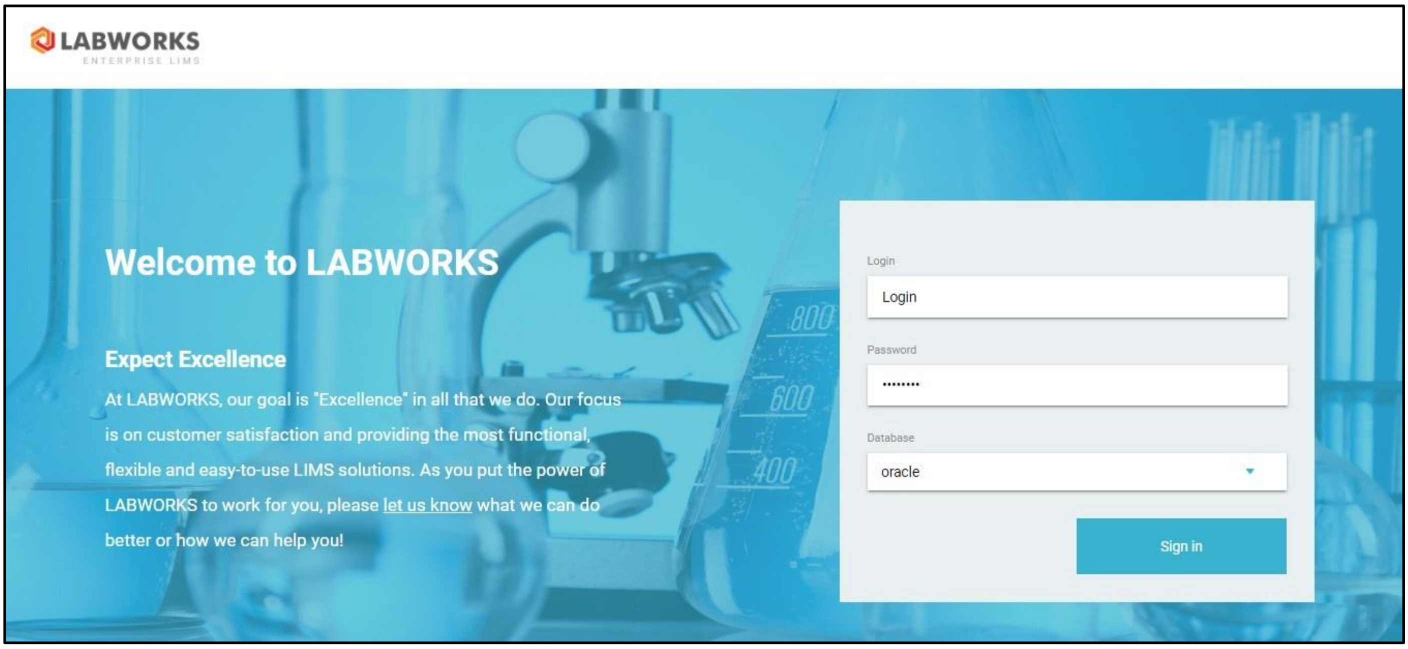
LABWORKS Enterprise LIMS

User's Guide

Last update: Mar 02, 2020

Contents

Sign In



Labworks Enterprise LIMS is a web application, so you need a web browser to access the system.

Supported desktop browsers:

- Edge
- Google Chrome
- Safari
- Firefox

Supported mobile browsers:

- Chrome
- Safari
- Edge

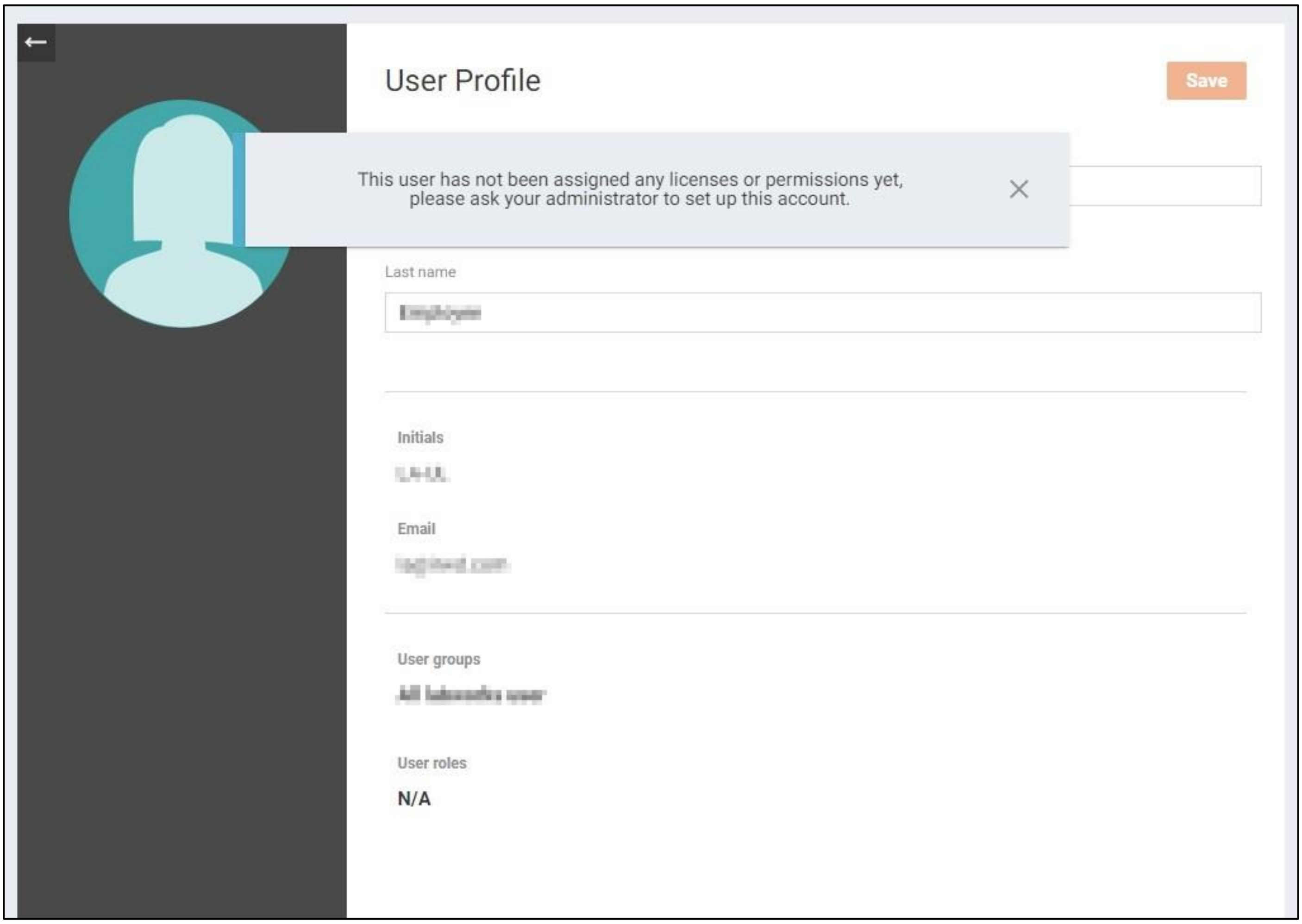
Please make sure that your browser is updated to the latest version.

The following information is required to access Labworks Enterprise LIMS:

1. URL-address of Labworks Enterprise LIMS in your network.
2. Database name, when there is more than one database available.
3. Your login and password in the selected database.

The first screen you see when you access the Labworks Enterprise LIMS for the first time is the **Sign In** screen. Once you fill up the form and click the "**Sign In**" button, the system will validate provided credentials and allow you to access the main interface of the application.

User Profile



In order to access various components of the Labworks Enterprise LIMS, a corresponding role must be assigned to your profile.

The system will display following notification in case if there are no roles assigned to your profile:

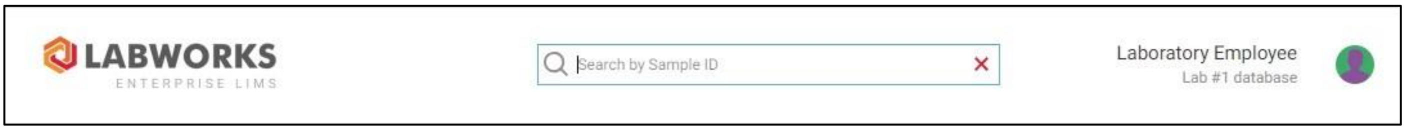
Please ask your administrator to assign certain roles to your profile.

Assigned roles are displayed on **User Profile** page under the "**User roles**" label.

Application Interface

Upon a successful sign in to the Labworks Enterprise LIMS, the user is navigated to the main area of the application interface. All screens in this area share the same layout consisting of two components:

1. **Application Header** is shared between all screens. It contains the global navigation menu and the user profile menu.
2. **Content Block** displays screen-specific information.



The global navigation menu is used to switch between two areas:

1. **Dashboard** area contains configurable tiles with a visual representation of various summary data.
2. **Sample Management** displays all available samples in a list, with options to find, filter or inspect particular elements.

By clicking the **magnifier icon** you can open the **Search Form** and specify the text to search in the **Sample ID** field values of all available samples. Once the form is submitted, you are navigated to the **Sample Explorer** screen with a corresponding filter by **Sample ID** field applied, or the **Sample Details** screen, when there is only one sample found by this query.

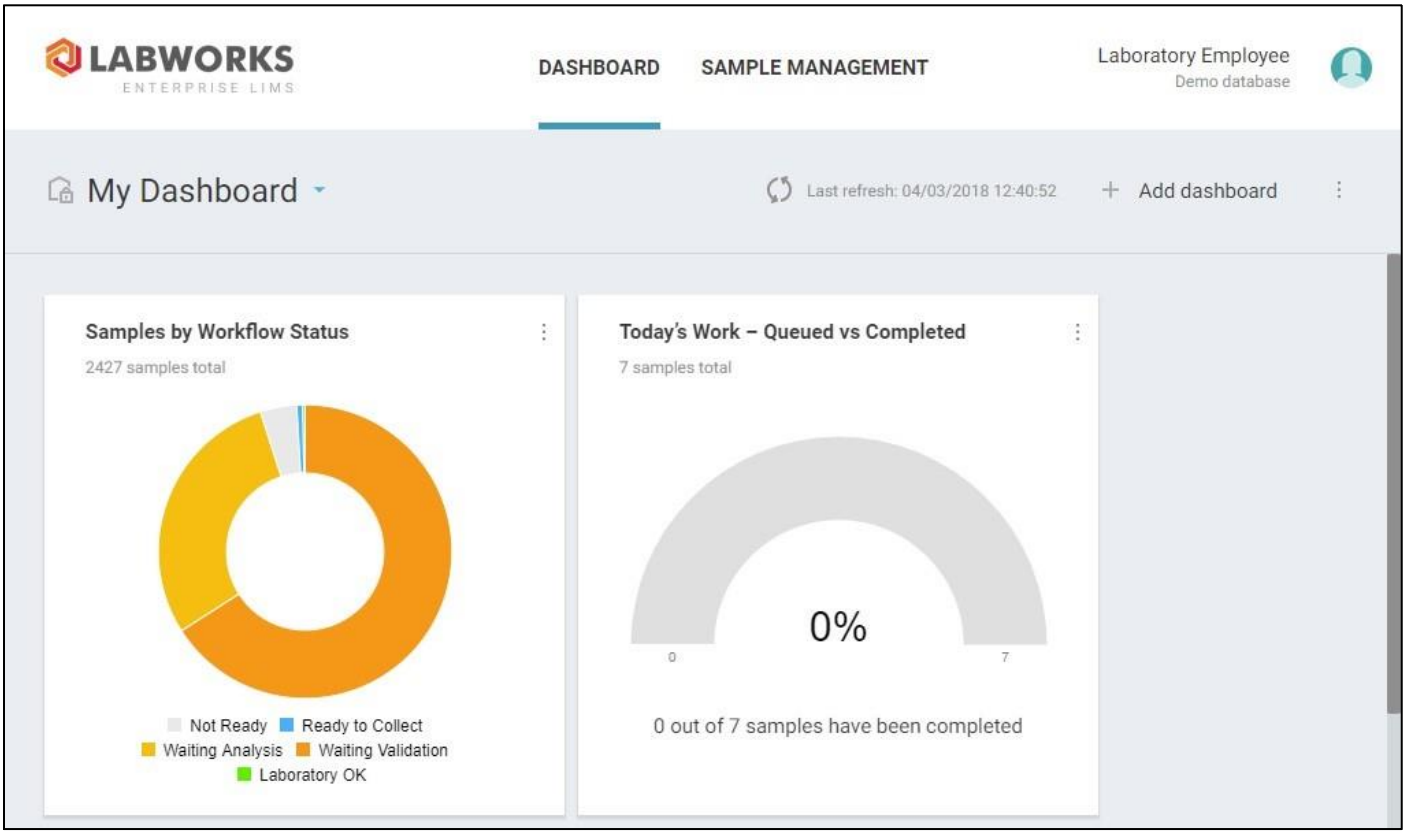
The user profile menu is used to navigate to the **User Profile** screen and sign out of the application to end the session.

Dashboard

Dashboard is the first screen, the users with assigned roles see when they sign in to the system.

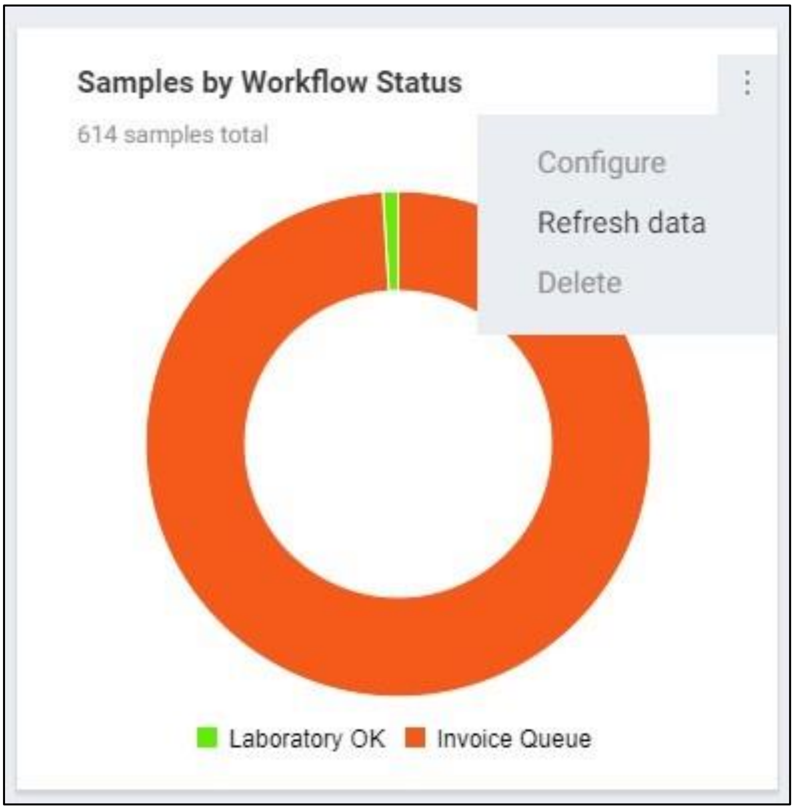
Every dashboard is a configurable set of tiles with a certain summary data.

The summary is generated only for the data you have access to, so **different users may see different data on the same dashboard**, depending on their access level.

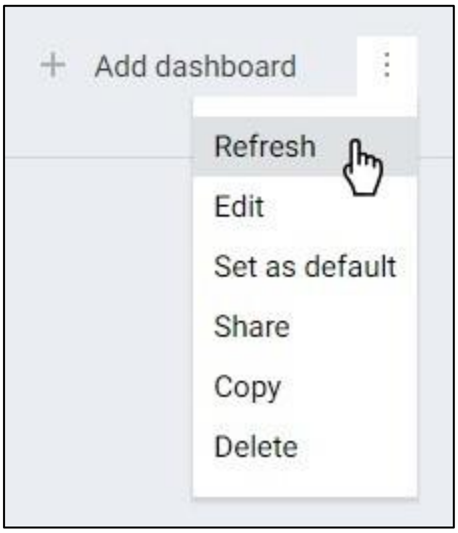


The data displayed in the tiles updates automatically every five minutes.

You can force the update of a particular tile by clicking "**Refresh data**" option in the tile action menu.



To force the update of the whole dashboard at once, click the **refresh icon** next to the "**Last refresh**" label or the "**Refresh**" option in the dashboard action menu.



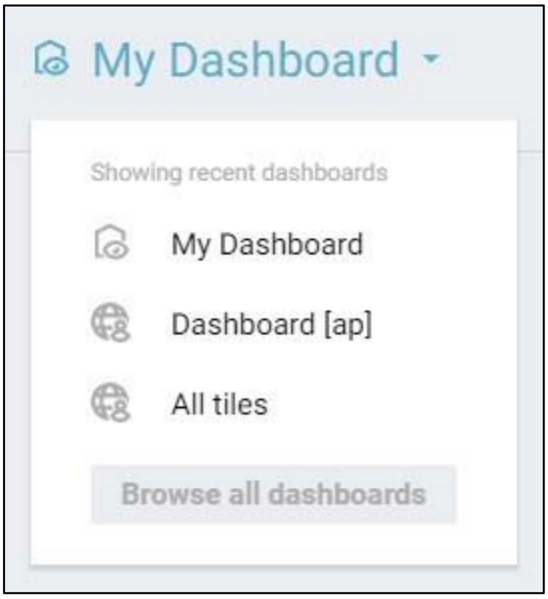
By clicking on charts inside the tiles you can navigate to the **Sample Management** screen with appropriate filters applied, to examine the data further.

Dashboard Selection

All dashboards can be divided into following groups by the level of access:

Icon	Access	Created by	Visible to	Configurable by
	Private (not shared)	Yourself	Yourself	Yourself
	Public (shared)	Yourself	All users	Yourself
	Public (shared)	Another user	All users	Dashboard creator

You can freely choose between your private dashboards or any of the public dashboards by clicking the dashboard title. The click propagates a window with a list of up to five recently viewed dashboards.



To access the full list of available dashboards, click "**Browse all dashboards**" button. The click opens the "**Dashboards**" sidebar, where you can search, filter and select any of available dashboards to be set as your dashboard.

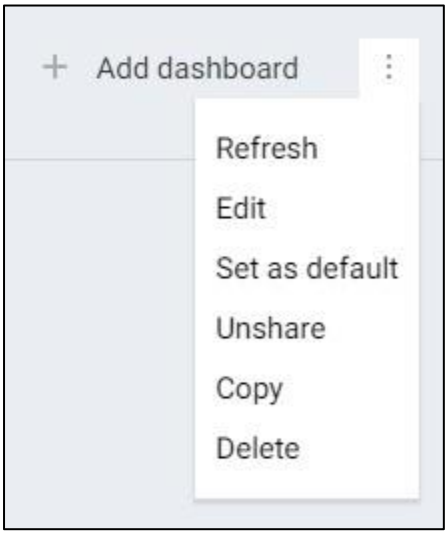
Default Dashboard

The default is a dashboard displayed when you navigate to the **Dashboard** screen.

If you have no dashboard set as default, the global default dashboard will be displayed instead.

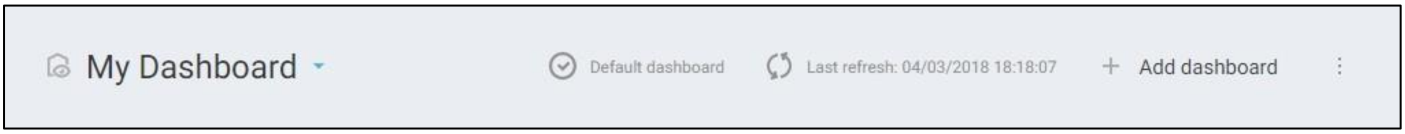
Since a public dashboard may be changed at any time by the owner, you can only set your own dashboard as a default one. To have the public dashboard set as your default, you have to create a private copy of that dashboard using the **Copy** action.

To set your own dashboard as a default, click the menu button on the right-hand side of the screen.



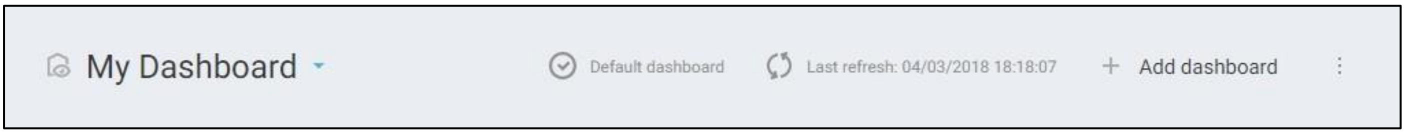
In the list of actions, find and click the **"Set as default**" option.

Now the dashboard is set as default, which is indicated by the check mark icon next to the dashboard title.



