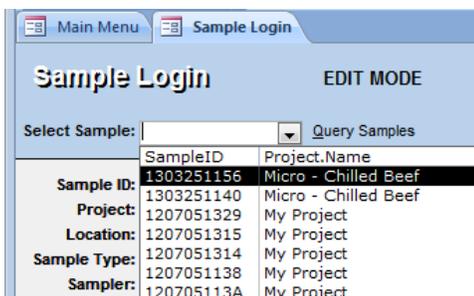
Join our mailing list for more information. Sign up at www.msc-lims.com/lims/maillist.html.

This newsletter is for and about MSC-LIMS users. We welcome your comments, and your suggestions for topics you would like to see addressed in upcoming issues. Please send your thoughts to newsletter@msc-lims.com. 

Populating Sample Pick Lists

Pick lists to select a single sample exist in several MSC-LIMS screens including Sample Login and the Results by Analyte and Results by Sample setup screens. These pick lists are designed to provide quick access to recently logged samples.

When you click the pick list's dropdown arrow or use Alt+Down Arrow, MSC-LIMS lists recent samples in reverse chronological order. The number of samples included in the pick list is governed by a setting on the Workstation Configuration screen. Use the Populate Sample List option on the Settings tab of the Workstation Configuration screen to specify how many samples to list for the current workstation. Choose a setting that will present the most recent samples in a timeframe frequently used while minimizing the amount of samples the LIMS must retrieve from the database.



For example, with the Two Weeks option shown below all samples logged in the last two weeks will be listed when the pick list is expanded. Smaller timeframes are more efficient with a large LimsData database containing tens of thousands of samples.

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From the Developer

The ranks of MSC-LIMS users continue to swell and we can now count installations in countries from Australia to Zambia. Our Annual Subscription license is indeed a popular choice. While business reasons for customizing will always remain for some, many users have found that importing and exporting data, instrument interfacing, and creating custom reports, invoices, and labels are all easily accomplished using MSC-LIMS' integrated Excel interface – all available in the subscription version. For a case in point see "Create Custom Container Labels with Excel" in this issue.

Many believe that an affordable one-size-fits-all system would be difficult if not impossible. Therefore, finding a LIMS that meets 80 percent of your requirements is a sign of a good fit if you can customize the remaining 20 percent. Many of our Annual Subscription licensees have proven that the necessary customization can be limited to Excel templates. I am delighted to see their success and pleased the Excel interface has proven so popular.

Finally, if you have been waiting to upgrade to MSC-LIMS version 4.0 there may be little reason to wait any longer. Only minor issues have been uncovered since version 4.0's release in November 2012 and they have been fixed. If you are planning to move to Windows 7 or 8, the performance problem with MSC-LIMS 3.x attributable to these operating systems is a compelling reason to upgrade. All Annual Subscription licensees and Full System licensees with current Annual Maintenance are entitled to the upgrade.



Rick Collard is the founder of Mountain States Consulting, LLC and the principal developer of the MSC-LIMS software. You can reach Rick by email at rcollard@msc-lims.com.

Create an Invoice Summary Report

If you produce invoices in MSC-LIMS 4.0 with an Excel template and you enable the template's option to save the invoice number and date to the LIMS, you can create a simple invoice summary user-defined report (UDR) to track invoiced samples.

Beginning with MSC-LIMS version 4.0 all samples have optional invoice number and invoice date fields. If you created your Excel invoice template from one of the example invoice templates, enable the "Save Invoice# in LIMS" option on the Settings worksheet and the invoice number and date are automatically saved to each LIMS sample when you use the [Print and Update Last Invoice#] button on the Invoice worksheet.

For example, perhaps you need a list of all samples for a specific customer invoiced this month, or samples for a specific sample type or project, or samples including a specific analyte. Once the UDR is created you can generate it at any time using any query criteria to find the samples of interest.

