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.

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.

What's Coming in Version 6.0

We expect to release MSC-LIMS version 6.0 sometime during 2022. All version 5.0 annual subscription licensees and all full system licensees with current annual maintenance will be able to upgrade to version 6.0 at no additional cost. Full system licensees with customized systems will incur a nominal cost to port their customizations. Version 4.x annual subscription licensees will also have an upgrade path to version 6.0.

Since new installations of Microsoft Office now default to the 64-bit version, MSC-LIMS 6.0 will also be a 64-bit application and will require Microsoft Access 2016/2019/365. MSC-LIMS will no longer automatically install a runtime version of Microsoft Access. However, runtime versions of Microsoft Access 2016/2019/365 are available free from Microsoft for those with a version of Office that does not include Access.

In place of the menus and tool bars used in previous versions, MSC-LIMS 6.0 will adopt the newer ribbon interface of Microsoft Office applications. Like MSC-LIMS 5.0, version 6.0 uses a SQL Server back end database. Users of MSC-LIMS Messaging 6.0 will no longer require Outlook.

Look for more information about version 6.0 in future issues of this newsletter.

In this Issue

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From the Developer

MSC-LIMS' Excel interface first appeared in version 2.0 back in January 1999. Since then, the ability to export and import data to and from Excel has become an indispensable tool for most MSC-LIMS users. And many prospective users are pleased to learn that their existing Excel report workbooks are easily converted to templates so they can be used with MSC-LIMS.

If you are new to MSC-LIMS or haven't already explored the Excel interface, this issue has a very good introduction to reporting LIMS data with Excel export templates. Even if you already use Excel export templates, see "Getting Started with Excel Template Reports" for a better understanding of the process.

In a future issue of MSC-LIMS Insights, we will explore logging samples and importing analysis results from Excel data. In the meantime, explore the Excel Interface in the Demo section of our web site for a good overview and examples.

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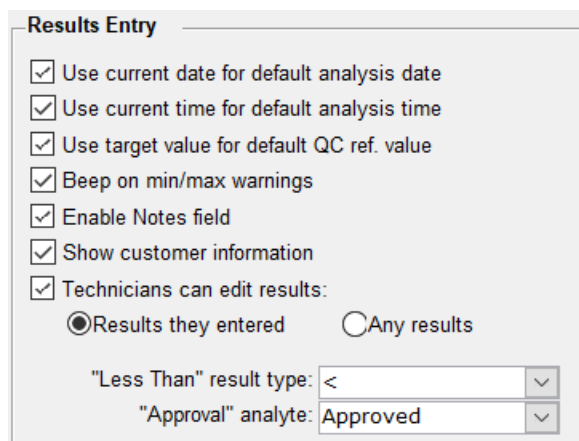
Sample Approval by Specific Users

Many labs need the ability to approve sample results. Some will need a record of who approved the results and when. And labs using MSC-LIMS Messaging to automatically email sample results need to ensure the results are approved before sending final reports to clients.

In MSC-LIMS, it is easy to configure sample approval for specific or all samples. First, create an "approval" analyte with results entry limited to a "Yes" result type and enable its "Admin privileges required for results entry" option.

Next, select your approval analyte on the Data Entry tab of the System Configuration screen as shown in the screen excerpt below, which enables querying unapproved samples. An unapproved sample is a sample whose only incomplete analysis is the approval analyte. Finally, add the approval analyte to all LIMS projects whose samples require approval.

To approve samples, open the Results by Analyte setup screen, select the approval analyte, and then query unapproved samples using the check box on the Additional tab of the query controls. In the Results by Analyte screen use the Sample Summary option to view all results for each unapproved sample. To approve the sample, enter a "Yes" for the approval analyte's result type.

In many cases, limiting sample approval to only users in the Admins security role is sufficient. But what if you need to restrict approval to just specific users who

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may or may not be an Admin? In that case, you can use MSC-LIMS' ability to limit results entry to users certified in the analyte's method.

First, create a new "Sample Approval" method and add each user authorized to approve samples to the method's certification section as shown below.

Next, add the method to the existing approval analyte and enable the analyte's "Method certification required for results entry" option. If non-Admins will also be approving samples, disable the approval analyte's "Admin privileges required for results entry" option.