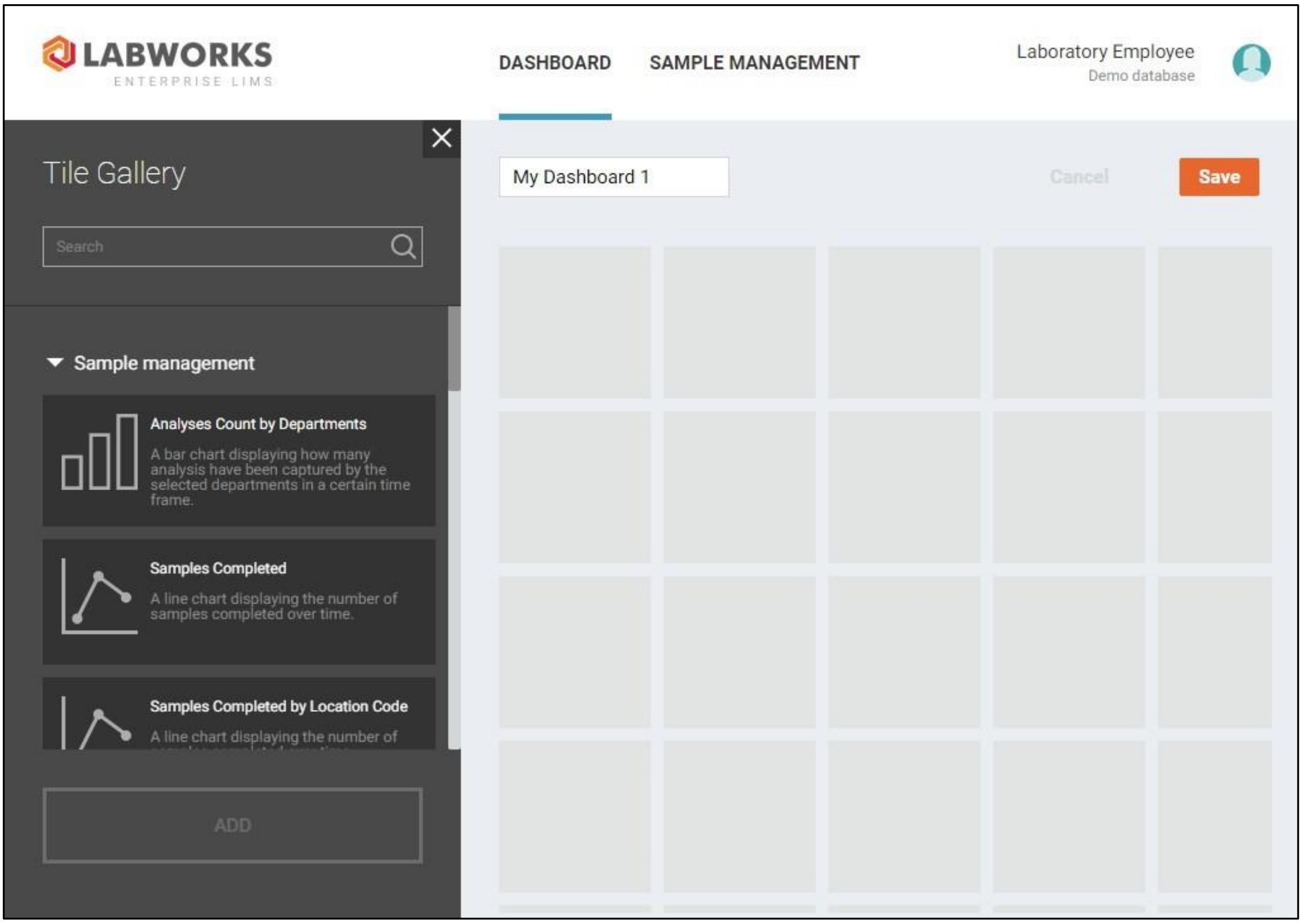
Dashboard Creation

If you wish to have a custom dashboard you can either copy and edit an existing one or create your own dashboard from scratch by clicking "**Add dashboard**" button on the right-hand side of the **Dashboard** screen.



In the pop-up window, enter the desired dashboard name and click "**Create**" button.

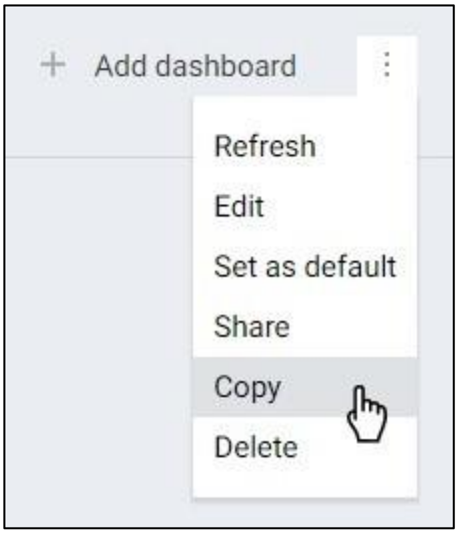
You will see an empty dashboard in the editing mode with the tile gallery opened on the left-hand side of the screen.



Add and configure tiles to your preference and click "**Save**" button to complete dashboard creation process.

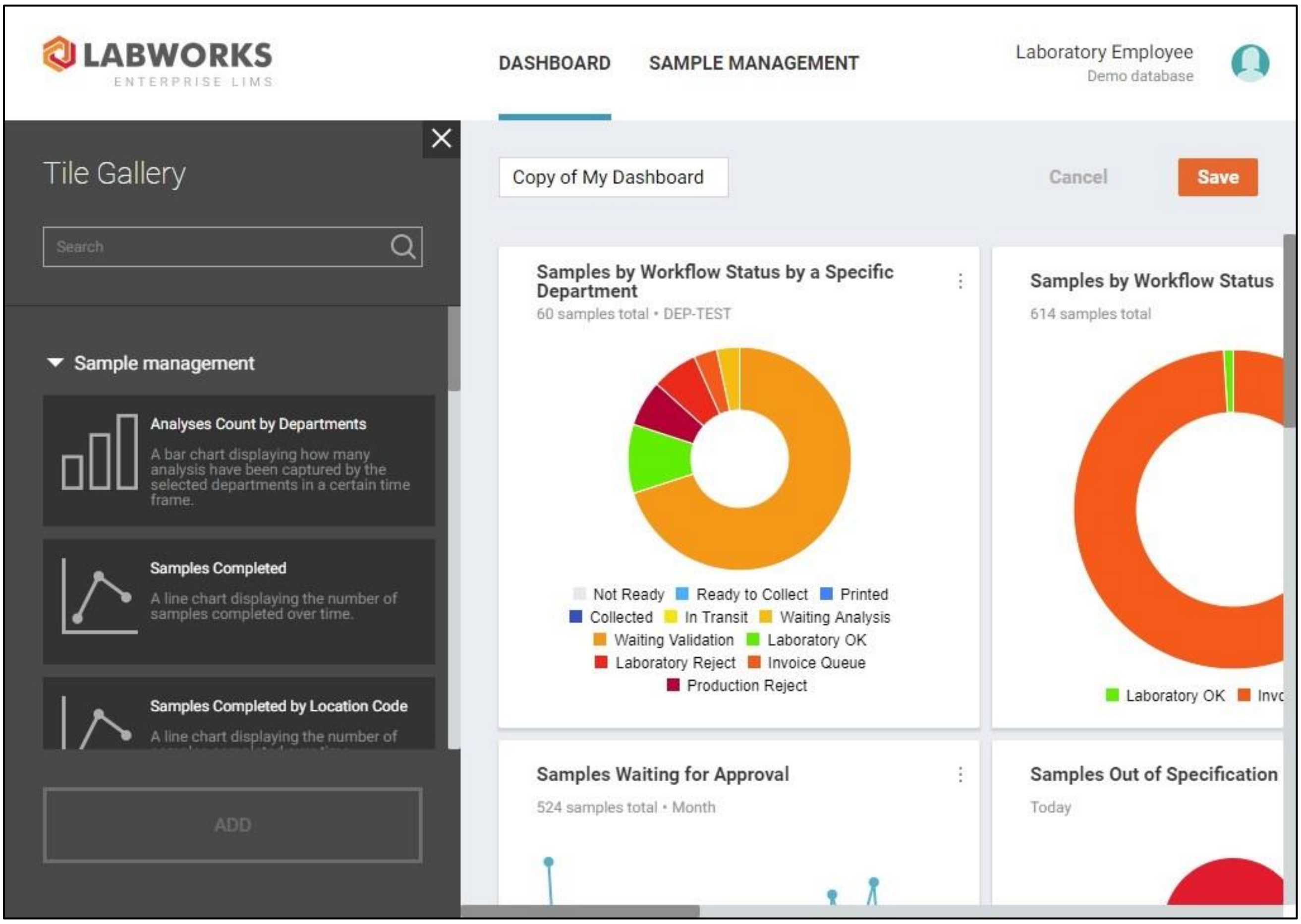
Dashboard Copying

To copy an existing dashboard, select it in the list of dashboards, and click "**Copy**" option in the dashboard action menu.



In the pop-up window, enter the desired name for the copied dashboard and click "**Copy**" button.

You will see a copy of the dashboard in the editing mode with the tile gallery opened on the left-hand side of the screen.

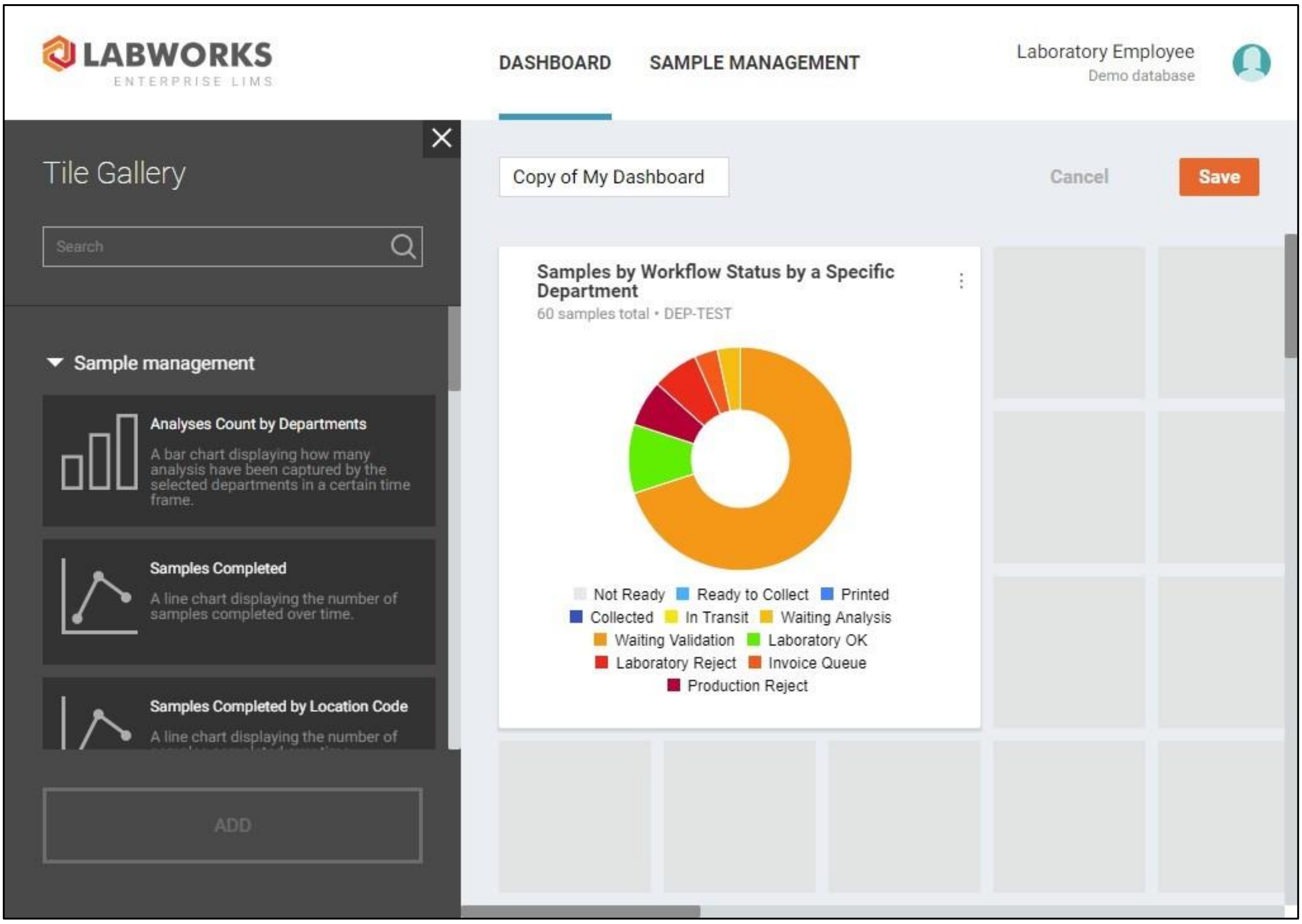


Add and configure tiles to your preference and click "**Save**" button to complete dashboard copying process.

Dashboard Editing

You can edit only your own dashboards. If you wish to use an adjusted version of an existing dashboard of another user, you have to create a copy of that dashboard using the **Copy** action and edit the duplicate instead.

To edit a dashboard, select it in the list of dashboards, and click "**Edit**" option in the dashboard action menu. You will see the dashboard in the editing mode with the background filled with tile slots and the tile gallery opened on the left-hand side of the screen.



The tile gallery contains a grouped list of all available tile types with options to search through the tile names and collapse or expand a particular group.

While the dashboard is in the editing mode, you can perform following actions:

- **Rename the dashboard** in the text input field with the current dashboard name
- **Add tiles to the dashboard**
  - By selecting a tile in the tile gallery and clicking "**Add**" button that will add the tile to the next available space in the first row of the dashboard tile grid
  - By dragging a tile from the tile gallery with the left mouse button to the desired location in the dashboard
- **Relocate & reorder tiles** by dragging the tile within the dashboard bounds with the left mouse button

- **Resize tiles within the constraints of a particular tile type** by dragging tile border with the left mouse button

When you click "**Save**" button, the changes are applied to the dashboard and it leaves the editing mode.

The changes are reflected in the interface of other users once they refresh the dashboard, in case if the dashboard is public.

To discard all changes made to the dashboard, click "**Cancel**" button and confirm the action in the dialog window.

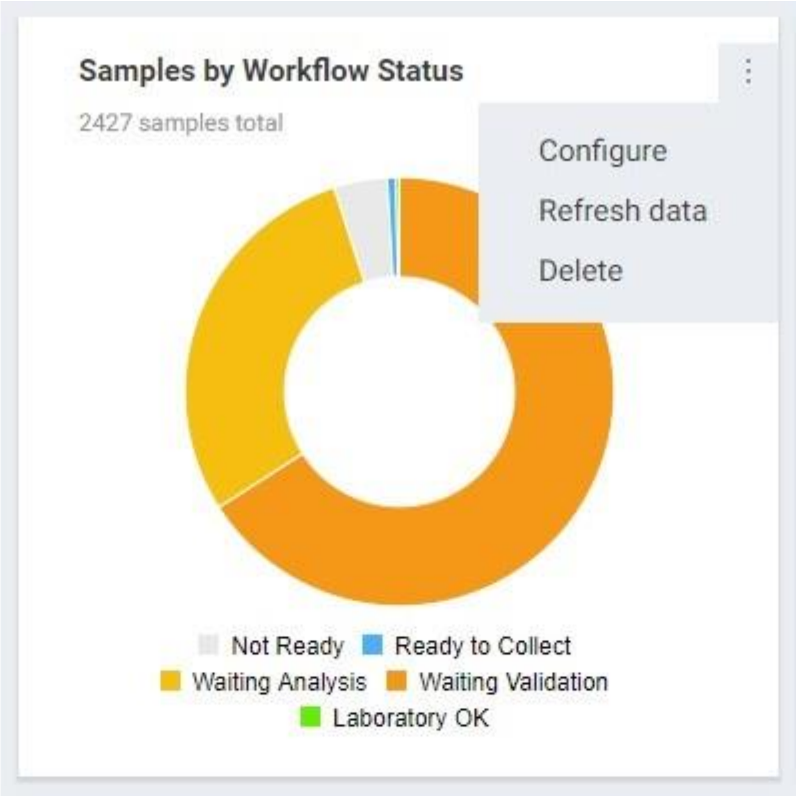
Dashboard Tile Editing

Tile editing and deletion can be performed from the tile action menu toggled by the button on the right-hand side of the tile.

To delete a tile, click the "**Delete**" option in the tile action menu of a particular tile.

To edit a tile, click the "**Configure**" option.

The users can edit only the tiles of their own dashboards. The "**Configure**" and "**Delete**" options are not available to everyone else. If you wish to use an adjusted version of an existing dashboard of another user, you have to create a copy of that dashboard using the **Copy** action, and edit the duplicate instead.



The "**Configure**" option brings up a tile configuration window. The window contains different settings depending on the tile type:

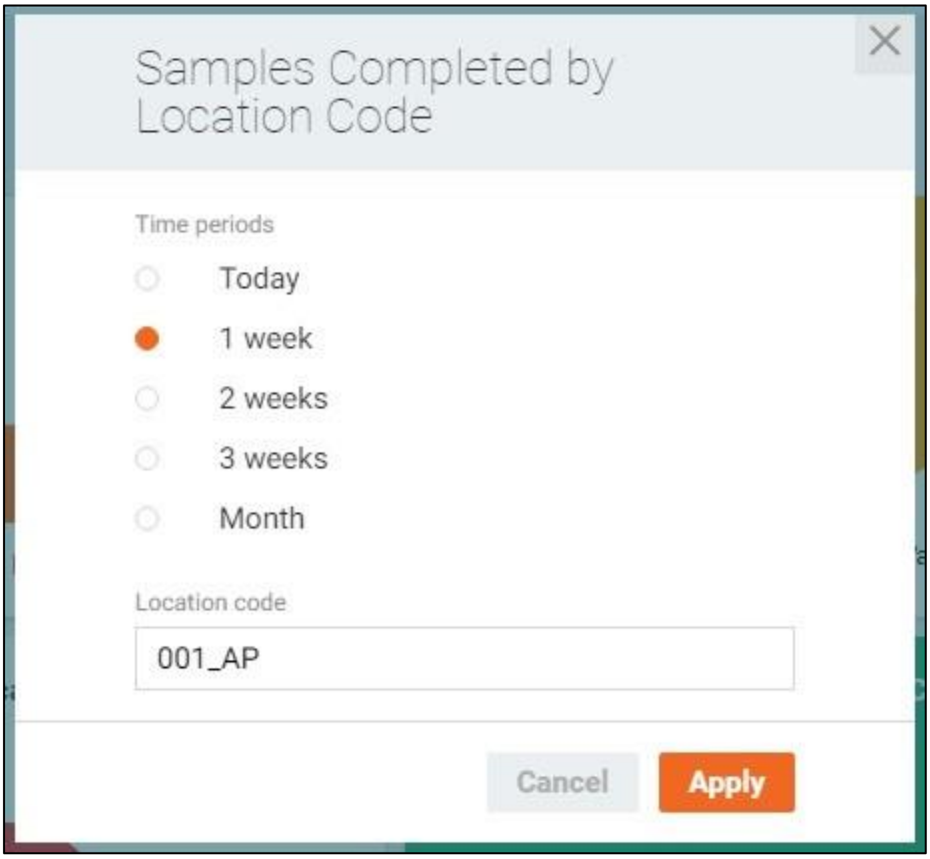
Location Code - the tile data is filtered according to the specified location

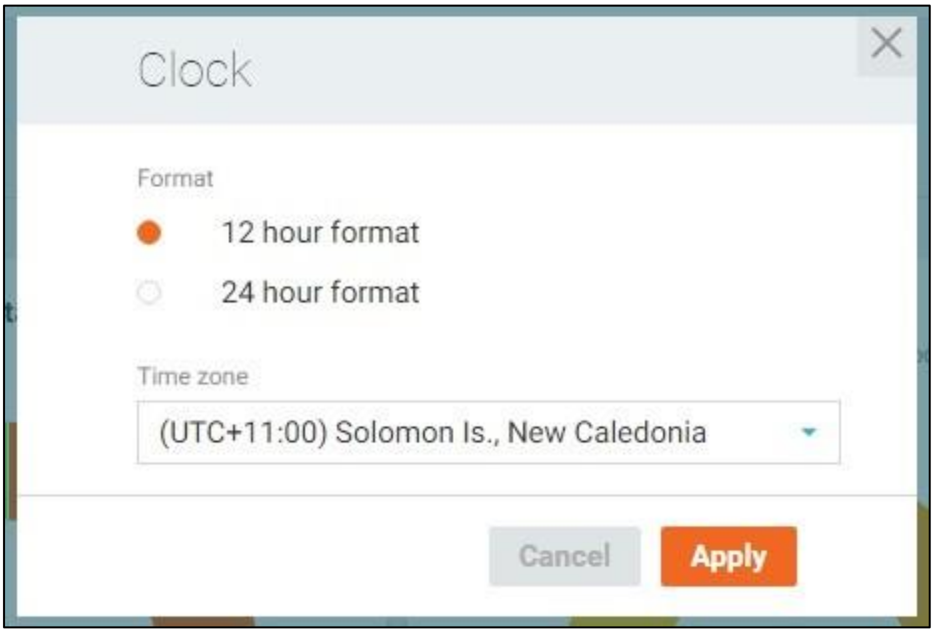
Sample Statuses - the tile data is filtered according to selected sample statuses

Departments - the tile data is filtered according to selected departments

Time periods - the tile data is filtered according to the specified time period

Miscellaneous - special configuration options, not related to the sample management, e.g., the time zone and hour format settings for the clock tile





The availability of tile configuration options depends on your access to particular locations and departments. When you copy a dashboard with unavailable data, a corresponding error message will be displayed in the tile configuration window

When you click "**Apply**" button, the changes are applied to the dashboard and it leaves the editing mode.

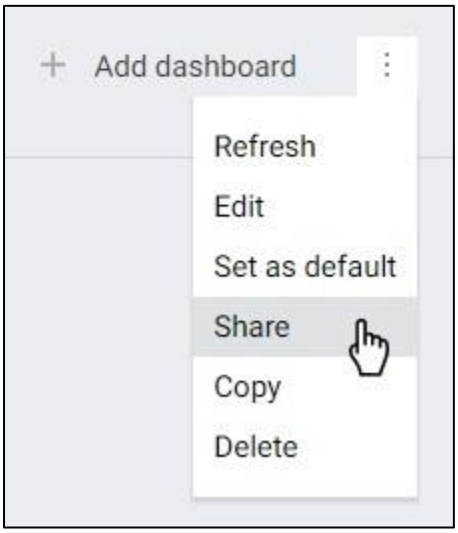
All changes made to the tiles are reflected in the interface of other users once they refresh the dashboard, in case if the dashboard is public.

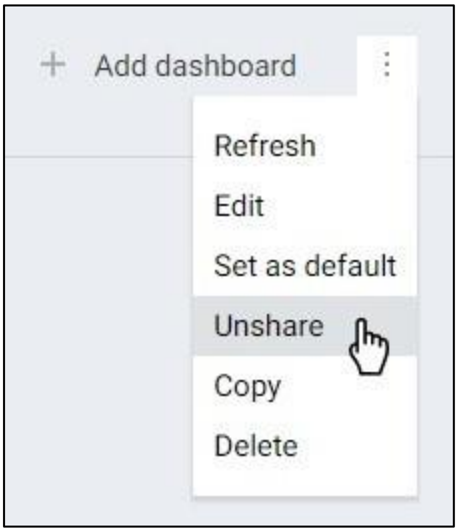
To discard all changes made to the dashboard, click "**Cancel**" button and confirm the action in the dialog window.