Below, we will create a simple invoice summary UDR so you can generate a list of invoiced samples

matching your query criteria. To create the UDR, begin by selecting the Define Report option on the Samples menu. Enter a Report Name, select a Sort By option such as Sample ID, then select the "Sample ID, Customer (portrait)" template, which will list the sample ID and customer name in the report's fixed columns.

Next, add three user-defined columns on the Columns tab as follows:

Col:	A
Units:	Invoice
Expression:	=[Invoice]
Col:	B
Units:	Invoice Date
Expression:	=[InvoiceDate]
Col:	C
Units:	Sample Total
Format:	Currency
Expression:	=DSum("Cost","SampleAnalysis", "SampleID = '" & [Sample.SampleID] & "'")
Statistics:	Sum

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For columns A and B you can pick the Expression from the pick list. To ensure correct syntax, copy column C's expression above then paste into the Expression field.

Use the Generate Report option on the Samples menu to test your report. Enter any query criteria to find the samples you want to list on the report and enable the Invoiced option on the Additional tab of the query controls to limit the query to samples that have been invoiced. Since this UDR does not include any analytical results, enabled the All Samples Queried option to list each sample queried on the report. Below is an example report.

		Invoice Report		
Sample ID	Customer	Invoice	Invoice Date	Sample Total
1007010001	M.S.C.	10753	7/22/2013	\$100.44
100707K001	M.S.C.	10754	7/22/2013	\$17.73
100707K002	M.S.C.	10754	7/22/2013	\$17.73
100707K003	M.S.C.	10754	7/22/2013	\$17.73
Sum:				\$153.63

To find all samples invoiced within a date range, enter the following expression on the SQL tab of the query controls:

```
InvoiceDate Between #7/1/2013# AND #7/31/2013#
```

If you invoice by sample batch, note that this UDR will list each sample's total rather than an invoice or batch total. 

Create Custom Container Labels with Excel

MSC-LIMS includes four container label styles to print sample container labels at sample login. All four label styles are sized to fit 30252 (1" x 3.5") address labels on inexpensive Dymo LabelWriter printers. Two of the four label styles include a sample ID barcode.

Users with an MSC-LIMS Full System license can design and add custom label styles for alternate label sizes and content with a simple customization. The process is described in the MSC-LIMS Programmer's Guide and requires only basic experience with the Microsoft Access report generator.

With an MSC-LIMS Annual Subscription license, label changes are limited to altering the contents of fields in any of the four label styles. But what if you want to change label fonts, sizes, or field widths, use smaller or larger labels, or list a sample's analyses on a label, for example? For those using an annual subscription license, an Excel template is a viable solution. Excel template labels cannot automatically print during sample or batch login like integrated label styles. However, you can generate and print custom labels after sample login by simply exporting a LIMS report.

You can create your own labels for any size label stock and label printer. First install the Windows printer driver for your selected printer on the LIMS workstation. In the example below we will make our own version of a larger label for Dymo's 30256 (2.3" x 4") shipping label.

Begin by downloading the [Excel Container Label Examples](#) from the [File Library](#). Extract the example templates from the zip file and save them in your Excel export templates folder, which you will find listed on the Folders tab of the Workstation Configuration screen on the Admin menu. Copy the example "Container Labels - Dymo 30256 Shipping.xlt" template to a new file, then rename the file "My Container Label.xlt."