Use this simple method certification technique to configure exactly which LIMS users can approve samples. ◣

## Getting Started with Excel Template Reports

If you are a new MSC-LIMS user or new to Excel-based reporting with MSC-LIMS, this article will get you started using Excel templates. MSC-LIMS includes many internal system reports such as the Analyte Comparison, Sample Summary, Work Order, and Invoice reports. While these system reports are valuable tools, you may need to control the appearance of the reports you use to display your LIMS data. In this case, Excel template-based reports are your solution.

With your initial MSC-LIMS installation, MSC-LIMS installs a number of example Excel templates that you can copy and modify to create your own reports. On each LIMS workstation, you will find the example templates in folder 'C:\MSC-LIMS\Examples\Excel Export Templates'. Newer templates may exist so always check the File Library in the Customers Only section at msc-lims.com for recent additions.

Generating an Excel-based report only requires previewing a system report then exporting its data to the selected Excel template. The underlying data for any system report can be exported to Excel. However, most example Excel templates are designed for, and therefore expect the data from, a specific system report. For example, most of the example final report templates expect data from the Sample Summary report.

Before you can export a LIMS system report's data to Excel, you must first tell the LIMS where your Excel

export templates are located. Use the Folders tab on the Workstation Configuration screen on the Admin menu to specify your Excel templates folder. In a new installation the export templates folder will be blank so begin by using the Browse button and selecting your workstation's 'C:\MSC-LIMS\Examples\Excel Export Templates' folder as shown below. Note that Admin privileges are required to make changes on the Workstation Configuration screen. In a multi-user MSC-LIMS installation, all workstations should use the same Excel templates so later you should copy all of your export templates to a file server folder and update the Workstation Configuration screen on each LIMS workstation.
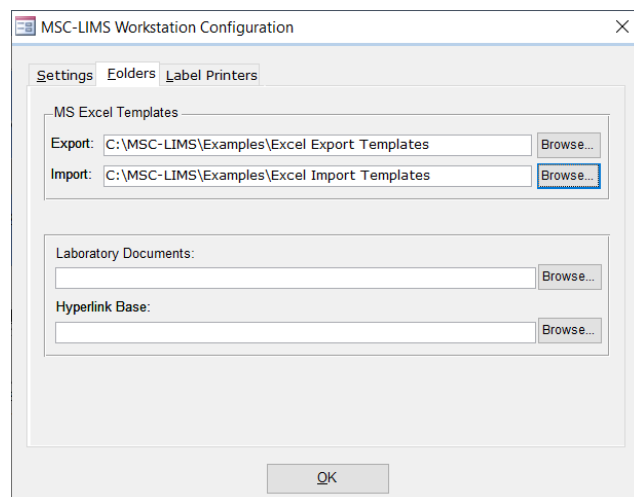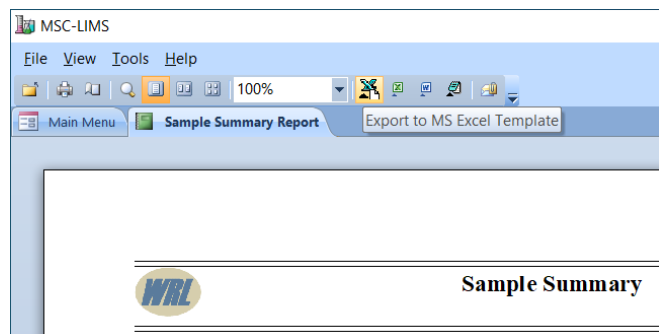
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Let's assume your first goal is to create a final report template that you will use to report results for most lab samples. Begin by querying two or more samples and previewing a Sample Summary report. Click the File menu and select 'Export to MS Excel Template' or use the equivalent toolbar button shown below.