Dashboard Sharing

Shared dashboard becomes publicly available to other users of the system.

To share a dashboard, select it in the list of dashboards, and click "**Share**" option in the dashboard action menu.





The "**Share**" option in the dashboard action menu is replaced by "**Unshare**" option once the dashboard is shared.

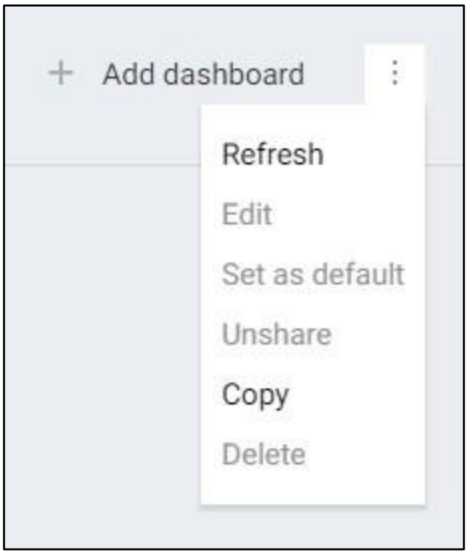
All other actions are still available to the dashboard owner.

Any change made to the public dashboard is reflected in the interface of other users viewing this dashboard.

The summary is generated only for the data you have access to, so **different users may see different data on the same dashboard**, depending on their access level.

The shared dashboard can be found by any user in the complete list of dashboards. The only options available to other users in the dashboard action menu are:

- **Refresh**
- **Copy**



The only option available to other users in the tile action menu is "**Refresh data**".

With the "**Unshare**" action you can reset the dashboard back to private.

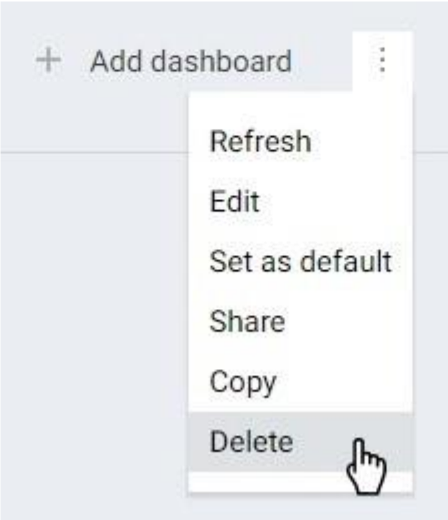
Private and deleted dashboards become unavailable to other users.

Dashboard Deletion

You can delete only your own dashboard, regardless of it being private or public.

Note that deleted dashboard becomes unavailable to other users in case if it was public (shared with other users).

To delete a dashboard, select it in the list of dashboards, click "**Delete**" option in the dashboard action menu and confirm the action in the dialog window.



Sample Management

Sample Management is an area of the system where users can access detailed information about the samples.

There are five options under the "Sample Management" section in the header:

1. Sample Login
2. Sample Explorer
3. Log Batch Explorer
4. QA/QC Batch Explorer
5. Collection Group Explorer

There is a set of buttons you will see on some of the screens that perform certain actions with the samples:

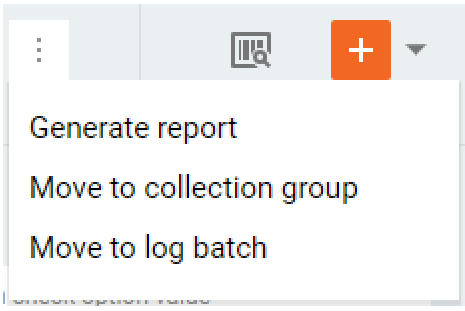
- Open **Sample Review** window for the selected sample(s). The drop-down menu next to the button allows to select the template beforehand.

- Open **Sample Edit** screen for the selected sample(s). The drop-down menu next to the button allows to select the template beforehand.

- Open **Result Entry** screen for the selected sample(s). The drop-down menu next to the button allows to select the template beforehand.

- Prints standard labels for the selected sample(s).

Some actions may be hidden under the action drop-down menu:



- Generate report – Creates a report of the type that you select in the appeared window.
- Move to collection group – Move selected sample(s) to a collection group that you select or create in the **Move to Collection Group** window.
- Move to log batch – Move selected sample(s) to a log batch that you select in the **Move to Log Batch** window.

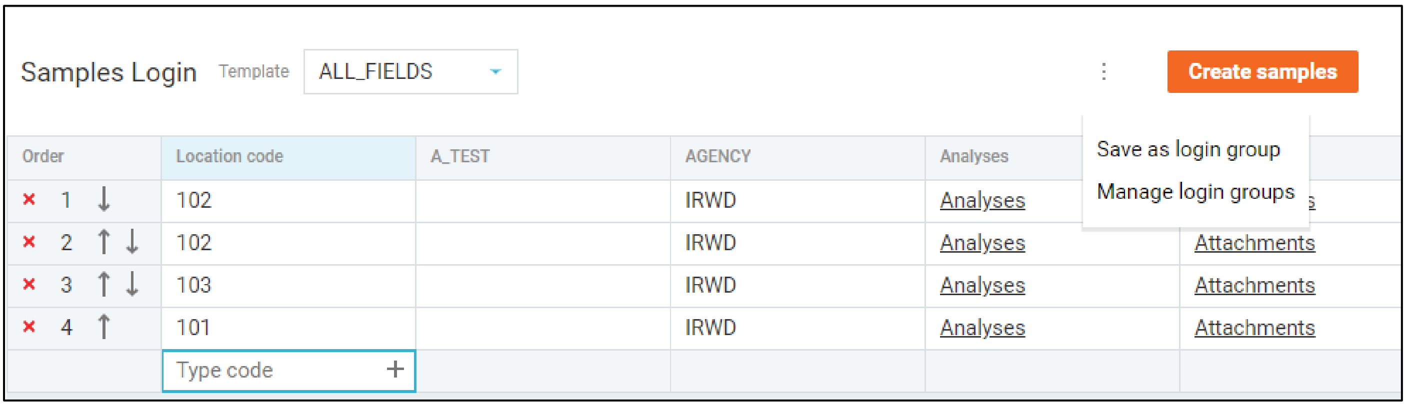
There are also two buttons that help to find and add samples to the system.

- Open **Scan Samples** window.

- Open **Sample Login** screen. The drop-down menu next to the button allows to select the template beforehand.

Sample Login

Sample Login screen is intended to provide a convenient way to add new samples to the system.

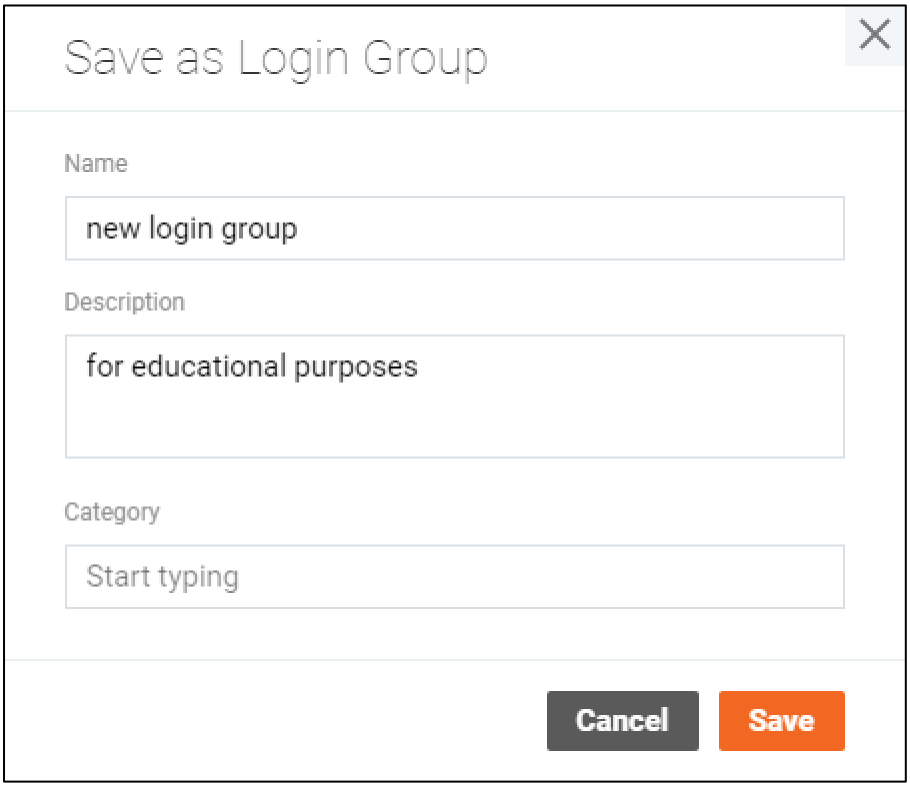


The sample data should be filled in a spreadsheet with rows corresponding to particular samples and columns – to their fields. The spreadsheet supports MS Office Excel style operations.

By default, the spreadsheet is blank and in order to add a new sample you need to specify a location code. You can do this either by typing it in the location code field, or by clicking the plus icon in the field to open the **Location Code Selection Window**, where you can browse all location codes with additional data and additional options to ease the process of sample addition.

The set of fields in the spreadsheet is determined by the selected **Template** and can be changed anytime. Note that if you try to change the template while the spreadsheet is not blank, all sample data will be discarded upon confirmation.

However, you can save the sample data for later by clicking the menu button on the right-hand side and selecting the "Save as login group" option.

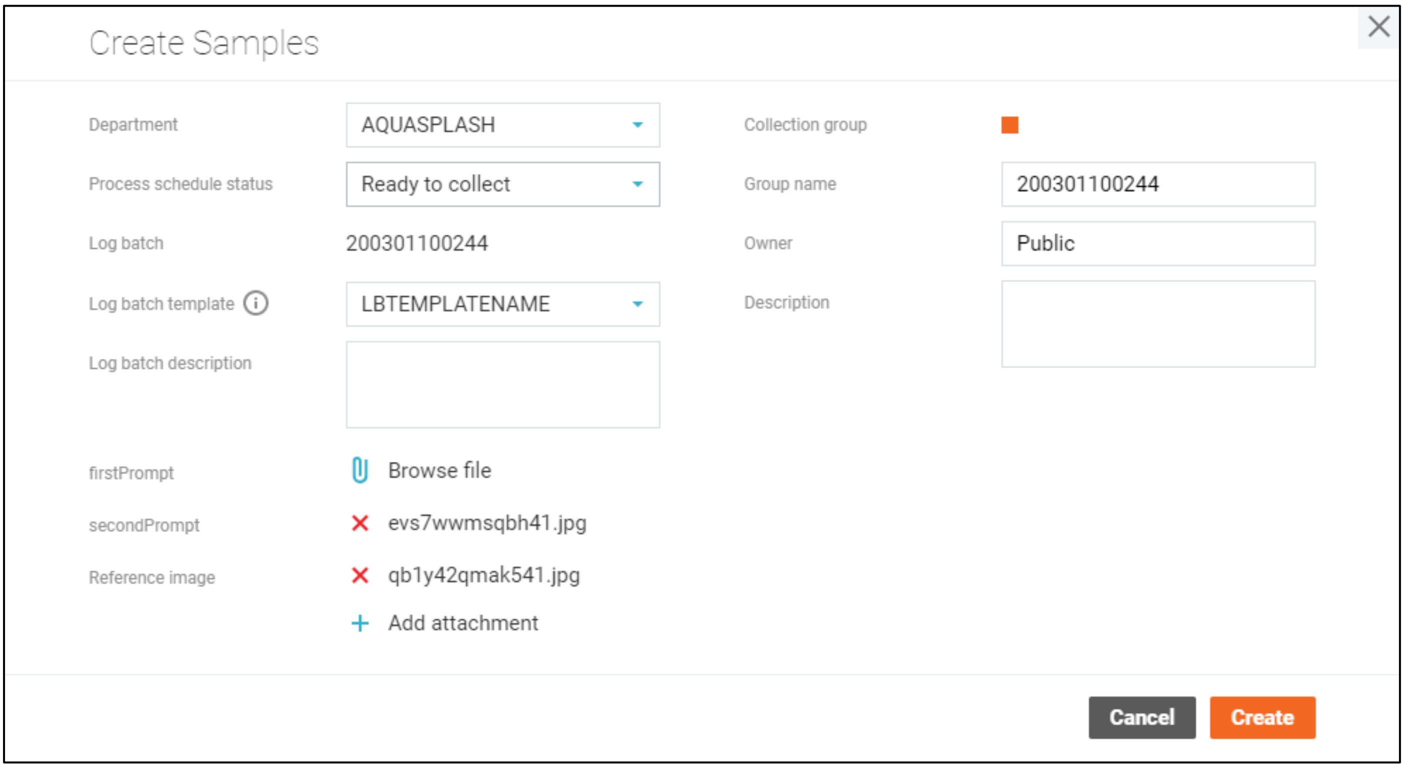


The “Manage login groups” option will navigate you to the **Manage Login Groups window** where you can update, delete or load any of the available login group data to the spreadsheet, except the collection and submission dates (as they depend on the template settings). The data can be loaded even if the currently selected template is different from the template used to save login group.

The fields may contain not just numbers, dates and text information, but also references to other entities.

You can assign analyses that should be performed with a certain sample, add attachments or specify contacts and mail groups that should receive notifications about the samples.

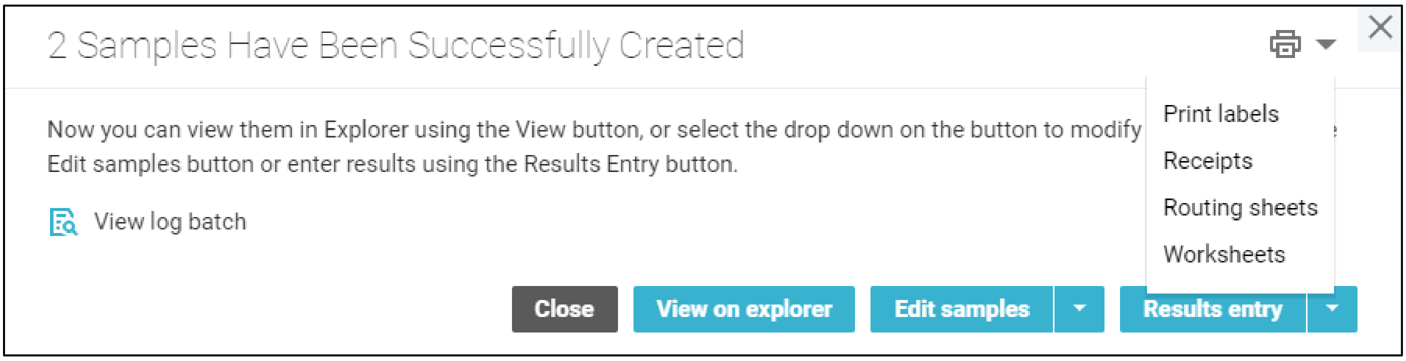
Once you have added all required information about the samples and clicked the “Create samples” button, you will see the **Create Samples** window where you will be asked to enter the information related to the whole batch of samples (log batch).



The log batch may have a log batch template when the sample login template allows it. If it does, you can select a log batch template, and the fields related to that template will be listed under the template name.

The log batch may also be assigned to a collection group on the right-hand side of the window. You are free to specify the details of the collection group as well as the owner.

When you are done adding all required information about the log batch, you can click “Create”.

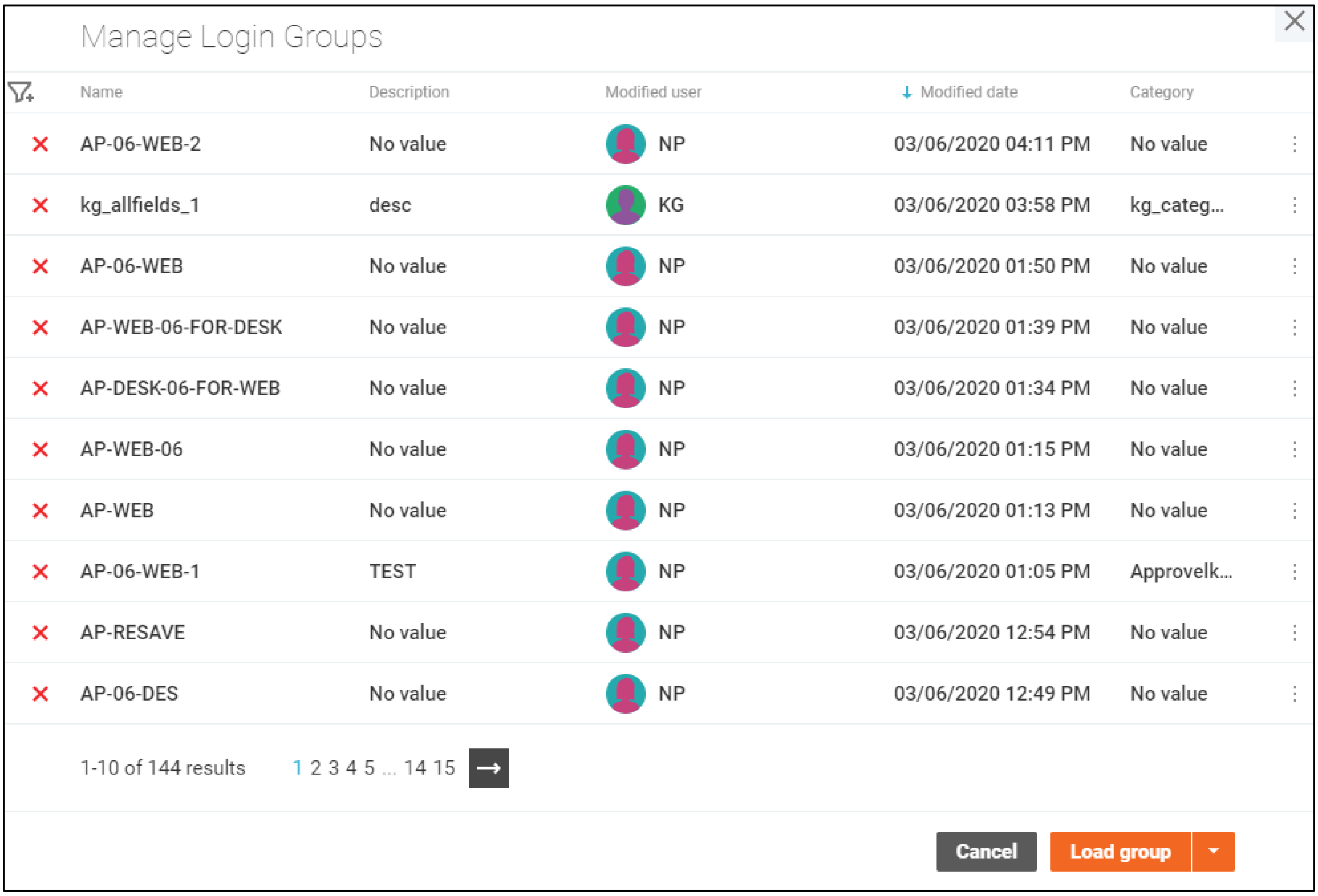


All information is now added to the system and you can view the details of the samples and their log batch (if it was created with a template). You can also update the samples or proceed to the analysis result entry either with the template used last, or the template that you selected in the drop-down list next to the corresponding button.

Samples may support printable reports depending on the template used during Sample Login. This is indicated by the Print drop-down menu in the top-right corner of the Sample Login Success window. Click on the corresponding report to download it as PDF file.

Sample Login Groups

The list of login groups can be accessed by clicking the menu button on the right-hand side of the **Sample Login** page and selecting the “Manage login groups” option.



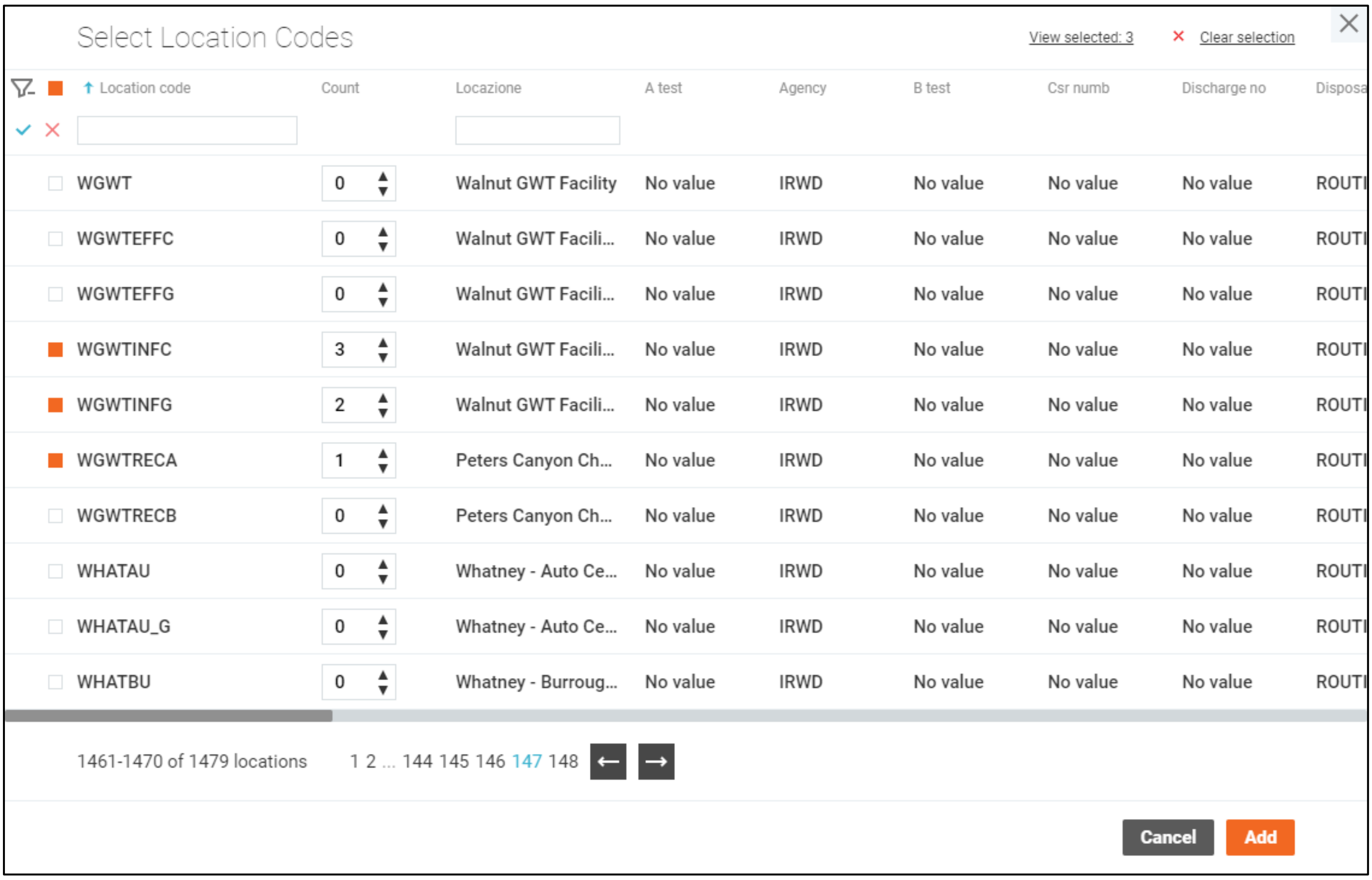
You can sort and filter the login groups to find the one you need, change the name, description or category of a particular group by selecting the “Edit” option in the group actions menu and delete login groups.