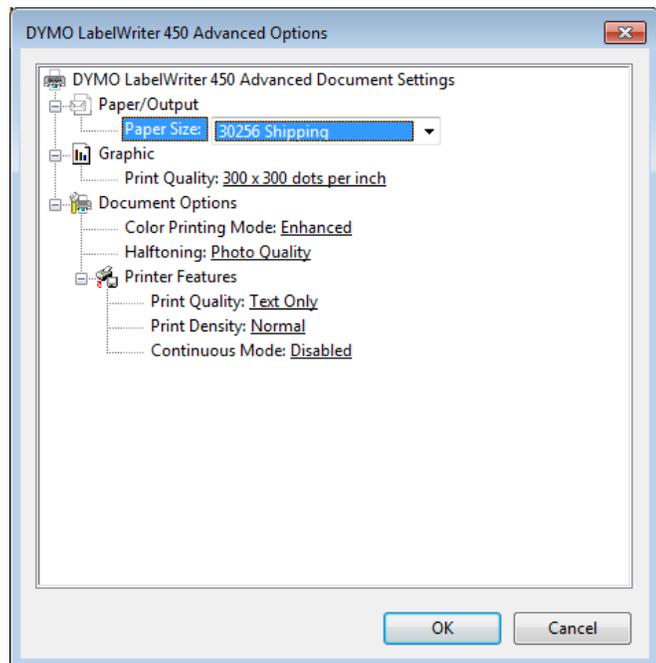
While Excel can save a worksheet's paper size with a workbook or template, this only works well with the paper sizes for your default printer. Since your Windows default printer is unlikely to be your label printer, it is best to configure the label size with the label printer's properties. Right-click the label printer in Windows' list of printers, select Printing Preferences, then set the paper size to your chosen label stock. The layout of the printing preferences screen is specific to the chosen printer.

The screen below shows the paper size set using the [Advanced...] button on the Dymo LabelWriter 450 Printing Preferences screen. Use the [OK] button to save your selections.

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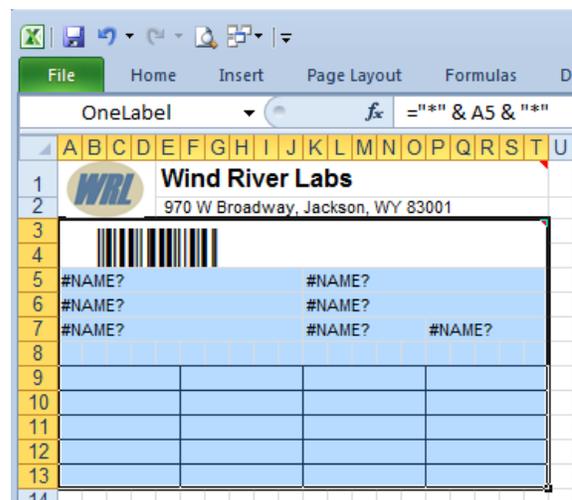


Right-click your new My Container Label.xlt template and select Open to access the template itself (remember, double-clicking a template in Windows Explorer does not open the template file; rather it creates a new workbook from the template). Alternatively, open the template file within Excel. See the template's Read Me sheet for more information on the template's operation.

Let's review how this template is constructed. The first two rows on the Labels worksheet are designated title rows using Page Setup and will repeat on each label. Using repeating title rows is a good way to include an image, such as our example's logo, on the top of each label. Select the OneLabel name from the Name box to view the cells that comprise the variable portion of each label. The template's AfterTransferFromLIMS macro automatically copies the OneLabel named range to cells below, once for each sample exported from the LIMS, inserting a horizontal page break before each copy. The image below shows the selected OneLabel named range.

The dimensions of a Dymo 30256 shipping label are 2.3" by 4" so this template has sufficient room to display a sample's analyses. Our example uses five rows with four analytes per row. The formulas to display analyte names look up the Nth analyte for the label's sample ID on the AnalysisData sheet. If the

sample does not have an Nth analyte, an empty string is listed.



The remaining formulas, which show #NAME? errors, retrieve a specific LIMS field value for the sample from the LimsData worksheet. The formulas use named ranges that will not exist until they are created by the AfterTransferFromLIMS macro using the LIMS field names. That is, the formulas will not result in errors after we export a LIMS report to the template. Review the formulas showing #NAME? errors and you will see they all have the following format:

```
=INDEX(fieldname, (ROW() - ROW(OneLabel)) / ROWS(OneLabel) + 1)
```

Where *fieldname* is the MSC-LIMS field name. The formula above retrieves the Nth value in the specified named range for the current label.