Now select a template from the list of example templates and click the OK button. Begin by selecting one of the CofA example templates. Although you have queried, previewed, and exported a multiple-sample Sample Summary report, the CofA examples are single-sample templates so the resulting report will list only the first sample exported. Close the Excel workbook without saving then repeat the export selecting any of the Final Report example templates.
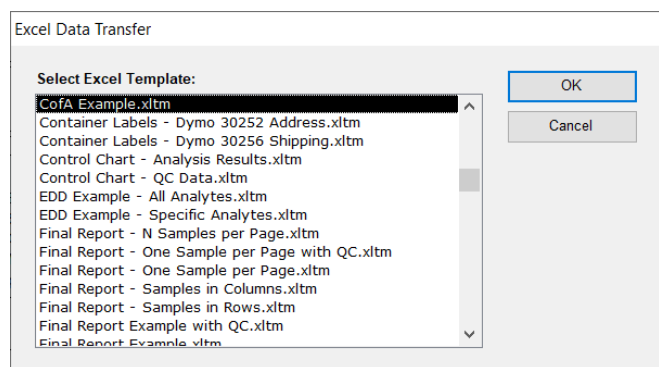
The screen below shows the results of a Sample Summary report exported to the 'Final Report Example' template.

Repeat the Sample Summary report export until you find a 'CofA' or 'Final Report' example template that produces a report with an architecture you like. Now make a copy of your preferred template and rename the file accordingly.

To open your new template file for editing, either right-click the file and select Open from the popup menu, or open the file within Excel. Note that double-clicking an Excel template does not open the XLT or XLTM file; rather it instructs Excel to create a new workbook from the template.

After you open your new template, begin by reviewing the Read Me worksheet, which includes notes on the template's operation. Next, review the options on the template's Settings worksheet by hovering your mouse over each commented cell. If the Settings sheet includes a 'RemoveInfrastructure' option, you will find it helpful to disable this setting until you are finished updating and testing the template. Leaving all infrastructure worksheets will allow you to explore the LIMS data available for display on your report.


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When you export a system report's data to Excel, MSC-LIMS will perform the following tasks:

1. Start Excel if it is not already running
2. Instruct Excel to create a new workbook from the template you selected
3. Run the new workbook's BeforeTransferFromLIMS macro
4. Write the system report's underlying data to the new workbook's LIMSData worksheet
5. Run the new workbook's AfterTransferFromLIMS macro

An Excel macro contains Visual Basic for Applications (VBA) programming code to perform specific tasks. The BeforeTransferFromLIMS macro in most example templates is empty. However, the AfterTransferFromLIMS macro normally has many VBA statements to perform specific tasks to generate the final report. The notes on the template's Read Me sheet may describe some of these tasks. If you are adventurous, you can explore the macro's VBA code and review its green comment lines to better understand the macro's operation.

Now switch to the first or report worksheet in your template where you will see the images, labels, and formulas that produce the report. The image below is an excerpt of the Report worksheet from the 'Final Report Example' template.
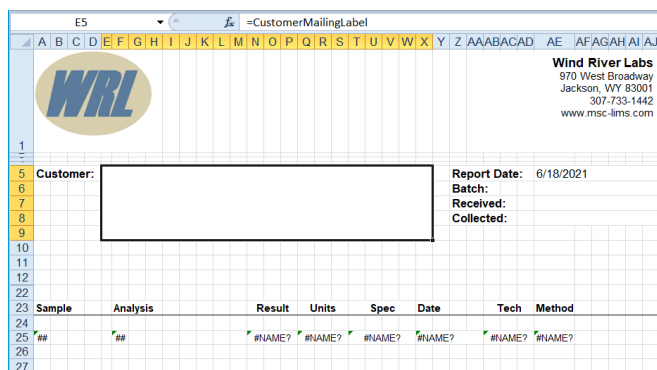

The formula in merged cell E5 above demonstrates the use of an Excel named range, a user-defined name given to one or more cells. Use the Name box shown below to view and select named ranges in the template. Selecting the CustomerMailingLabel name will show the cell or cells on the Customer worksheet that comprise the named range. You will find it more helpful to select the CustomerMailingLabel name in a