To use a particular login group for sample login, click on it to mark it as the selected one, and then click the “Load group” button.

To load only the location codes mentioned in the group, click on the corresponding option under the load group button drop-down menu.

Sample Location Codes

Location code selection window is needed to find and select multiple location codes in order to populate the sample login spreadsheet.



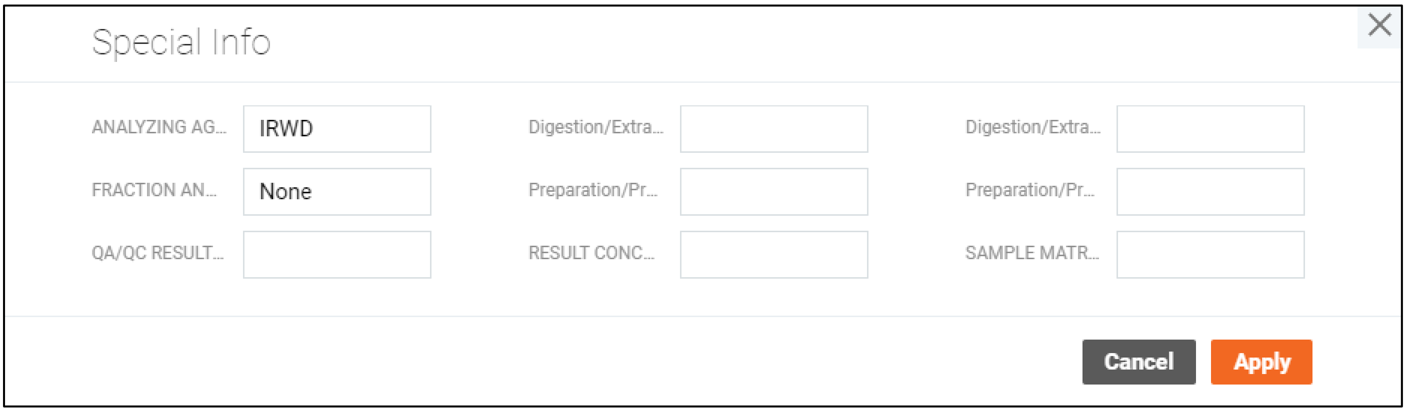
The “Count” field corresponds to the number of samples you wish to add to the sample login spreadsheet with this location code.

You can use sorting and filters to find the particular codes and preview all codes that you’ve selected with the “View selected” button in the top-right corner of the window.

Once you have selected all location codes that you need and specified the number of samples you want to add with a particular code, click the “Add” button, and the samples will be added to the very end of the sample login spreadsheet.

Sample Special Info

Special Info window contains additional sample fields.

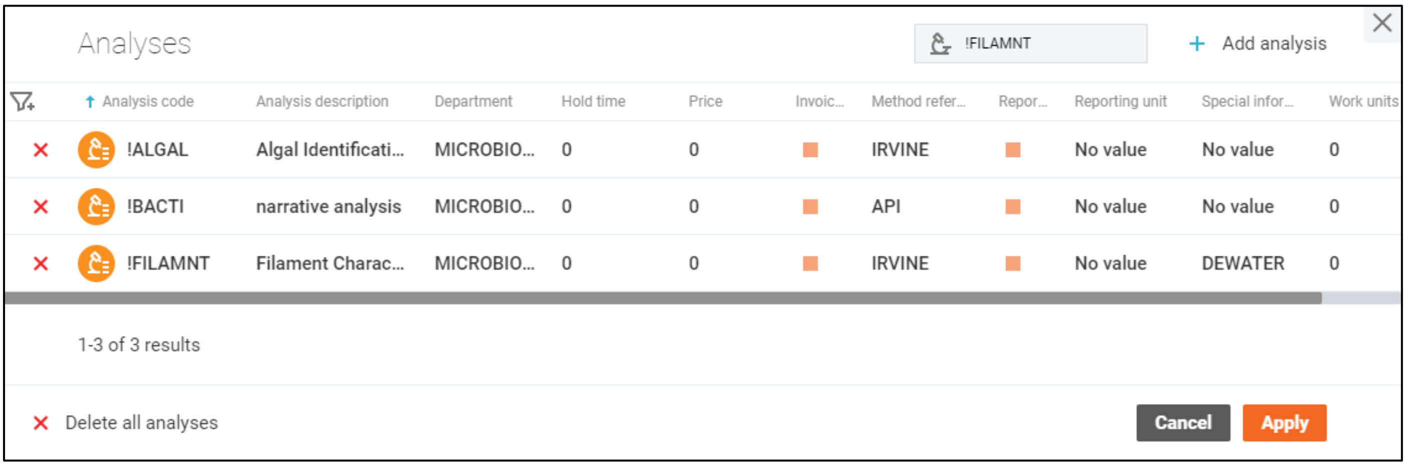


All fields are optional and inherit from the location code by default.

Enter the corresponding sample data and click the “Apply” button to save it.

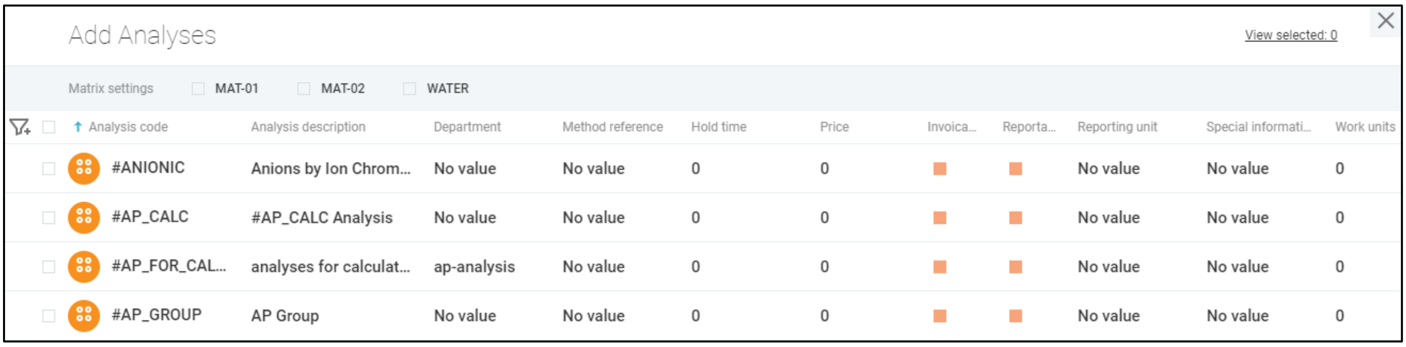
Sample Analyses

Sample analyses window lets you select the analyses to be performed with a particular sample. You can filter and sort the selected analyses or remove them from the list.

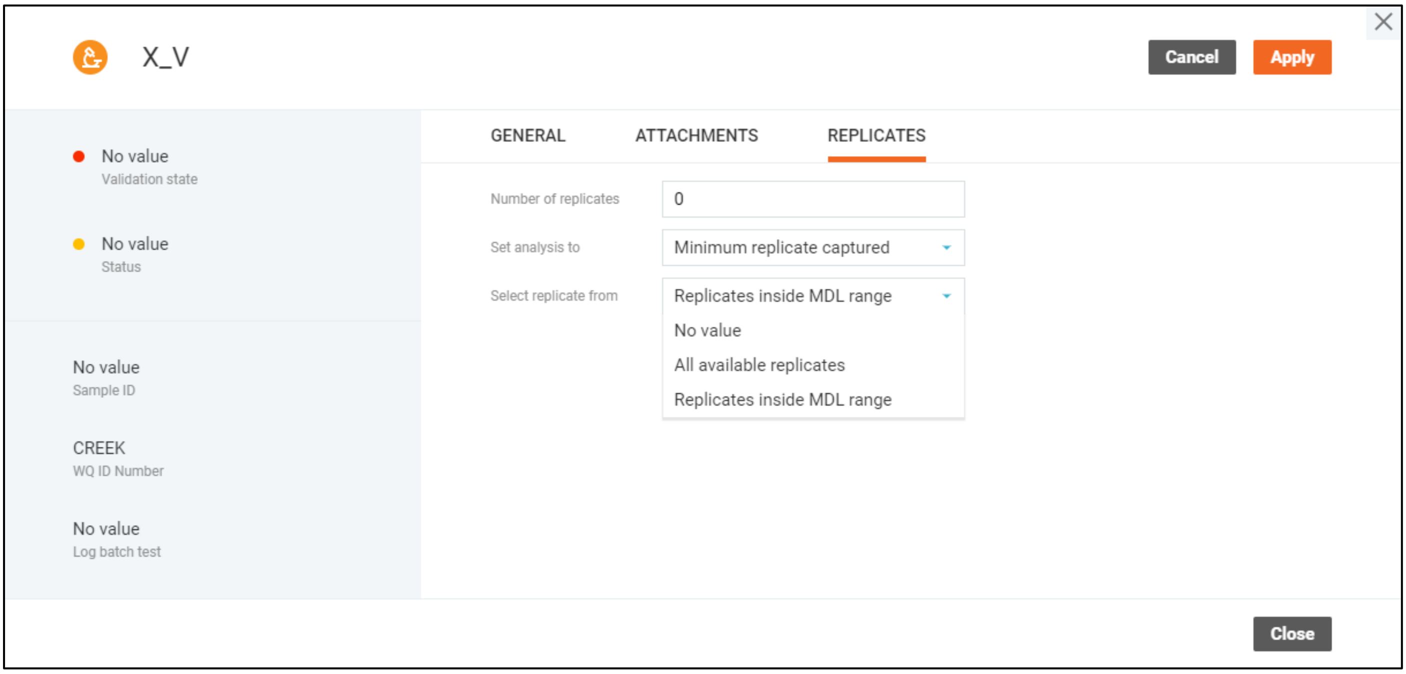


By default, the list of analyses is empty or populated with the default analyses for the sample location and you have to type its name in the field to the left and select it from the suggested ones, or click the “Add analysis” button in the top-right corner to open the **Add Analyses** window.

On the **Add Analyses** window you can sort the analyses, filter them either by fields or by their Matrix settings, and select the analyses you wish to add to the sample.



You can enter an additional analysis information straight away by clicking on the analysis code. You will see a reduced version of the **Analysis Details** screen where you can fill some of the analysis fields even before the sample is added to the system.

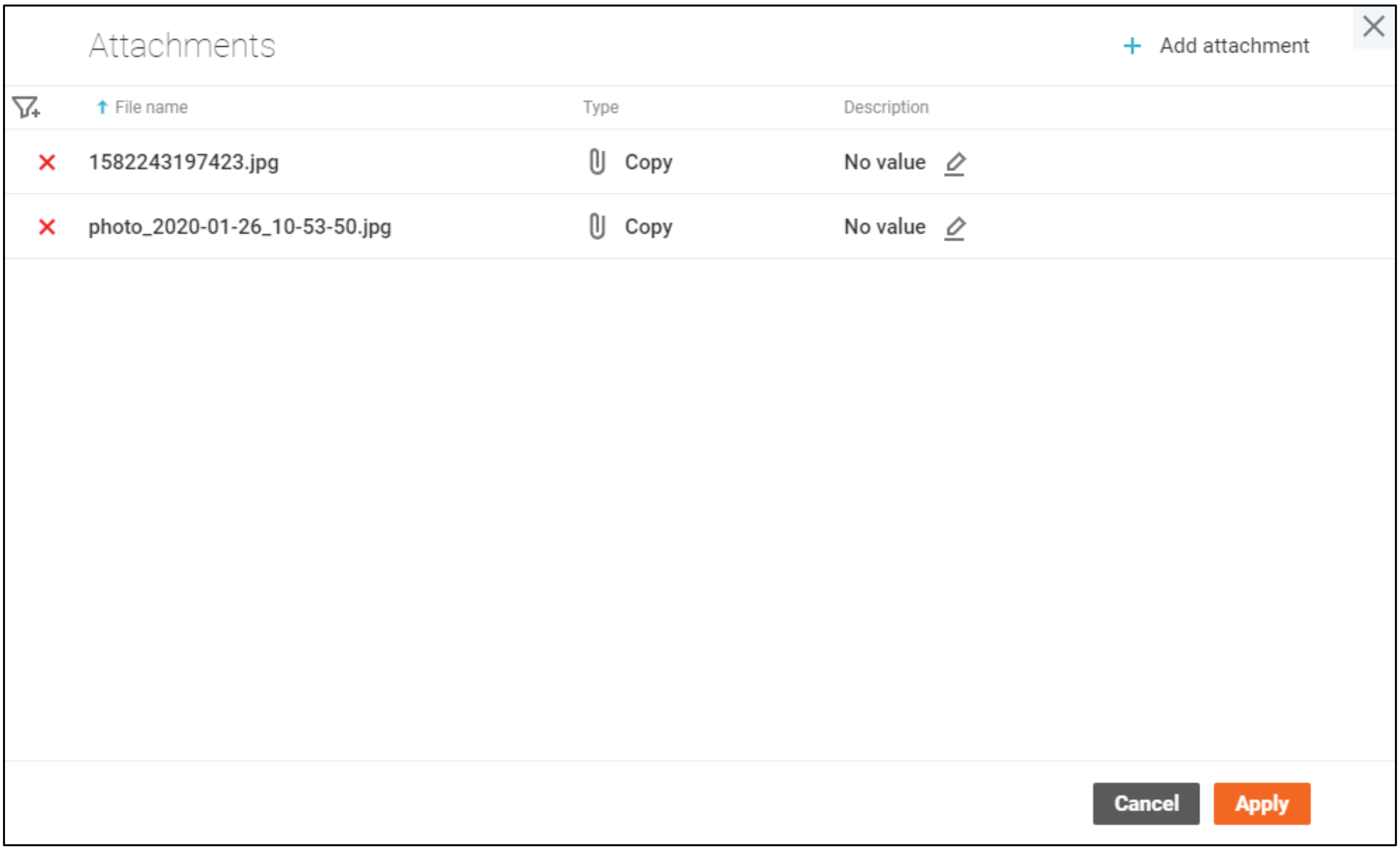


If you wish to specify replicates for the analyses with components right away, you can open the "Replicates" tab and set the number of expected replicates as well as the logic for analysis result calculation.

Once you added all required analyses, click the "Apply" button.

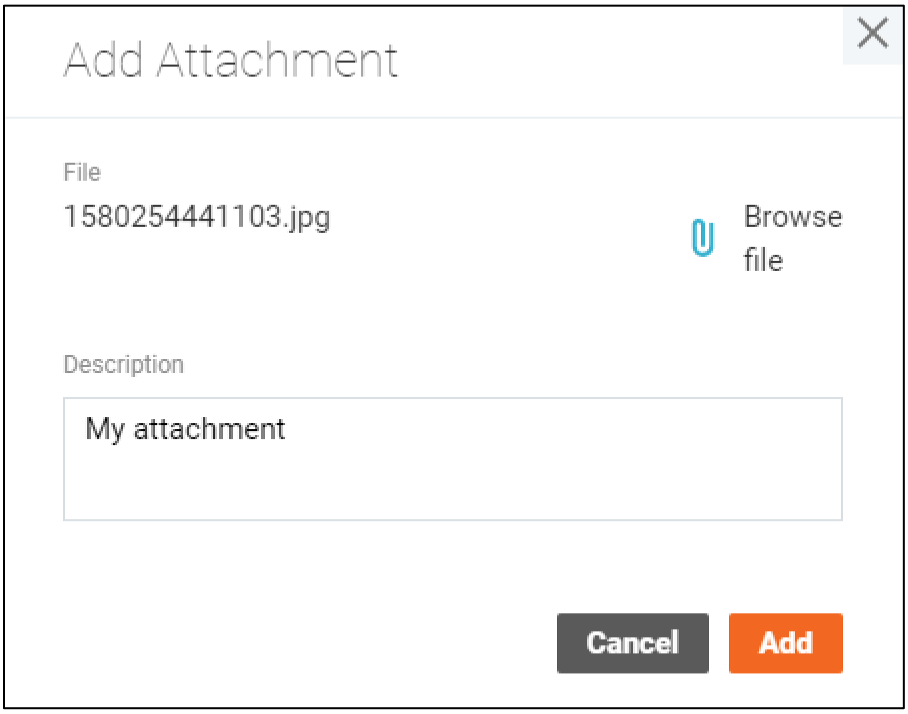
Sample Attachments

Samples may have files attached to them, and they are handled on the “Attachments” window.



The Sample may inherit some attachments from the location. In this case, you can’t delete or update them.

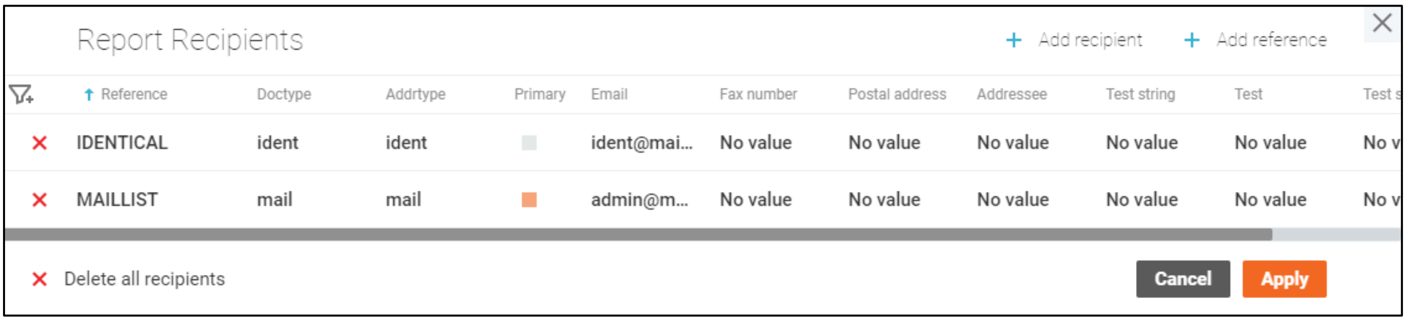
To attach a new file to the sample, click the “Add attachment” button in the top-right corner of the window, and select the file by clicking the “Browse file” button. You may add a description of the file if you wish. When done, click the “Add” button and the attachment will be added to the list.



You can filter, sort delete attachments or update their description. Once you added all required attachments, click the “Apply” button.

Sample Report Recipients

If you want someone to receive reports about a particular sample, you can use the report recipients window.



The Report Recipients window is available when you click on the “Report recipients” cell during the sample login. It contains a list of all users that should receive the reports.

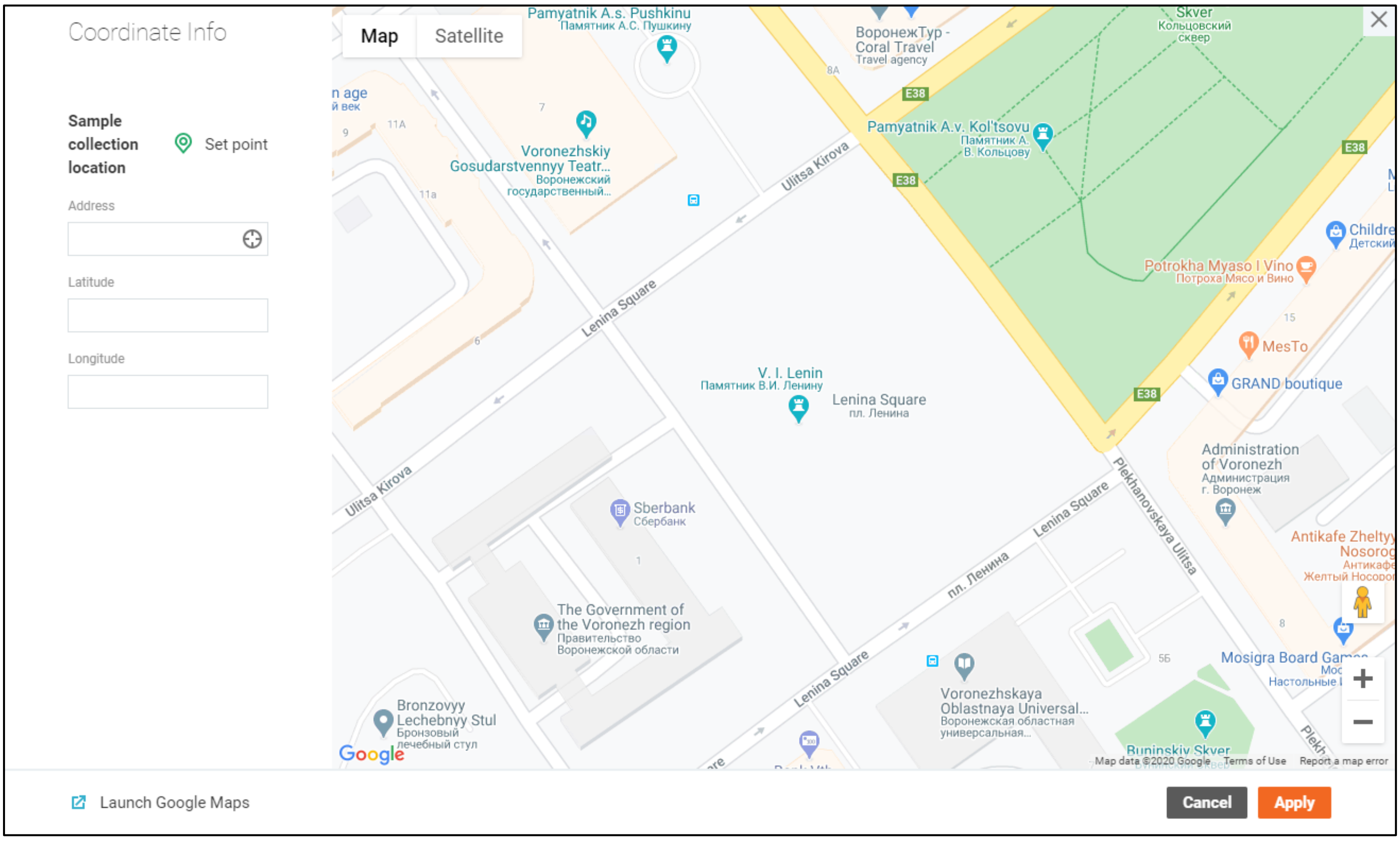
To add users, click the “Add recipient” button on the top-right and select those that should receive the report. To add a group of users, use the “Add reference” button.