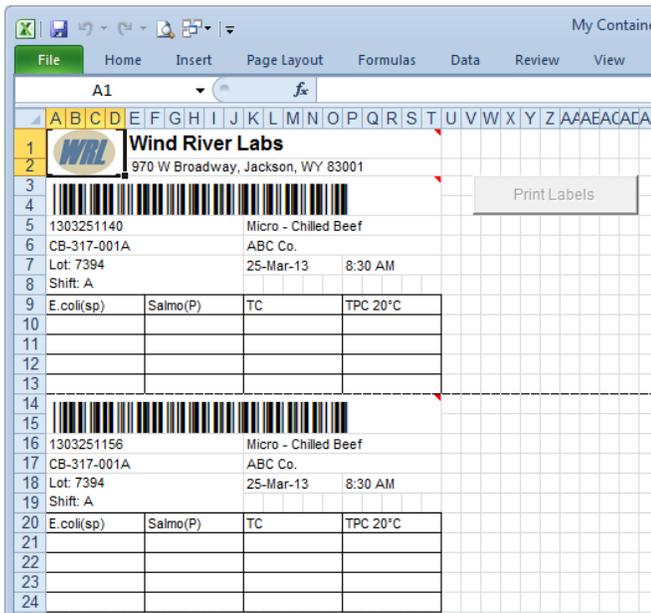
The template currently includes formulas to display the sample ID, project, sample type, customer, location, collected date, and collected time. Let's modify the label and replace the sample type and location with the customer's sample ID and a two-line sample description. Select cell A6 and replace "SampleType.Name" in its formula with "CustomerSampleID". Select cell A7 and replace "Location.Name" in its formula with "Description" then unmerge the cell, select cells A7:J8 and merge to create a two row cell. Right-click the new merged cell, select Format Cells, set horizontal alignment to Left, vertical alignment to Top, and then enable text wrapping.

Close the template saving your changes.
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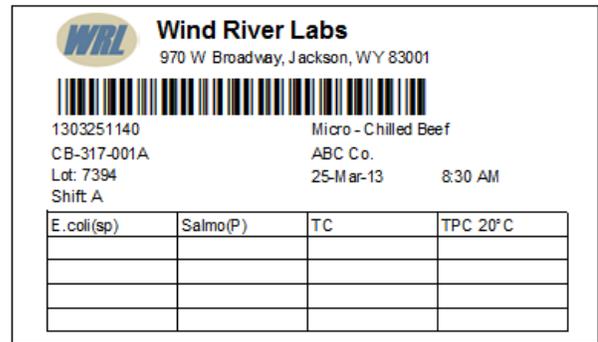
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If you reviewed the template's Read Me sheet, you will recall this template is designed to be used with the Work Order report on the Samples menu. To try your new template, preview a multi-sample Work Order report, use File | Export to MS Excel Template or the equivalent toolbar button and select the new My Container Label template. The resulting Excel workbook created from your template will show one "page" or label per sample exported as shown below. This is a good time to view the available data and field names on the LimsData sheet and experiment with formula and layout changes on the Labels sheet using real LIMS data. When you are satisfied with any changes you can duplicate the modifications in your template.

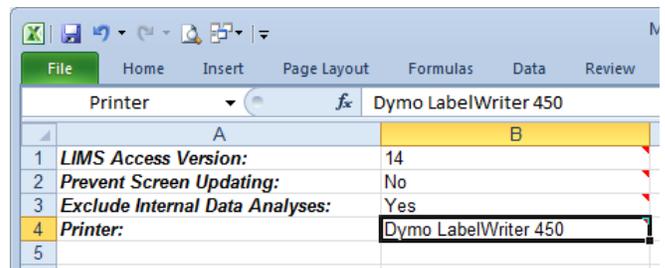


When copying a named range in Excel, the destination cells do not inherit the row heights of the source cells. A more elaborate AfterTransferFromLIMS macro could add this capability but, for simplicity, our example does not. For this reason, the height of all rows in the OneLabel named range and all remaining rows in the worksheet are the same. If you alter the row height or insert new rows in the OneLabel range, you should verify your new page will fit on a single label. Simply select your label printer and the default paper size you previously set is automatically selected. Then use

Excel's print preview feature and you can easily verify whether each page fits on a single label using the print orientation and margin settings configured in your template's page setup. When you close print preview you will see page breaks in the Labels sheet for your selected printer and paper size. Below is a preview of a label from our new template.