workbook created by exporting to the template so you can explore the data available on the Customer worksheet.
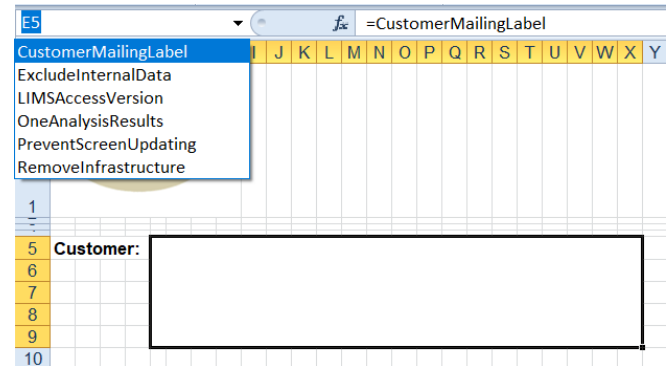
As shown below, you can also use the Name Manager on the Formulas tab in Excel to view and modify the named ranges in the template. In this template, note the cells that comprise the OneAnalysisResults named range.
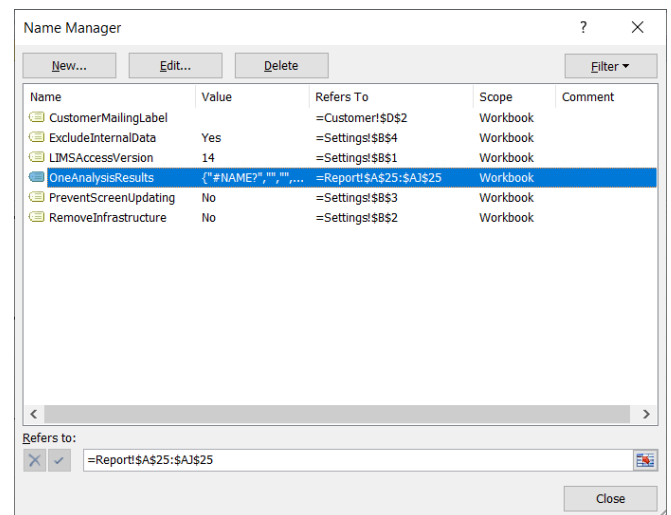
Selecting OneAnalysisResults from the Name box highlights the cells in this named range. The template's Read Me worksheet notes that the AfterTransferFromLIMS macro will insert one new row below then copy the OneAnalysisResults named range once for each sample analysis exported from the LIMS (i.e. for each data row on the AnalysisData worksheet). With this knowledge, you can move or expand the named range and modify the cells within to alter your final report.

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In most example templates, the AfterTransferFromLIMS macro automatically creates named ranges for all the data obtained from the LIMS using the LIMS field names. After exporting to your template, you will find all of the new named ranges listed in the Name box in the resulting workbook. The formulas in the OneAnalysisResults named range above use the named ranges to display report data. Since the names will not exist until the AfterTransferFromLIMS macro creates them in the new workbook, the formulas show the #NAME? error only in the template.

The best way to make changes to template formulas is to create and test the changes within a workbook created by exporting to the template since the workbook will have data and all of the named ranges. Once the new formula is working properly you can copy it to the template. For example, if you prefer to see the analyte name and its units in a single cell, edit the formula in the workbook until it produces your preferred result. The screen below shows an example in cell F25.

Next, select and copy the edited formula from the Formula Bar in the workbook as shown below. Open the template and paste the formula into the template's cell. It is important to copy and paste using the Formula Bar since copying and pasting the cell will create a link from the template to the workbook.

Test other formula changes and additions and explore the available named ranges by viewing the contents of the Name box or by reviewing the LIMS field names on row one of the available data worksheets such as LIMSData and AnalysisData.

Use these techniques with copies of any of the example Excel export templates to get started creating your own reports to present your LIMS data.

Notes from Technical Support

Work Load Report

A user recently asked:

If I wanted to generate a report based on number of samples/analytes completed by each individual what is the best way to execute? … Something that simply gives the Tech name and a summation of the analytes they have run over the time frame would suffice.