The users can be filtered and sorted or deleted from the list.

Once you added all recipients, click the “Apply” button.

Sample Coordinate Info

Coordinate info is a window for geographical sample data input.



The window is available when you click on the Coordinate Info field value during the sample login.

You can only specify the **Sample collection location** by setting a location of a green pin on the map. Use the address field to find the needed location quicker.

Click the “Apply” button to save the coordinates.

Sample Explorer

Sample Explorer is the main screen of the **Sample Management** area.

All available samples are displayed in rows with options to sort and filter the samples according to certain criteria.

The data in the table can be sorted by clicking the field labels in the headers of the main or nested tables.

Subsequent clicks on the same fields reverse the sorting direction.

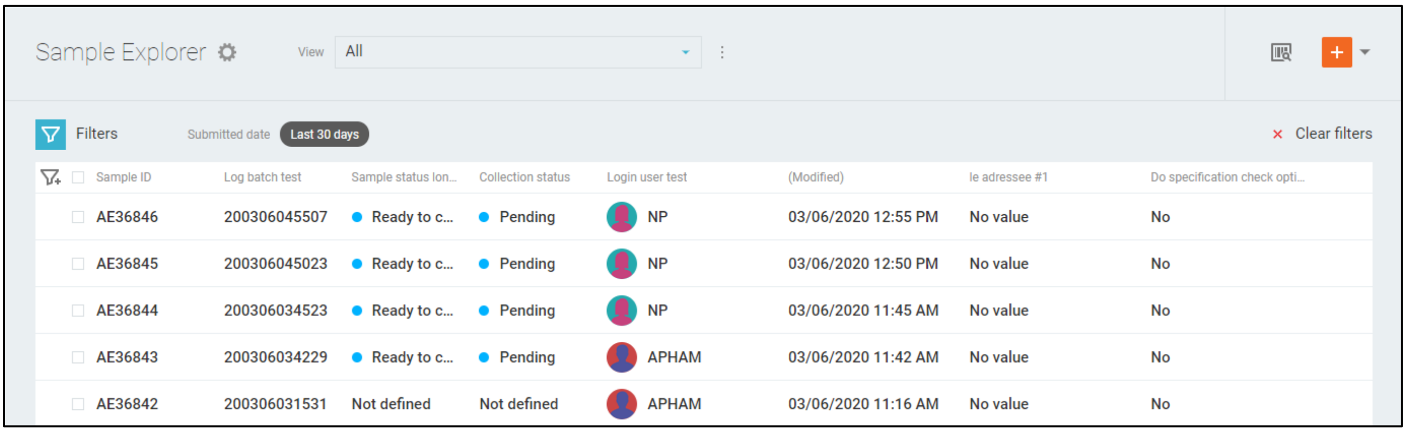
Default order:

- **Samples** - descending chronological order by submission date
- **Analyses** - serial number of the analysis in the sample

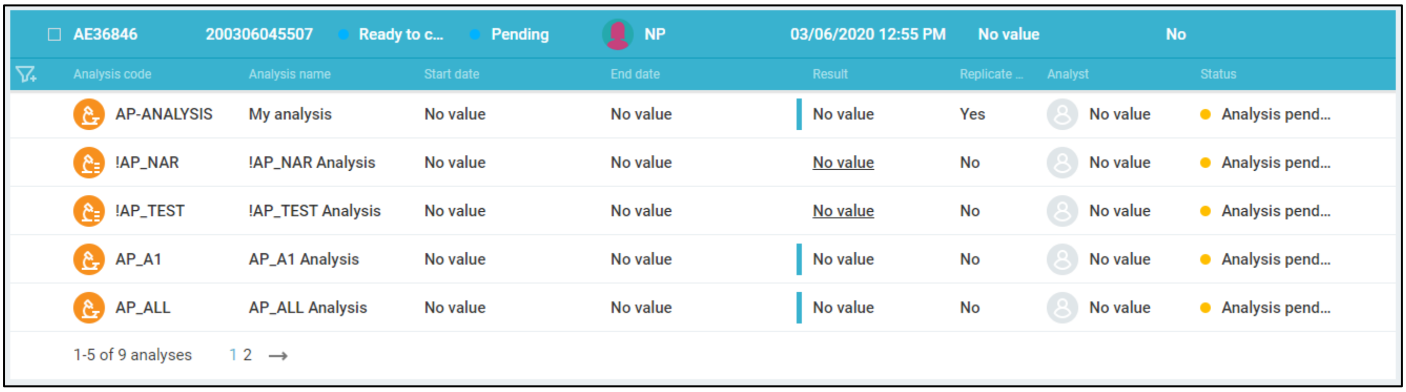
The set of displayed fields can be changed in the "Settings" window.

Please refer to explorer filters for details about filtering options.

You can navigate to the details of a particular sample, analysis or analysis results by clicking on corresponding fields within the table.



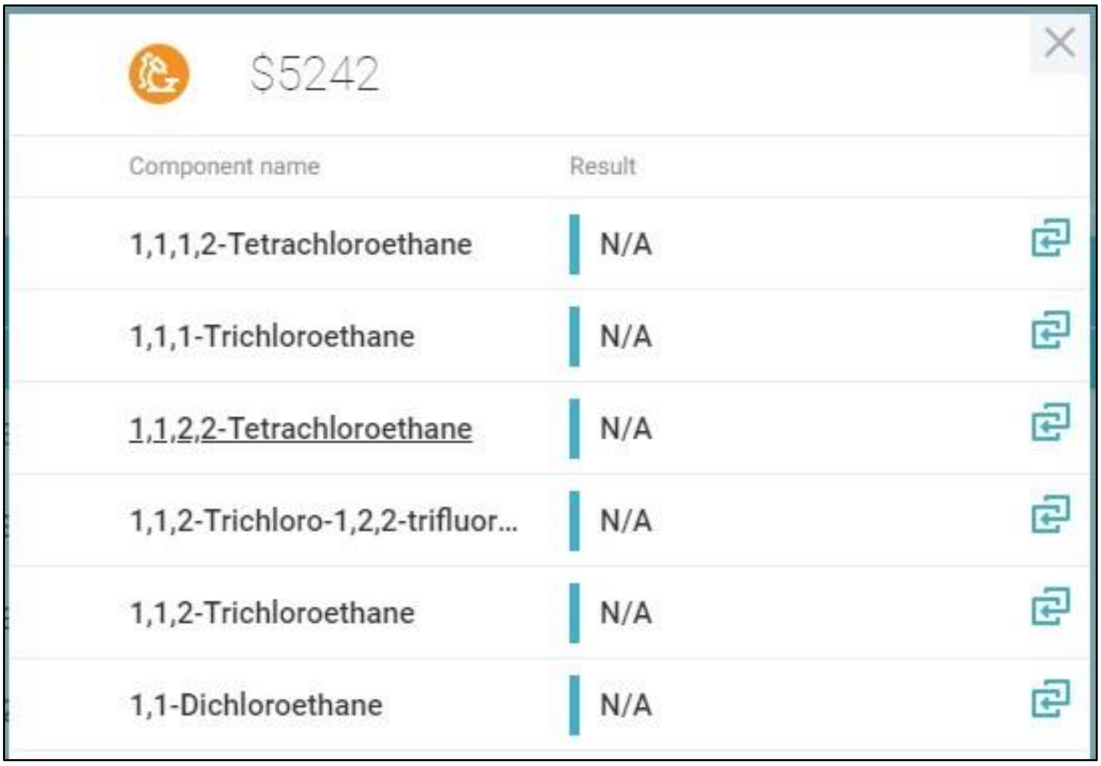
When you click on the sample row, the element expands revealing the list of analyses performed with the sample.



You can change the result of a particular analysis in the in-line mode according to the Inline result entry procedure or select a number of samples and fill their data on the result entry table by clicking the "**Enter Results**" button.

The **Analysis Replicates** screen of the single-component analysis can be accessed by clicking the value under the Replicate data.

The click on this value for multi-component analysis will open a window with a list of analysis components and their results. You can navigate to a particular component or browse its replicates from this window.



There is a set of buttons you will see in the top-right corner of the Sample Explorer screen (some of them are visible only when you have at least one sample selected):

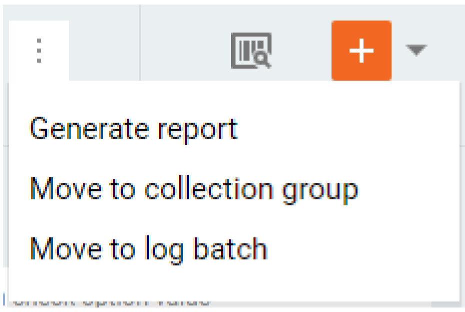
- Open **Sample Review** window for the selected sample(s). The drop-down menu next to the button allows to select the template beforehand.

- Open **Sample Edit** screen for the selected sample(s). The drop-down menu next to the button allows to select the template beforehand.

- Open **Result Entry** screen for the selected sample(s). The drop-down menu next to the button allows to select the template beforehand.

- Prints standard labels for the selected sample(s).

Some actions may be hidden under the action drop-down menu:



- Generate report – Creates a report of the type that you select in the appeared window.
- Move to collection group – Move selected sample(s) to a collection group that you select or create in the **Move to Collection Group** window.

- Move to log batch – Move selected sample(s) to a log batch that you select in the **Move to Log Batch** window.

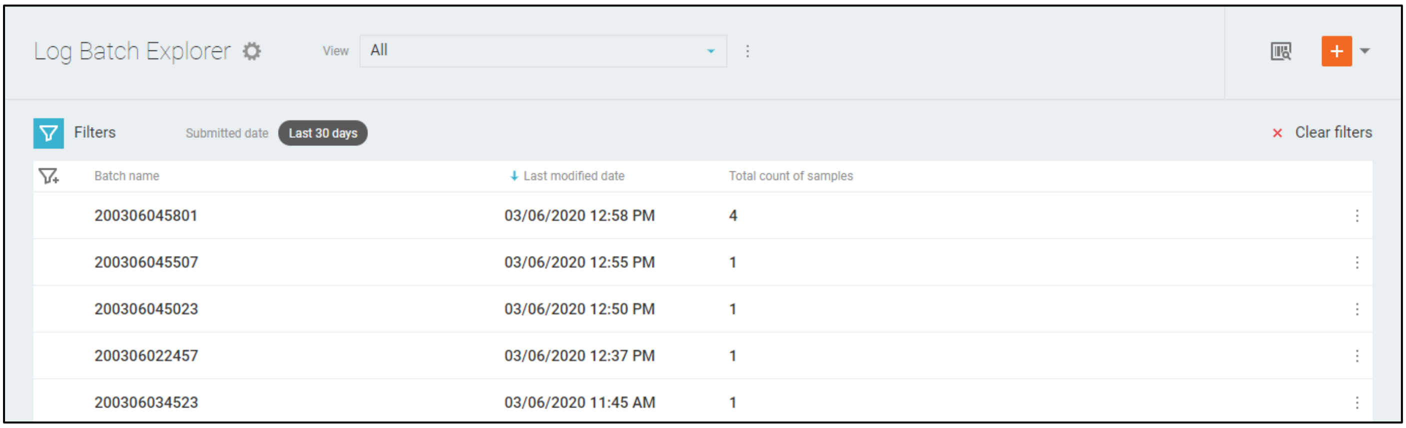
There are also two buttons that help to find and add samples to the system.

 - Open **Scan Samples** window.

 - Open **Sample Login** screen. The drop-down menu next to the button allows to select the template beforehand.

Log Batch Explorer

Log Batch Explorer has functionality similar to the sample explorer with exception that the samples are grouped in log batches and there are additional ways to sort and filter the table by the log batch fields.



When you click on the batch row, the element expands revealing the list of samples in that batch. The expanded element works the same way as the list of samples on the **Sample Explorer** screen.

There is a set of buttons you will see in the top-right corner of the Log Batch Explorer screen (some of them are visible only when you have at least one sample selected under a log batch):

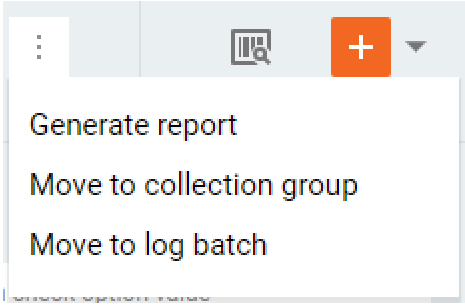
- Open **Sample Review** window for the selected sample(s). The drop-down menu next to the button allows to select the template beforehand.

- Open **Sample Edit** screen for the selected sample(s). The drop-down menu next to the button allows to select the template beforehand.

- Open **Result Entry** screen for the selected sample(s). The drop-down menu next to the button allows to select the template beforehand.

- Prints standard labels for the selected sample(s).

Some actions may be hidden under the action drop-down menu:



- Generate report – Creates a report of the type that you select in the appeared window.
- Move to collection group – Move selected sample(s) to a collection group that you select or create in the **Move to Collection Group** window.
- Move to log batch – Move selected sample(s) to a log batch that you select in the **Move to Log Batch** window.

There are also two buttons that help to find and add samples to the system.

 - Open **Scan Samples** window.

 - Open **Sample Login** screen. The drop-down menu next to the button allows to select the template beforehand.

Some log batches may contain various information depending on the template it was created with. This is indicated by an underline when you hover over the Batch name. Click on the batch name to open the **Log Batch Details** window.

Log Batch Details

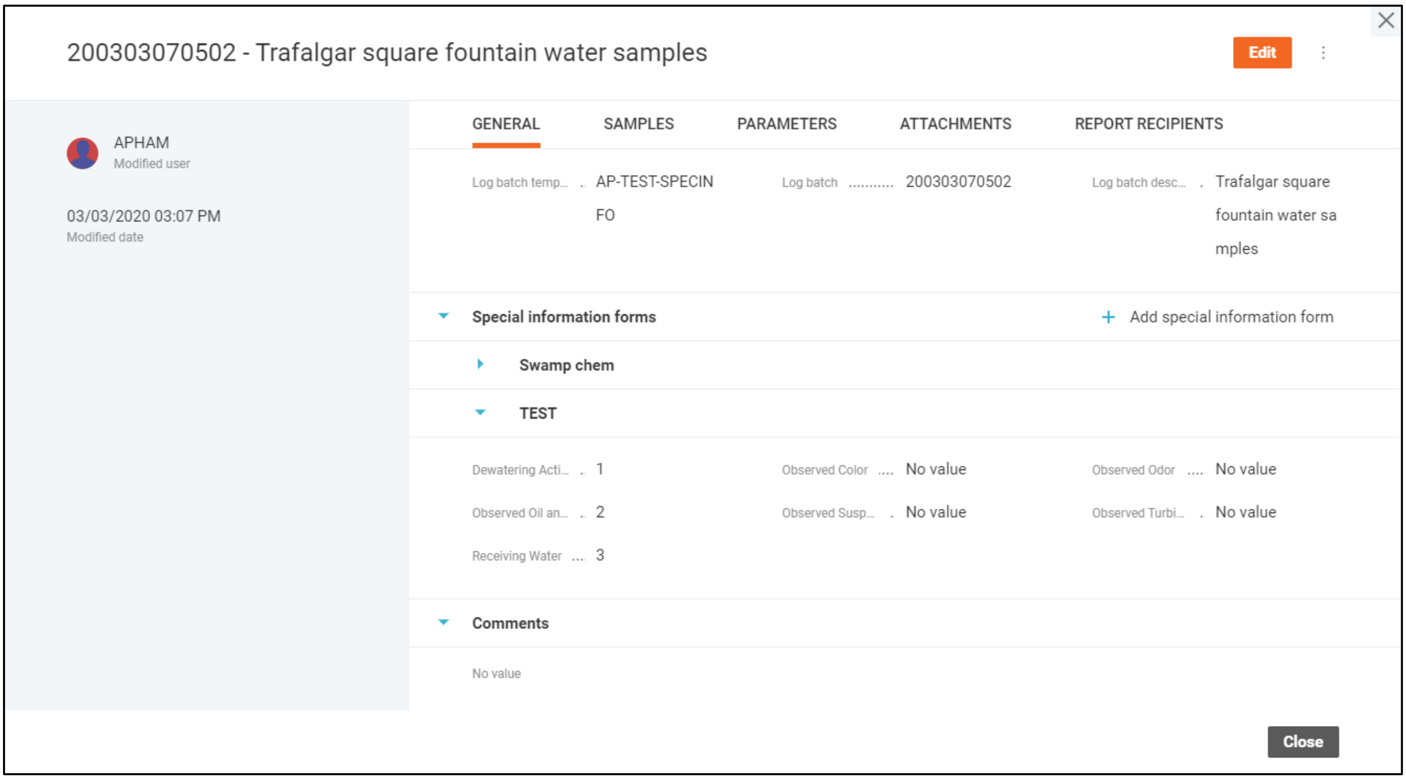
Certain log batch templates allow creation of complex log batches that may contain additional information related to all samples in the batch. The Log Batch Details window contains all information related to a particular log batch under the tabs.

The “General” tab contains the main log batch information along with the special forms data.

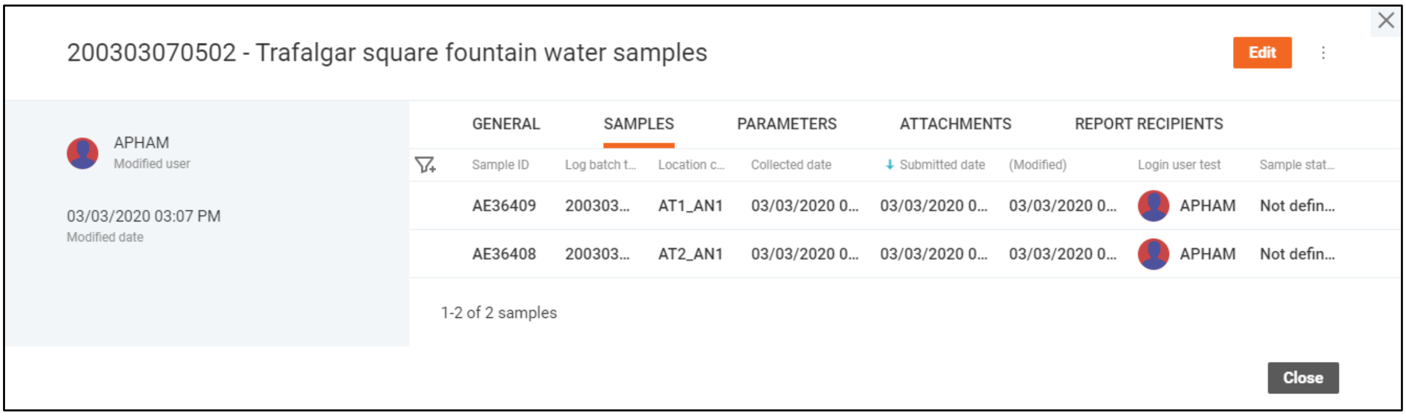
There are two types of special information forms:

1. Specified according to the log batch template with preset labels (prompts)
2. Unspecified special forms

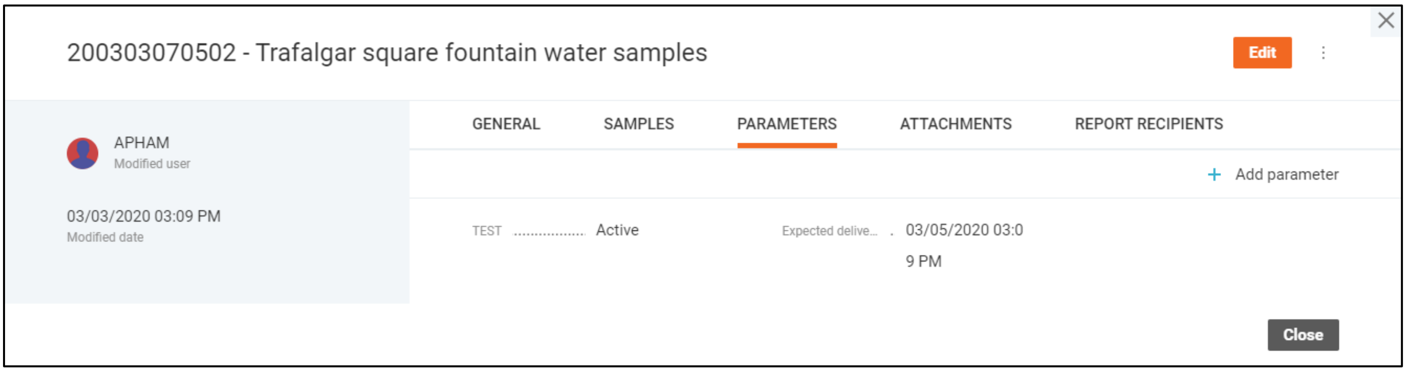
Users can leave comments for the batch. The comments will appear in the bottom of the “General” tab.