Finally, so that you do not have to select the printer each time you print labels with your new template, add the printer name to the Printer option on the template's Settings worksheet as shown below. When you export a Work Order report, the template's AfterTransferFromLIMS macro will enable the [Print Labels] button on the Labels sheet if a printer is included on the Settings sheet. Simply click the [Print Labels] button to print the labels to your designated label printer.



Now you can create any number of custom container label templates for any label printer and label size, for daily use or special projects. Full System licensees may also find the convenience of Excel-based labels a handy addition to their collection of Excel templates.



Notes from Technical Support

New User Login Account Fails

We frequently receive reports that a new user login account, added in the Users screen on the Admin menu, only works on one LIMS workstation and is unrecognized on other workstations. Adding the login account again at another workstation appears to solve the issue. This problem identifies an incorrect installation configuration.

In a multi-user MSC-LIMS installation, both the LimsData database and the LimsUser workgroup security file are shared by all workstations. The first time MSC-LIMS is started at each workstation, the LimsData database is selected. Since the LimsUser workgroup security file issues the login prompt at startup, its location must be known before MSC-LIMS is started. The location of the LimsUser file is embedded in the MSC-LIMS shortcut using the LimsData location specified during software installation.

If you overlook selecting the LimsData database's folder during MSC-LIMS installation at any workstation, the software will install the LimsUser workgroup security file in the default C:\MSC-LIMS folder, which means the workstation is not using the same LimsUser file as other workstations.

You can easily diagnose this problem. At each LIMS workstation, open the System Configuration screen on the Admin menu then select the System Info tab. Note the location of the Workgroup file listed. All workstations should be sharing the same LimsUser file located in the same folder as the LimsData database.

To correct the problem at a specific workstation, right-click the desktop shortcut used to start MSC-LIMS, choose Properties, and then edit the location of the LimsUser file in the Target property. Repeat the Target property edit for each option on the MSC-LIMS menu on the Start button's All Programs menu that includes the MSC-LIMS icon. Alternatively, you can uninstall MSC-LIMS then reinstall being sure to select the LimsData database's folder. 

Use a Project to Save Control Chart Lines

Recently, we received the following question:

I was trying to make my control chart for one analyte. Usually we do a number of tests to collect statistical data and then based on these values the min max lines are plotted on the QC chart. ... How am I supposed to do this properly?

Since the Control Chart Setup dialog allows you to use the analysis' specifications (result min/max, warning min/max, target) to specify the chart's control and warning high/low and target lines, you can use this feature to set the lines for your chart. After you have calculated the control high/low values, create a new project whose only purpose is to store these values. Add the analyte to the project then add the control high/low values to the Result Max and Result Min fields for the analyte. Add each additional analyte for which you will create control charts.

To generate your control chart, first select the analyte in the Control Chart Setup dialog then toggle the Rmax and Rmin buttons adjacent to the Control High and Control Low fields in the Control Chart Setup dialog (the state of the buttons is preserved). Now enable the Project option under "Use Analysis Specifications" then select the project you created above and your Result Max and Result Min values for the analyte are automatically inserted in the Control High and Control Low fields. Enter query criteria to locate the analyses to chart then preview the chart. Note that you can also export the control chart to one of the example Excel control chart templates if you want more control over the chart's appearance.

Note that the project you create to save the control high/low values for each analyte you will chart is only used to store these values in the project setup screen. No samples should be logged for the project and you should name the project appropriately so you know its purpose. 