Here is an SQL statement that will do the job:

```
SELECT SampleAnalysis.Technician,
Analysis.Analyte,
Count(SampleAnalysis.SampleAnalysisID)
AS AnalysesPerformed
FROM Analysis INNER JOIN SampleAnalysis
ON Analysis.AnalysisID =
SampleAnalysis.AnalysisID
WHERE SampleAnalysis.AnalysisDate
Between #7/1/2021# And #7/31/2021#
GROUP BY SampleAnalysis.Technician,
Analysis.Analyte;
```

Add the SQL statement above to the MSC-LIMS Data Query workbook's Query worksheet. Just set the date range in the WHERE clause of the statement to the timeframe of interest. Also, see the workbook's ReadMe worksheet for other example SQL statements you may find helpful. ⛰
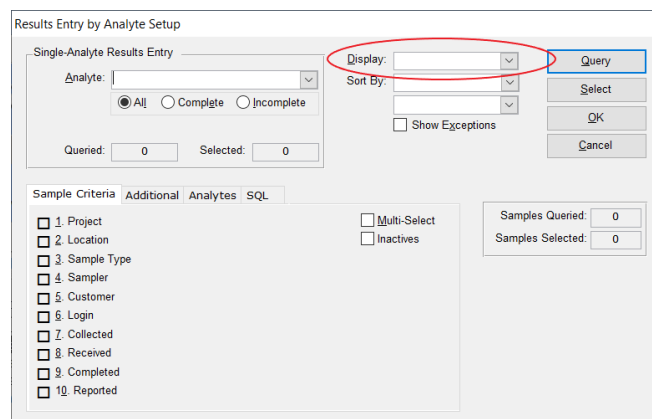
Results by Analyte 'Display' Field

After moving their MSC-LIMS installation from an older workstation to a new workstation, a user asked about a difference noticed in the Results by Analyte screen:

You can see that [old workstation] shows "location" with sample ID's. The [new workstation] shows date collected in place of location. The locations are important to have for cross referencing. Is that something you can look into please?

There is a simple explanation and solution. To help distinguish samples, the first column on the Result by Analyte screen will always list the sample ID. However, the content of the second column, which defaults to collected date, is configurable and saved with the LIMS workstation's settings. These

workstation settings remain with the machine and are not migrated to a new workstation's installation.

To restore the behavior from the old workstation, select the Results by Analyte option on the LIMS main menu to open the Results Entry by Analyte Setup screen shown above. Set the Display field on this screen to the sample field you want to appear in the Results by Analyte screen's second column. For example, set the Display field to Location to restore the behavior from the earlier workstation. The contents of the Display field on the Results Entry by Analyte Setup screen are saved with the Workstation Configuration screen's settings on the local drive so you only need to set it once and it will remain selected. Note that since the Display field selection is workstation-specific, workstations in a multi-user installation may each have a different Display field selected. ⛰

Results Entry Inserting Login Name Instead of Initials After Upgrade to Version 5.0

After upgrading from version 4.1 to version 5.0, a user noticed that one employee's login name was now automatically inserted in the Technician field instead of her initials.

During data entry in the Results by Analyte and Results by Sample screens, MSC-LIMS will determine if the current user's login name is associated with an employee. If an employee with matching login name

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is found, the employee's initials are inserted in the Technician field; otherwise the login name is used.

To troubleshoot, we reviewed the employee's record using the Employees screen on the Admin menu. This employee's login name, which was added with version 4.x, was different than her Windows login name used by version 5.0. Using the Login Name pick list on the Employees screen to replace the employee's old LIMS login name with her Windows login name solved the problem. Her initials are now inserted in the results entry screens.

Sampler vs. Employee

A user recently called and asked:

How do I add a new associate as a sampler to the LIMS?

You can simply use the Samplers screen on the Admin menu to add the new associate as a sampler. However, since the associate is a company employee, it is better to add the associate as an employee. Employee records in the LIMS include additional data tracking such as training and certifications. And all employees in the LIMS are also samplers. In fact, if you view all samplers in the Samplers screen you will see employees as well as samplers. When the [Change to Employee…] button is disabled on the Samplers screen, you will know that the currently listed sampler is also an employee.

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.
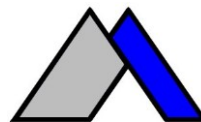
File Library

CofA Example by Requirement.xltm
Use this single-sample Certificate of Analysis example Excel export template to create your own CofAs that list analyses grouped by requirement similar to the Sample Summary report.

Contact Us

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