The “Samples” tab displays a list of samples of that log batch with sorting and filtering options.

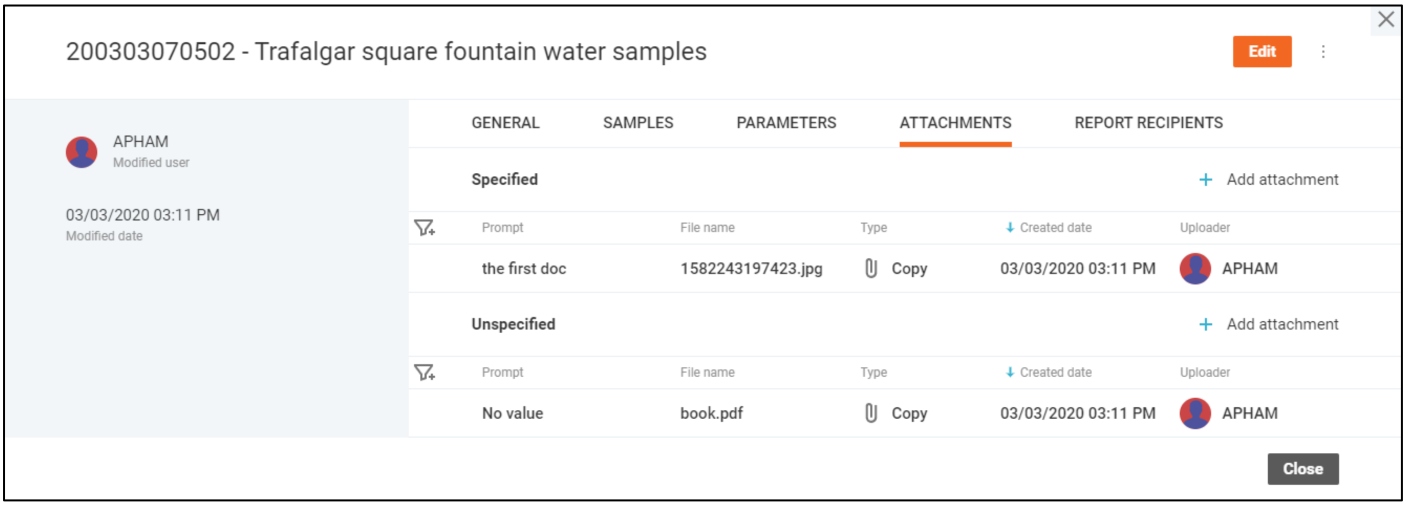


The “Parameters” tab contains custom fields of for this particular log batch. You can add, remove parameters, and set labels for the unspecified parameters.

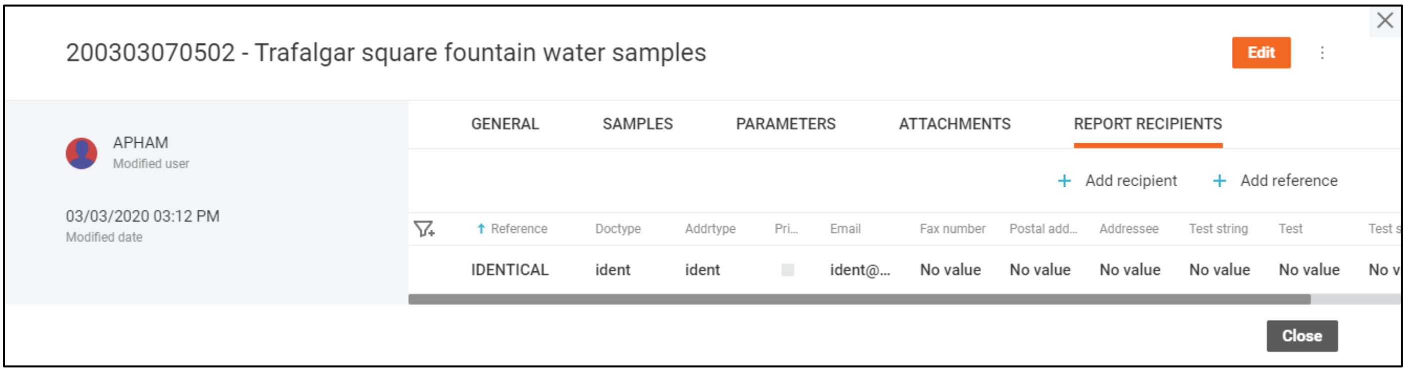


The “Attachments” tab contains all attachments related to the log batch in two groups:

3. Attachments specified according to the log batch template
4. Unspecified attachments



The “Report recipients” tab is similar to the **Sample Report Recipients** window, as it contains a list of all users that should receive the reports about the log batch.

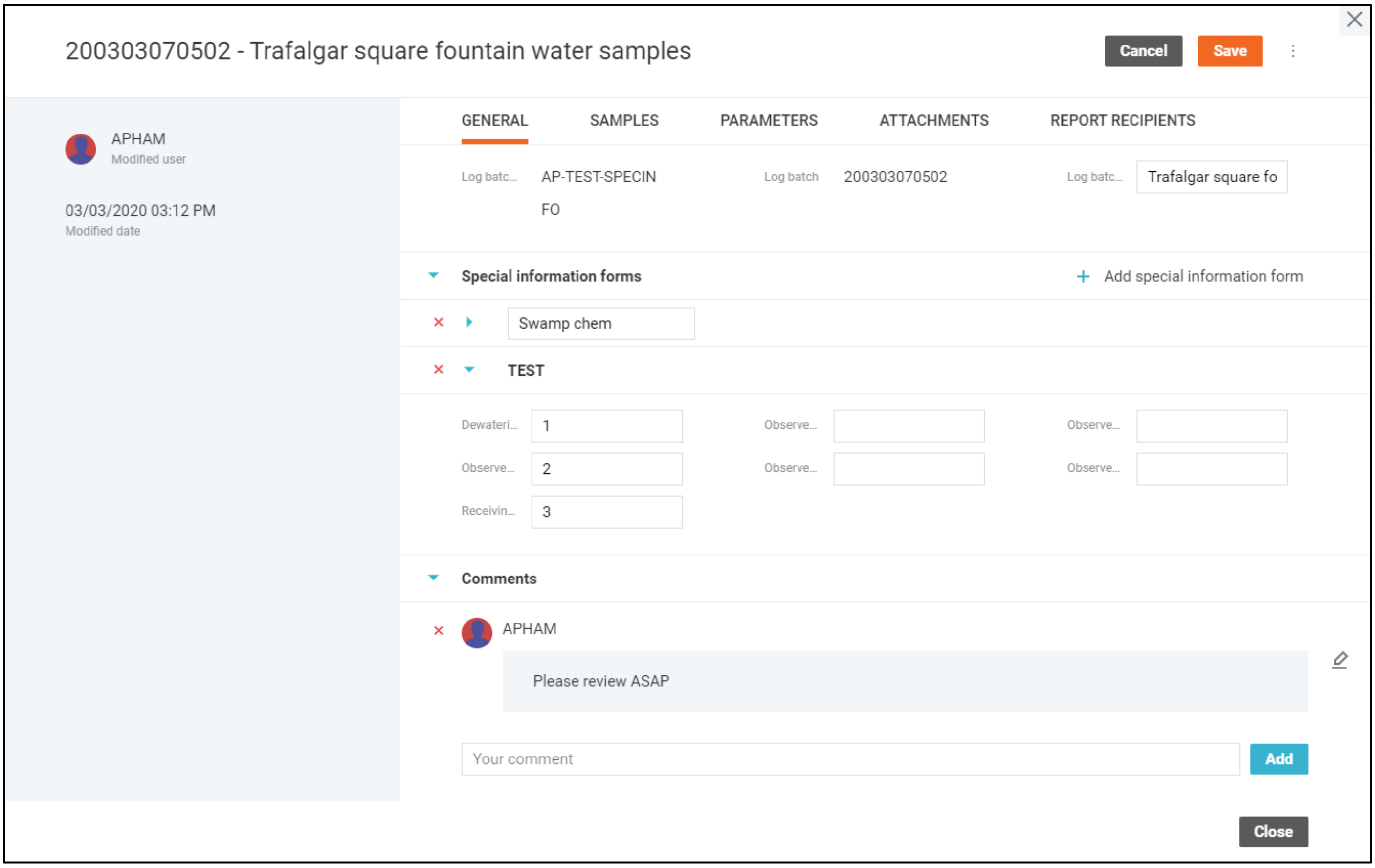


You can update the information displayed in the tabs or leave a comment by entering the “Edit” mode. To do this, you can click the “Edit” button at the top-right corner of the screen.

The “Edit” mode enables automatically when you update the batch by clicking on the following buttons:

- **Add special information form** button on the **General** tab,
- **Add parameter** button on the **Parameters** tab,
- **Add attachment** button on the **Attachments** tab,
- **Add recipient / Add reference** buttons on the **Report recipients** tab;

The “Edit” mode is indicated by the “Save” and “Cancel” button at the top-right corner of the window as well as some fields becoming editable.



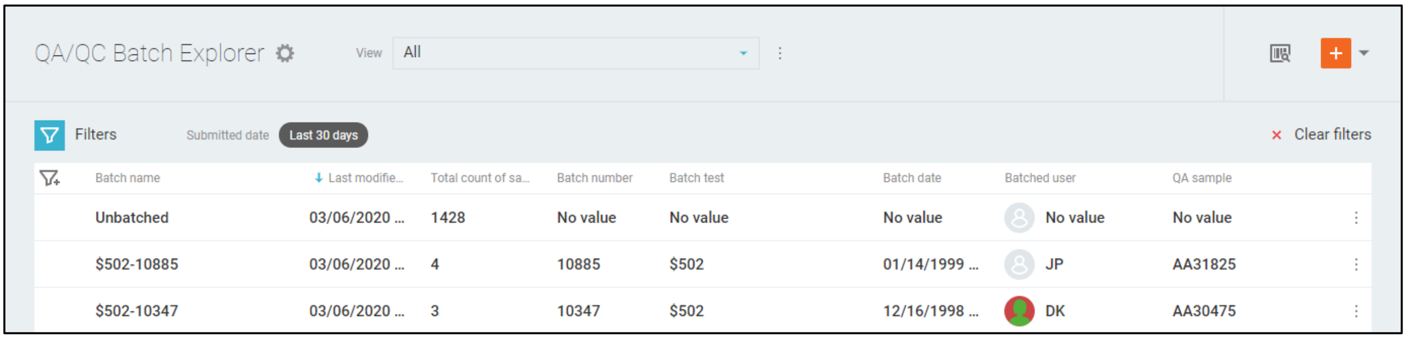
Click the “Save” button to apply the changes, and “Cancel” – to revert them.

All changes made to the log batch are reflected in the Audit Trail, available under the drop-down menu on the top-right.

QA/QC Batch Explorer

QA/QC Batch Explorer inherits the functions of log batch explorer, but displays the samples in QA/QC batches instead of log batches.

Note that the same sample may be a member of multiple QA/QC batches and represented in the table multiple times. These samples work synchronously when you perform certain actions with them, such as inline result entry.



There is a set of buttons you will see in the top-right corner of the QA/QC Batch Explorer screen (some of them are visible only when you have at least one sample selected under a batch):

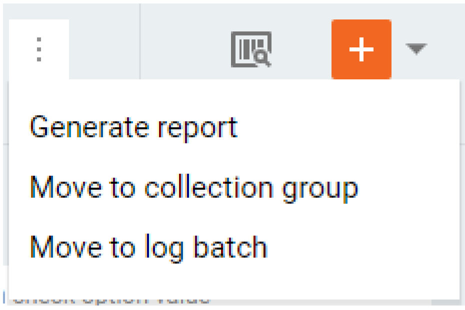
- Open **Sample Review** window for the selected sample(s). The drop-down menu next to the button allows to select the template beforehand.

- Open **Sample Edit** screen for the selected sample(s). The drop-down menu next to the button allows to select the template beforehand.

- Open **Result Entry** screen for the selected sample(s). The drop-down menu next to the button allows to select the template beforehand.

- Prints standard labels for the selected sample(s).

Some actions may be hidden under the action drop-down menu:



- Generate report – Creates a report of the type that you select in the appeared window.
- Move to collection group – Move selected sample(s) to a collection group that you select or create in the **Move to Collection Group** window.
- Move to log batch – Move selected sample(s) to a log batch that you select in the **Move to Log Batch** window.

There are also two buttons that help to find and add samples to the system.

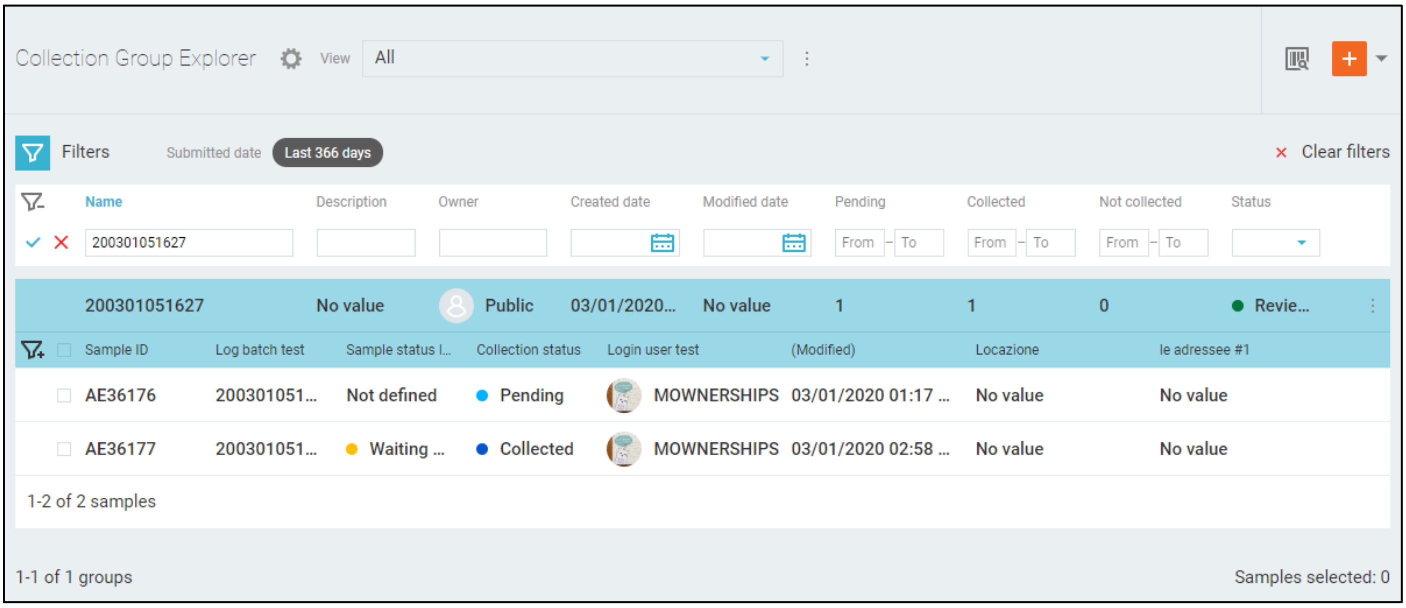
- Open **Scan Samples** window.

 - Open **Sample Login** screen. The drop-down menu next to the button allows to select the template beforehand.

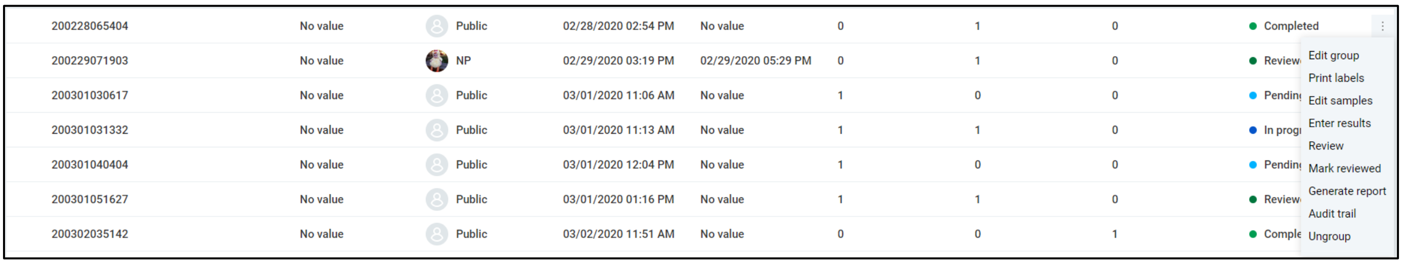
Collection Group Explorer

Collection group explorer displays the information about the samples in a similar way to the **Sample Explorer**, except that all samples are shown under their respective collection groups. There are also special options to filter and sort by collection group fields.

To view the samples of a particular collection group, click on it to expand the list of samples. The list of samples supports sorting and filtering just like on the **Sample Explorer** page.



There is a drop-down menu on the right-hand side of every collection group that contains the list of actions available to the user.



Apart from the regular actions, there are also ones available to collection groups only:

- **Edit group** opens a window where you can change the collection group attributes such as name, description and owner.
- **Audit trail** opens the **Audit Trail** for the particular collection group.
- **Ungroup** action deletes the collection group removing all samples from it as if they were added without a collection group. However, the sample data is not lost, as all samples of the same log batch without a group are shown in the list under a fake collection group that has no data and called "Ungrouped".

There is a set of buttons you will see in the top-right corner of the Collection Group Explorer screen (some of them are visible only when you have at least one sample selected under a collection group):

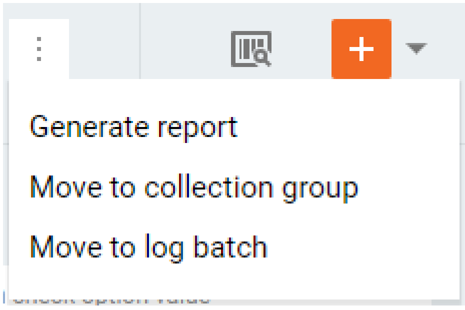
 - Open **Sample Review** window for the selected sample(s). The drop-down menu next to the button allows to select the template beforehand.

- Open **Sample Edit** screen for the selected sample(s). The drop-down menu next to the button allows to select the template beforehand.

- Open **Result Entry** screen for the selected sample(s). The drop-down menu next to the button allows to select the template beforehand.

- Prints standard labels for the selected sample(s).

Some actions may be hidden under the action drop-down menu:



- Generate report – Creates a report of the type that you select in the appeared window.
- Move to collection group – Move selected sample(s) to a collection group that you select or create in the **Move to Collection Group** window.
- Move to log batch – Move selected sample(s) to a log batch that you select in the **Move to Log Batch** window.

There are also two buttons that help to find and add samples to the system.

- Open **Scan Samples** window.

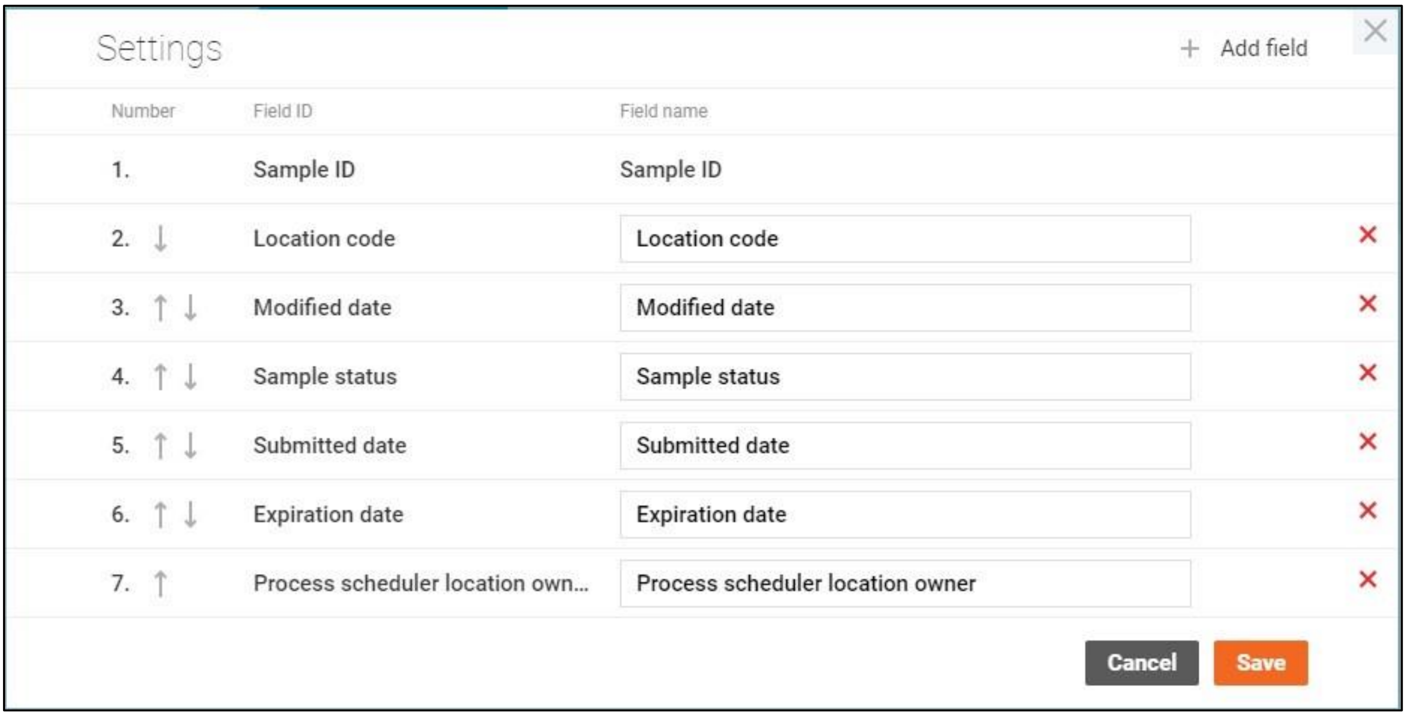
- Open **Sample Login** screen. The drop-down menu next to the button allows to select the template beforehand.