Prevent Samplers and Technicians from Adding or Editing Locations

A user recently sent this question:

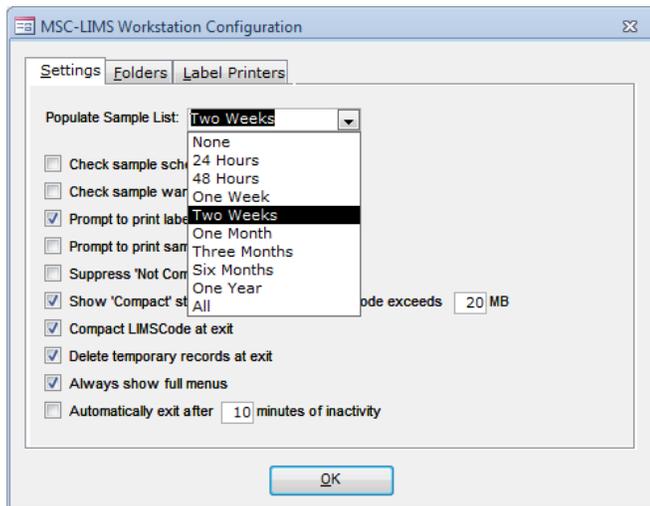
One of my analysts has been overwriting locations when she goes to add a new location in LIMS, and I just realized it today when a customer asked for some 2012 data. ... Is there a way to allow her to log in the samples, but not to add or modify locations? Can you get that specific with the privileges?

Only members of the Admins security role have permissions to add and edit data in screens on the Setup menu. However, the Locations screen is one exception. Members of the Samplers and Technicians security roles can add and edit locations. You can remove that permission with a simple change.

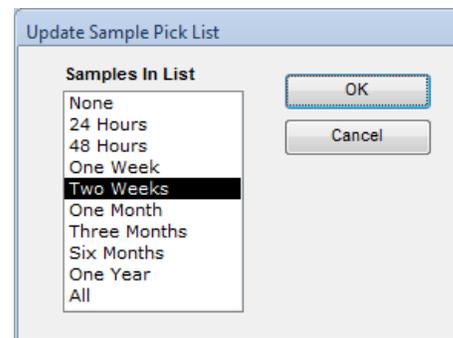
Log on using the LimsAdmin account and open the System Permissions screen on the Admin menu. Click the LimsData tab and change the Samplers and Technicians permission on the Location table from 116 to zero. Close the screen and apply your change. ▲

Populating Sample Pick Lists

(Continued from page 1)



The populating option that is best for your lab will depend on the size and location of your database and how often you use the pick lists. For best performance, choose the smallest timeframe that will be most useful for you.



Any time you need to select a sample that is older than your workstation's default populating mode, simply double-click the pick list (or right-click and select Update Sample List) and select a one-time populating option from the Update Sample Pick List popup. Most LIMS screens with a sample pick list also include options to query samples, which you can use to find older samples. However, quickly repopulating the pick list is a handy alternative. ▲

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For Customers Only

This section of *MSC-LIMS Insights* is devoted to current users of MSC-LIMS. Here we briefly introduce only the most recent additions to MSC-LIMS.com Customers Only pages. Use your login name and password to log on to the Customers Only section of our website.

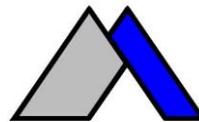
File Library

[Excel Container Label Examples](#)

Create your own custom sample container labels for any label size and label printer by copying and modifying one of these example templates. See this month's feature article "Create Custom Container Labels with Excel" for more information.

Contact Us

Questions, comments, suggestions?
Reach us at:



Mountain States Consulting, LLC
970 West Broadway #471
PO Box 30000
Jackson, Wyoming 83002 USA
Ph +1 307-733-1442
Fax +1 303-379-6850

info@msc-lims.com
www.msc-lims.com

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