Explorer Settings

The set of fields displayed in the **Sample Management Explorer** table can be configured in the "**Settings**" window.

To access the window, click the **Column options** button above the sample explorer table.

The field configuration requires an appropriate privilege to be assigned to your profile. Once you have this privilege assigned, the "**Settings**" window becomes available in the edit mode.



Here you can change the order of the fields, rename them, remove certain fields from the table or add new ones.

"**Cancel**" button discards all changes in the settings.

"**Save**" button applies the settings and reloads the table.

Other users are not affected by your settings.

Explorer Filters

The data in the **Sample Management** area is displayed according to the filters.

You can narrow down the displayed data using four independent types of filters:

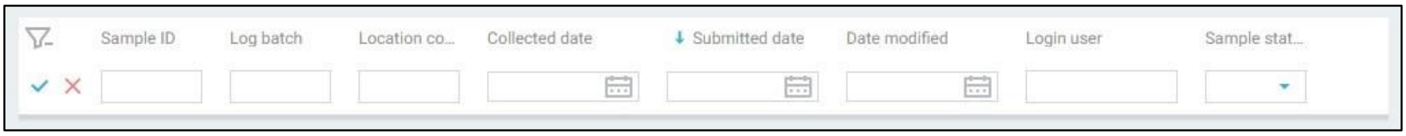
- **Quick Filters** available in the quick filter bar opened by clicking the **gray funnel icon** in the table header.
- **Views** available under the **View** drop-down list.
- **Advanced Filters** available in the sidebar opened by clicking the **white funnel icon** above the table.
- **Preset Filters** available in the very bottom of the sidebar.

Quick Filters

Quick Filters allow you to apply simple filters directly from the tables.

To filter the elements, expand the quick filter bar by clicking the **funnel icon** on the left-hand side of the table header, specify the filters, and apply them by clicking **check mark icon** in the quick filter bar.

The **cross icon** in the quick filter bar clears all quick filters.

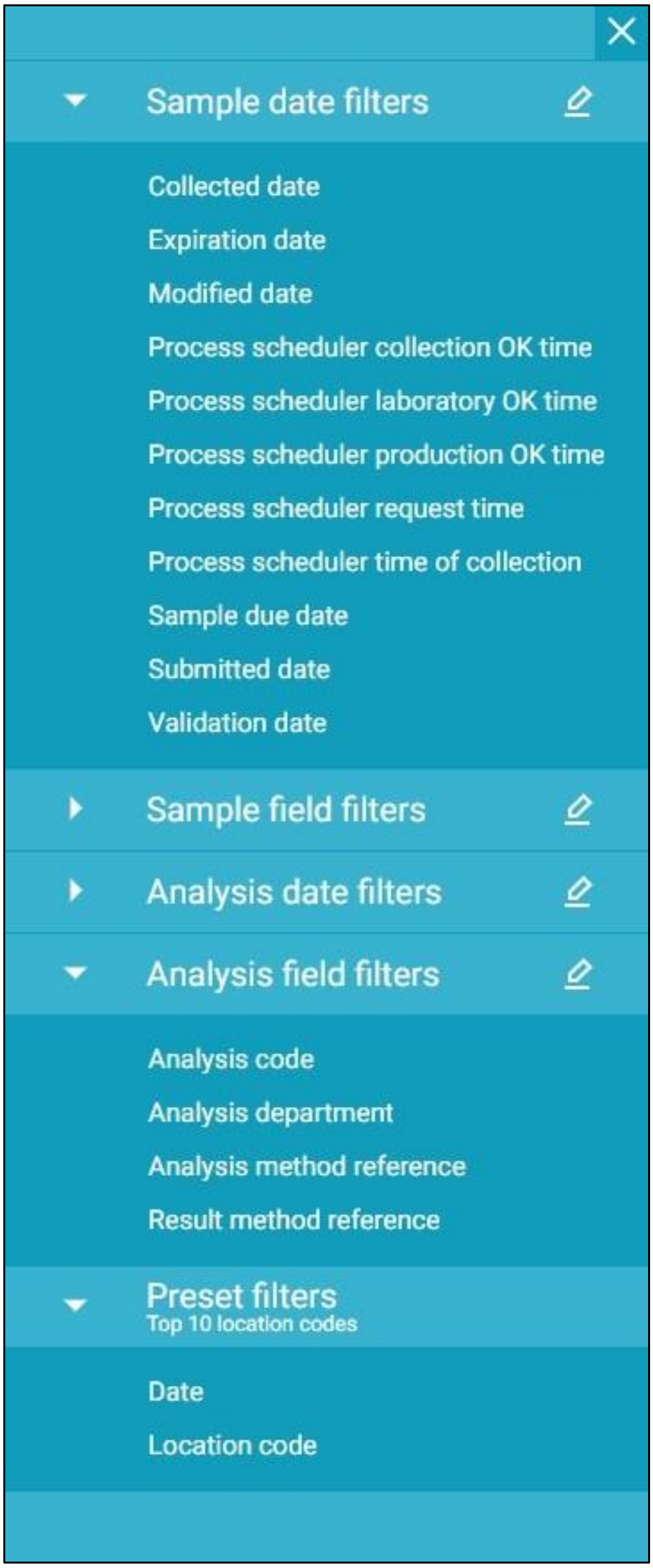


Advanced Filters

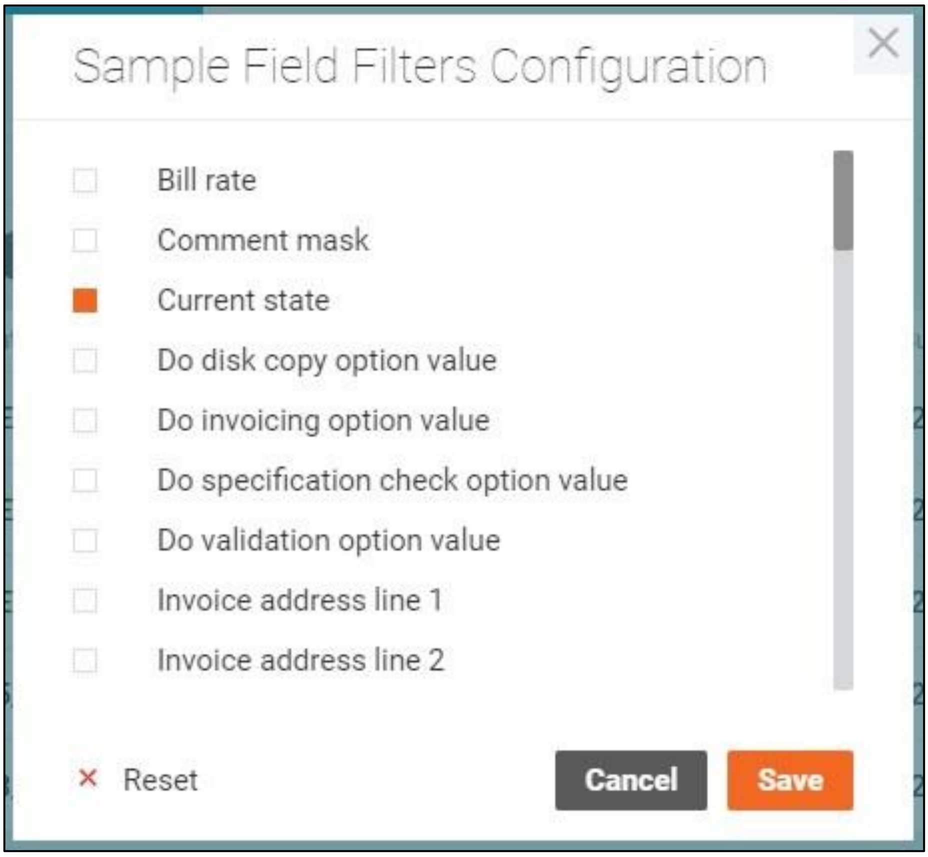
Advanced filters give you extended control over the table by allowing to filter the data by hidden fields.

The **Advanced Filters** are configured in the sidebar, where all available filters are listed in expandable groups.

The sidebar is toggled by the **funnel icon** above the table.



By clicking the **pencil icon** next to the group name, you can select filters that should appear in the sidebar.

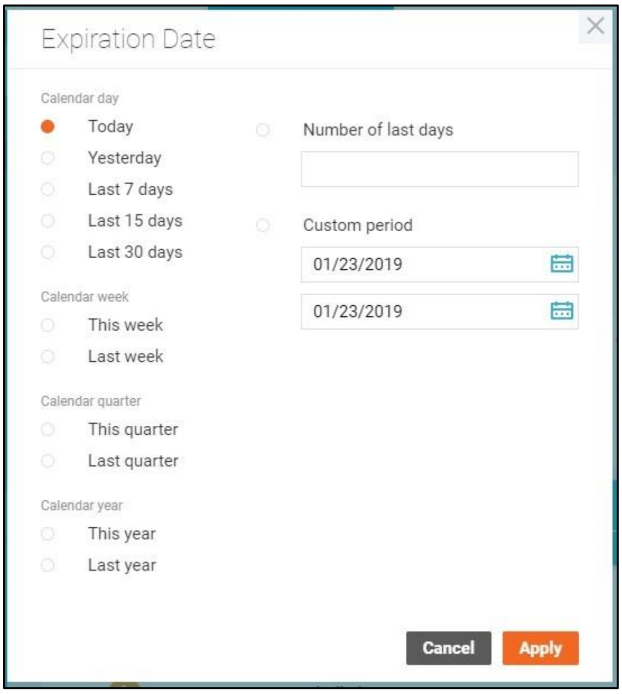


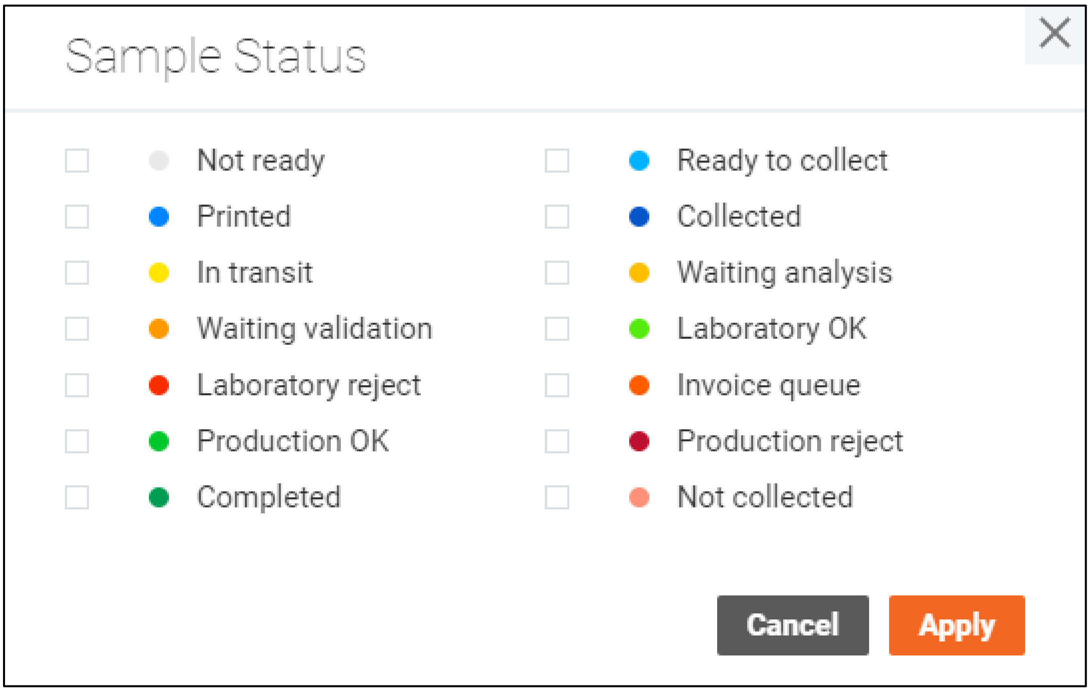
The advanced filters are divided into three groups:

- **Sample filters** applied to the lists of samples
- **Analysis filters** applied to the lists of analyses
- **QA/QC batch filters** applied to the list of QA/QC batches (Appears on QA/QC batch explorer only)
- **Collection group filters** applied to the list of Collection groups (Appears on Collection group explorer only)

Sample and analysis filters are also divided into groups by field data type:

- **Date filters** applied to all fields of date-time data type
- **Field filters** applied to the fields of other data types





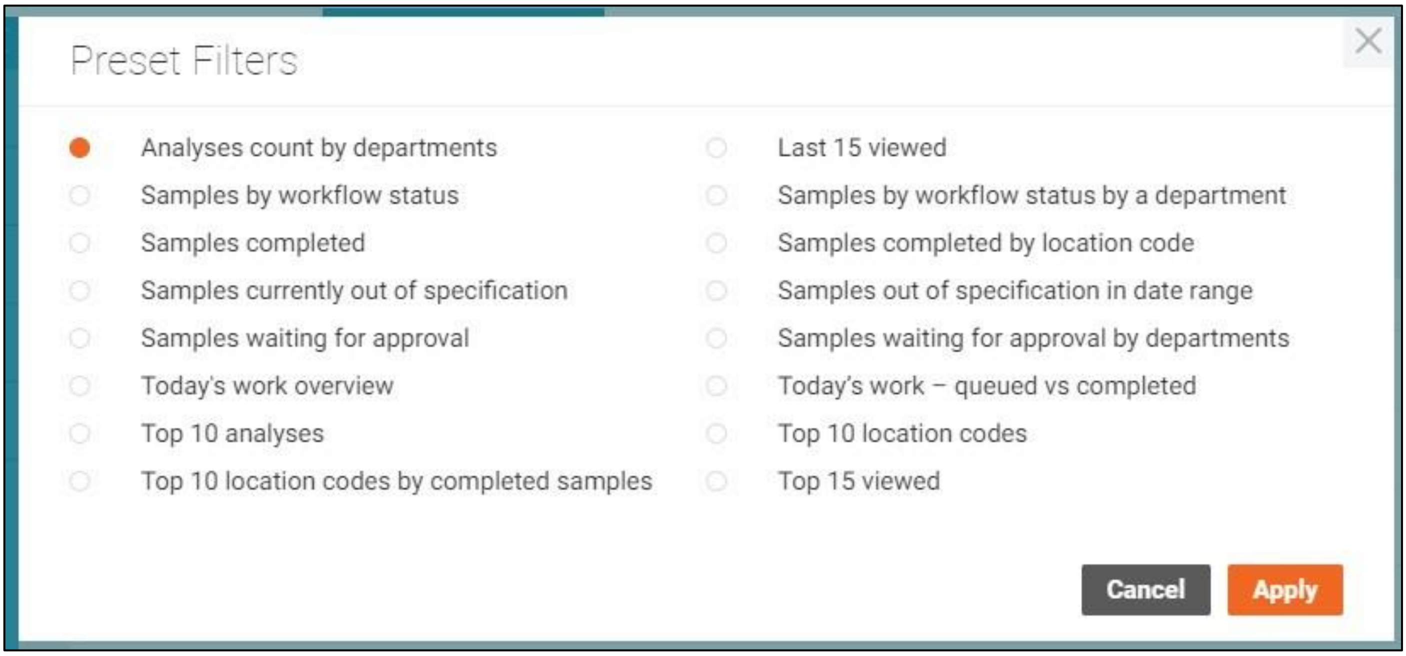
Once you specify an advanced filter, it appears in the new chip above the explorer table.

You can adjust the filter by clicking on a particular chip or remove it with the **cross icon** inside the chip.

"**Clear filters**" button on the right-hand side of the screen removes all custom filters applying only the default ones instead.

Preset Filters

The **Presets Filters** contain most popular sets of filters. You can find them in the sidebar toggled by the **funnel icon** above the table.



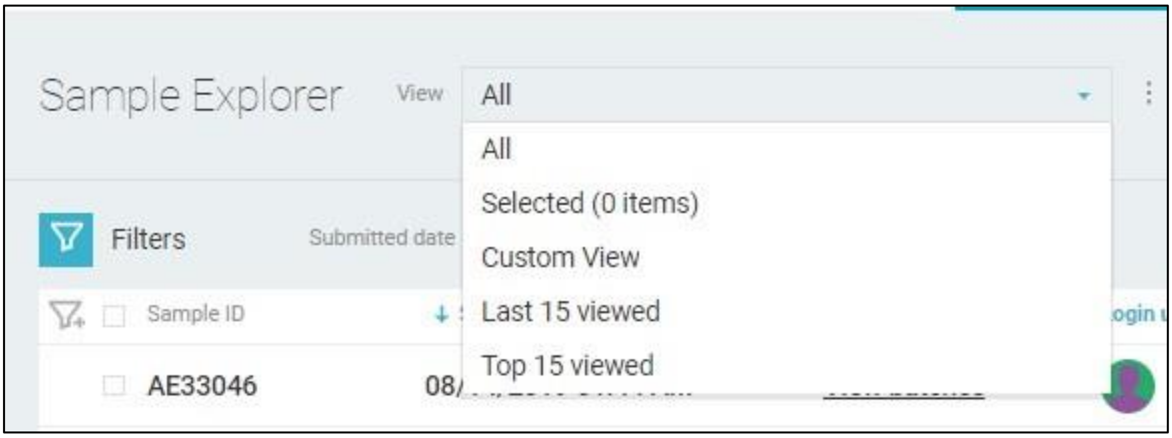
Once you apply one of the presets, this will be indicated above the explorer table.

You can adjust the filter by clicking on the corresponding chips or by opening the sidebar and changing the preset filter values there.

The dashboard tiles apply one of these presets automatically when you navigate to the sample explorer by clicking on the dashboard tile chart.

Views

The **Views** work like your personal preset filters that can be customized and saved for later. Views are saved separately for each sample management table and available only to the user who created them.



The default view "**All**" displays data about all samples submitted within the last 30 days.

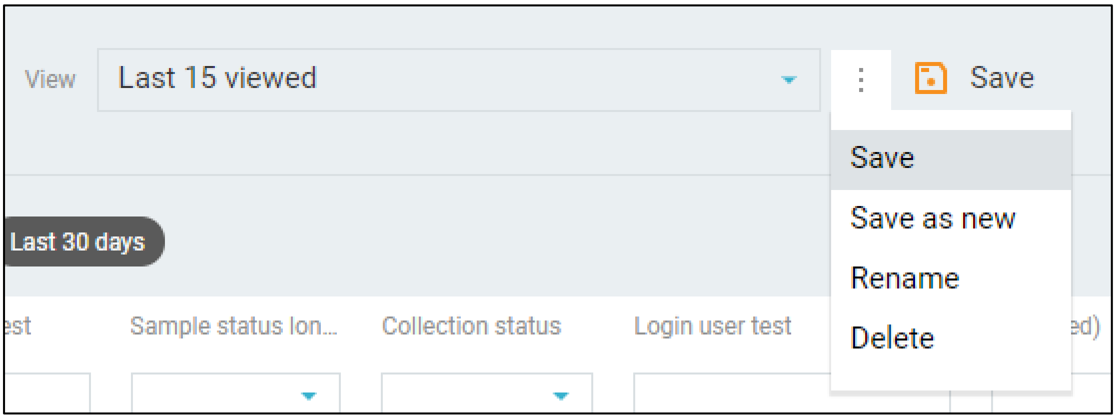
You can create a new view by applying desired filters (quick or advanced) to the table and selecting the "**Save as new**" option under the drop-down menu next to the **View** field.

Once you provide the name and click the "**Create**" button, the new view becomes available as one of the **View** field options and applied as the active one.

You can update the custom view while it is active by adjusting filters and clicking the "**Save**" button appeared next to the **View** field.

To rename custom view, select the "**Rename**" option under the drop-down menu next to the **View** field.

To delete it, select the "**Delete**" option.



Reports

There is an option to export the data displayed on the **Sample Explorer** screen to a PDF file using **Reports**.

To build a report, select a set of samples by clicking checkboxes on the left-hand side of corresponding entries.

The desktop version of the web application provides the following key modifiers to ease the selection process:

Ctrl (Control) + Left Mouse Button Click (on the whole entry)

- Toggles the selection of the sample instead of navigating to the Sample Details screen.

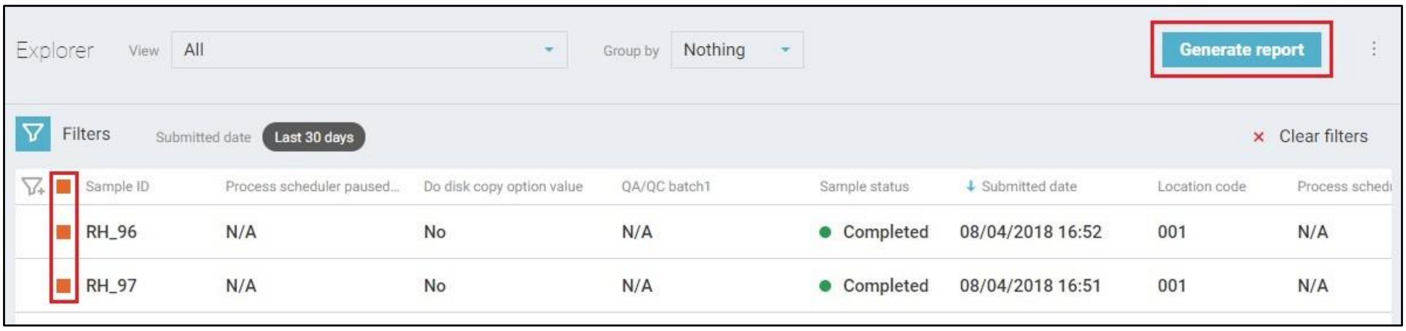
Shift + Left Mouse Button Click (on the whole entry)

- Toggles the selection of multiple samples in a range

You can preview the selection either by applying corresponding filter in the "**View"** drop-down list or by clicking the "**Samples selected: #"** button in the bottom-right corner of the screen.

To clear the selection, click the "**Clear selection**" button in the bottom-right corner of the screen.

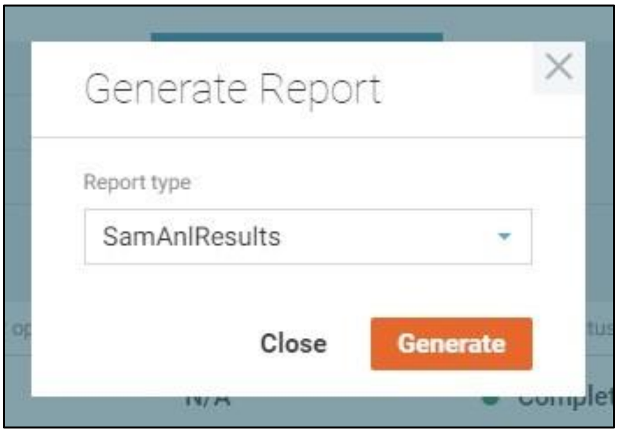
Once the selection is complete, click the "**Generate report**" button in the top-right corner of the screen.



The report generation dialog provides an option to select one of the report templates defined in the system by the administrator.

Report templates are responsible for the way the data is formatted.

Click the "**Generate**" button to perform the generation of a report according to the selected template and receive the PDF file.



Sample Details

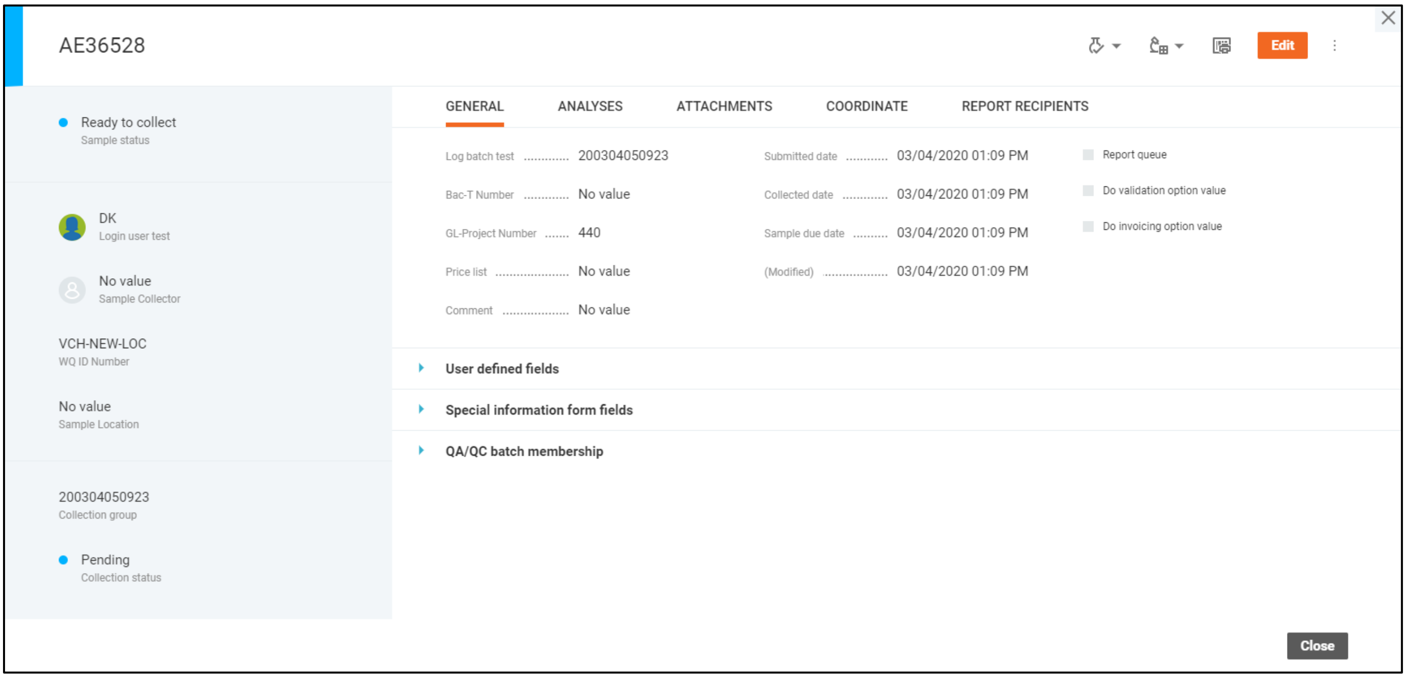
Sample Details screen displays all information about the sample and all related analyses.

There is a set of special buttons in the right-hand side of the screen:

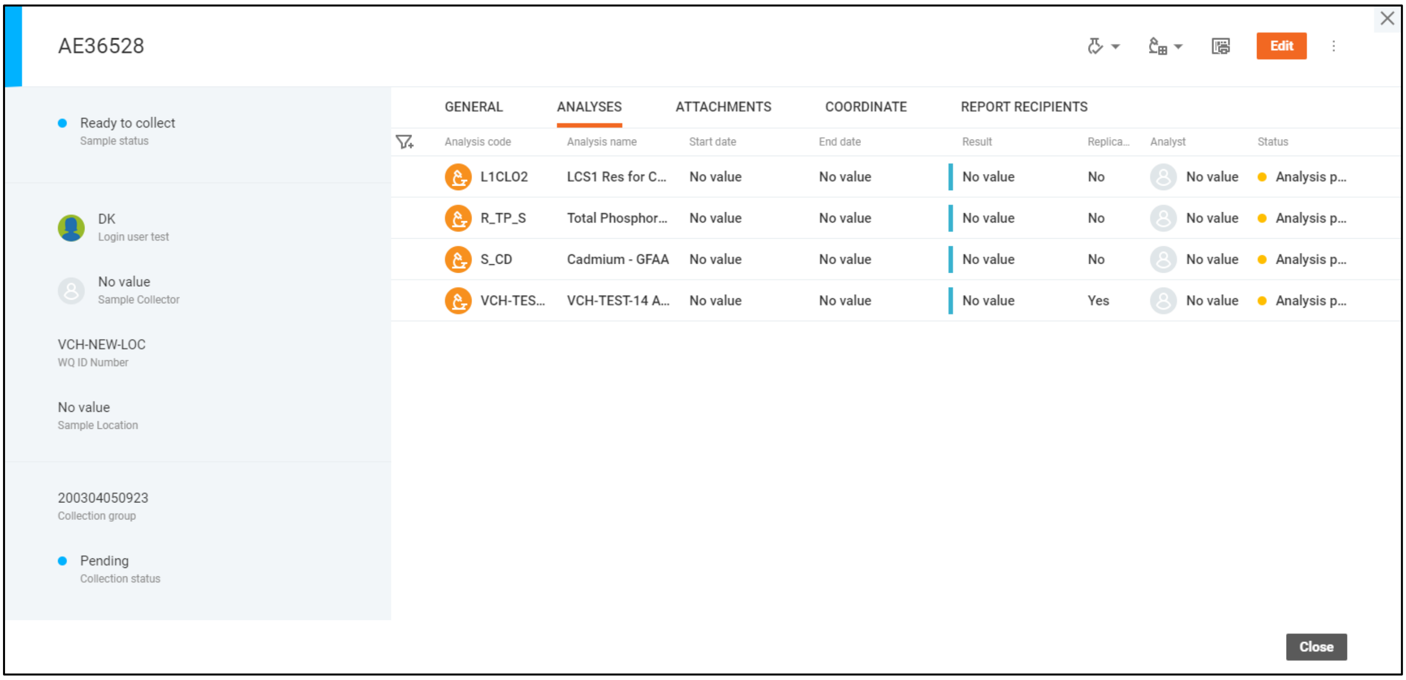
-  - Open **Sample Review** window for the current sample. The drop-down menu next to the button allows to select the template beforehand.
-  - Open **Result Entry** screen for the selected sample(s). The drop-down menu next to the button allows to select the template beforehand.
-  - Prints standard labels for the current sample.
- "**Edit**" button enables the **Sample Editing** screen.
- Special action menu options:
    - "**Status History**" option opens the **Sample Status History** window with the information on sample status changes.
    - "**Audit Trail**" option allows you to browse all changes made to the sample on the **Audit Trail** screen.
    - “**Move to collection group**” option needed to move the sample to another collection group or create a new one for it.

The sample data is displayed on multiple tabs:

General tab contains the main sample data that is organized in expandable.



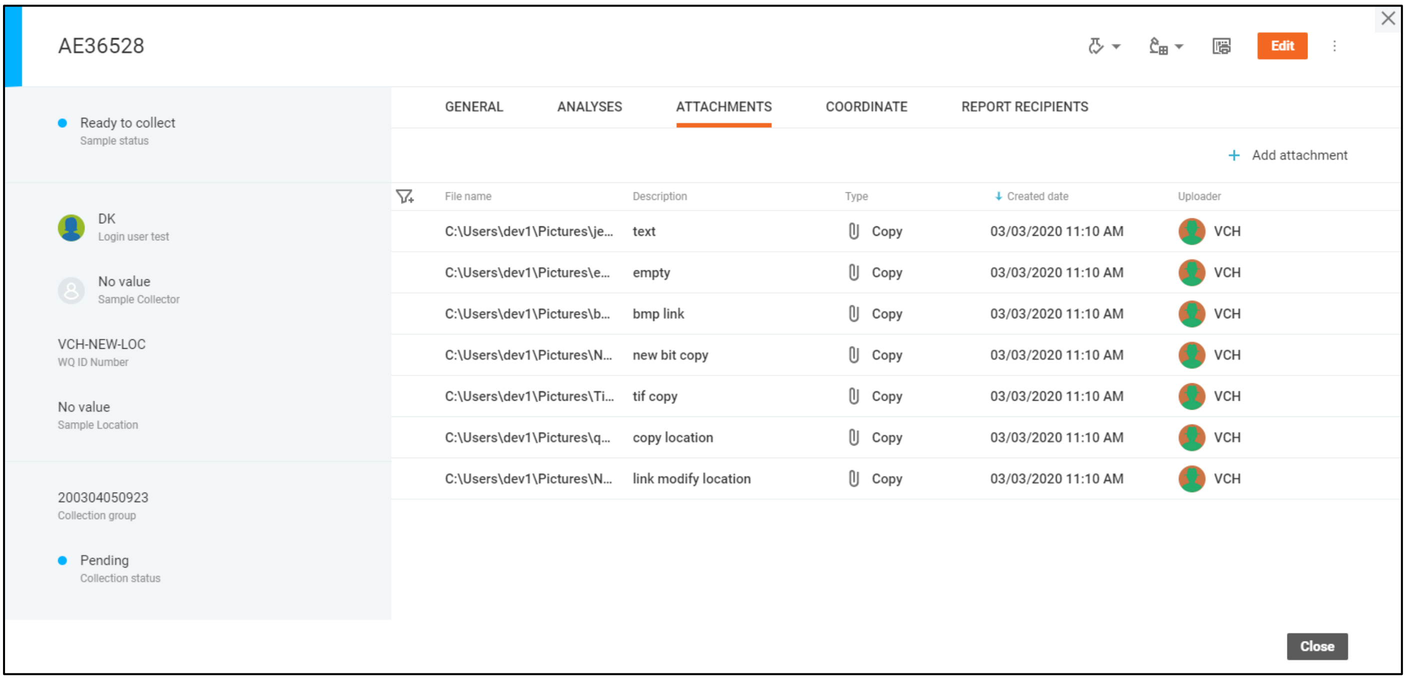
The related analyses are displayed under the **Analyses** tab in a list with filtering options. You can navigate to a particular analysis by clicking the analysis code, or enter the result directly in the list.



You can change the result of a particular analysis in the in-line mode by clicking the result value. You can select one of the suggested results or specify a custom one. To discard or apply the changes made to the result, click the corresponding button appeared on the right-hand side of the field.

When the analysis has replicates, you can access the **Analysis Replicates** screen by clicking the "**Yes**" button under the Replicate data.

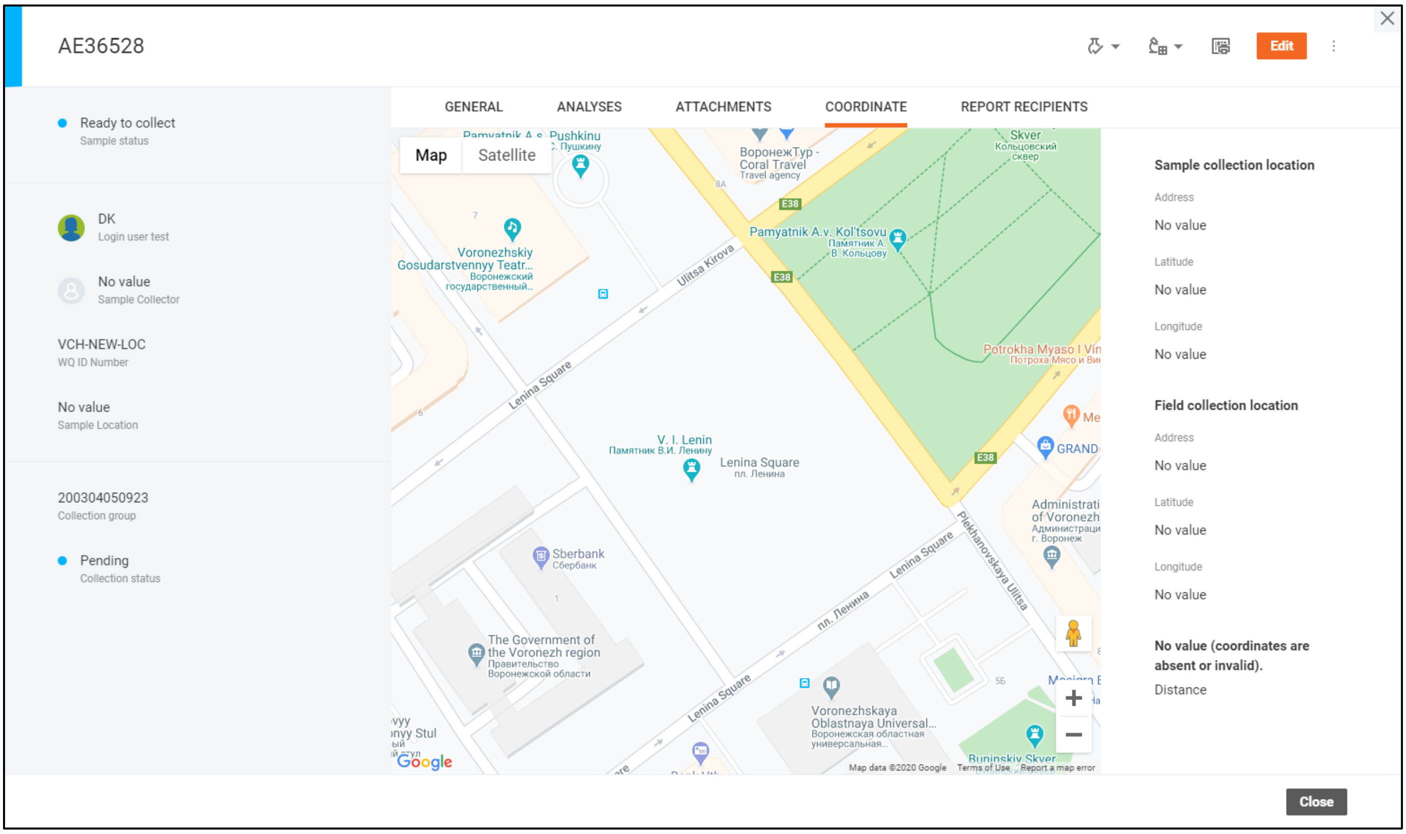
The sample attachments are listed under the **Attachments** tab. You can manage them by entering the **Sample Editing** mode.



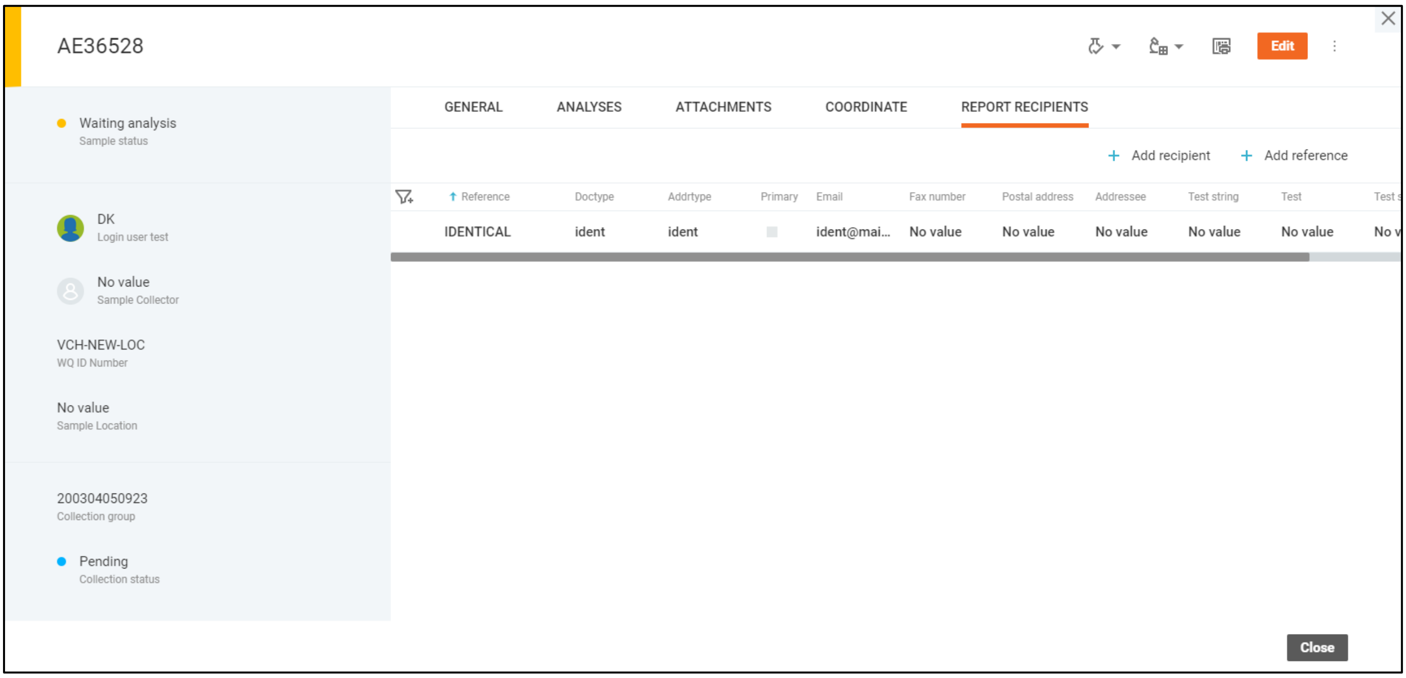
The **Coordinate** tab shows a map with the sample and field collection locations.

During the sample login, you can only specify the **Sample collection location** by setting a location of a green pin on the map. But once the sample is collected, you can also set the Field collection location.

When the sample has both locations specified, the distance between them will be displayed below.



The **Report recipients** tab contains users that receive sample reports.

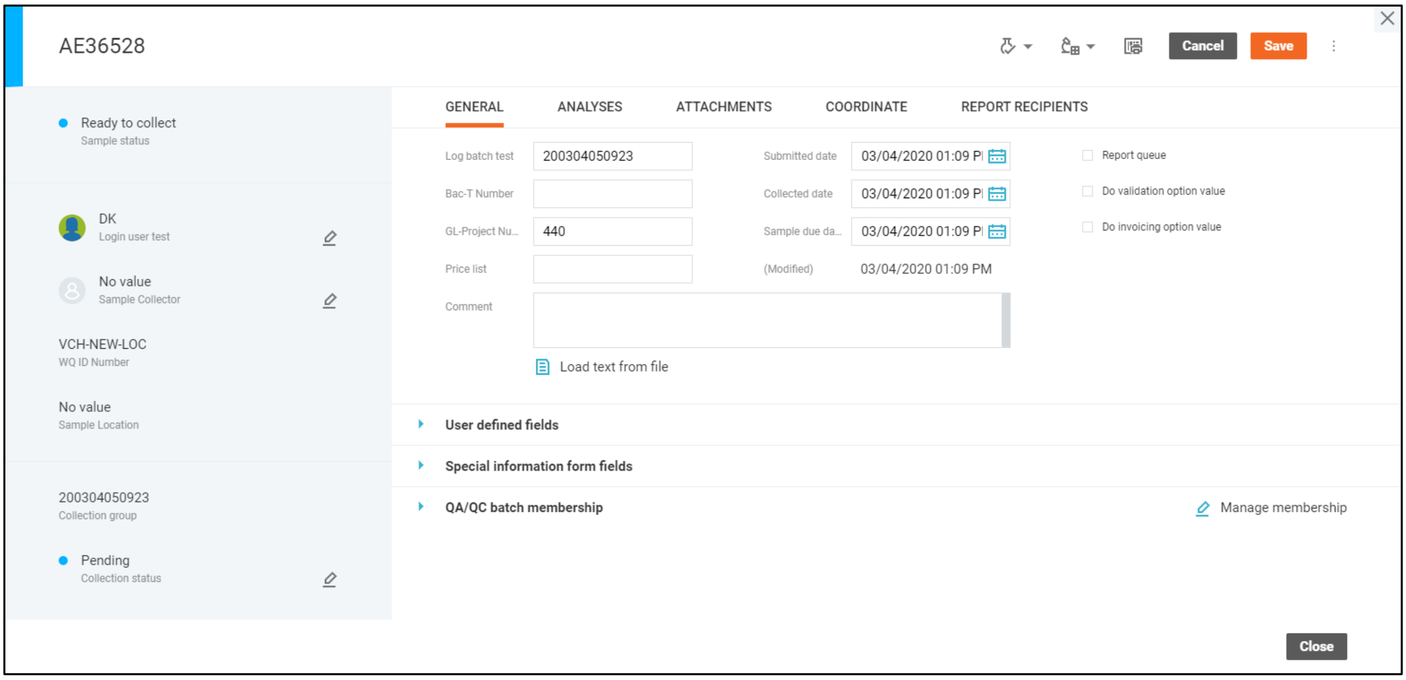


Sample Editing

Sample Editing screen is enabled when you press the "**Edit**" button on the **Sample Details** screen, by double-clicking any of the editable fields or with the “Add attachment/recipient/reference” button in the tabs.

In the edit mode, certain fields of the sample on all tabs become editable and the "**Edit**" button is replaced with "**Save**" and "**Cancel**" buttons that apply or discard the changes respectively.

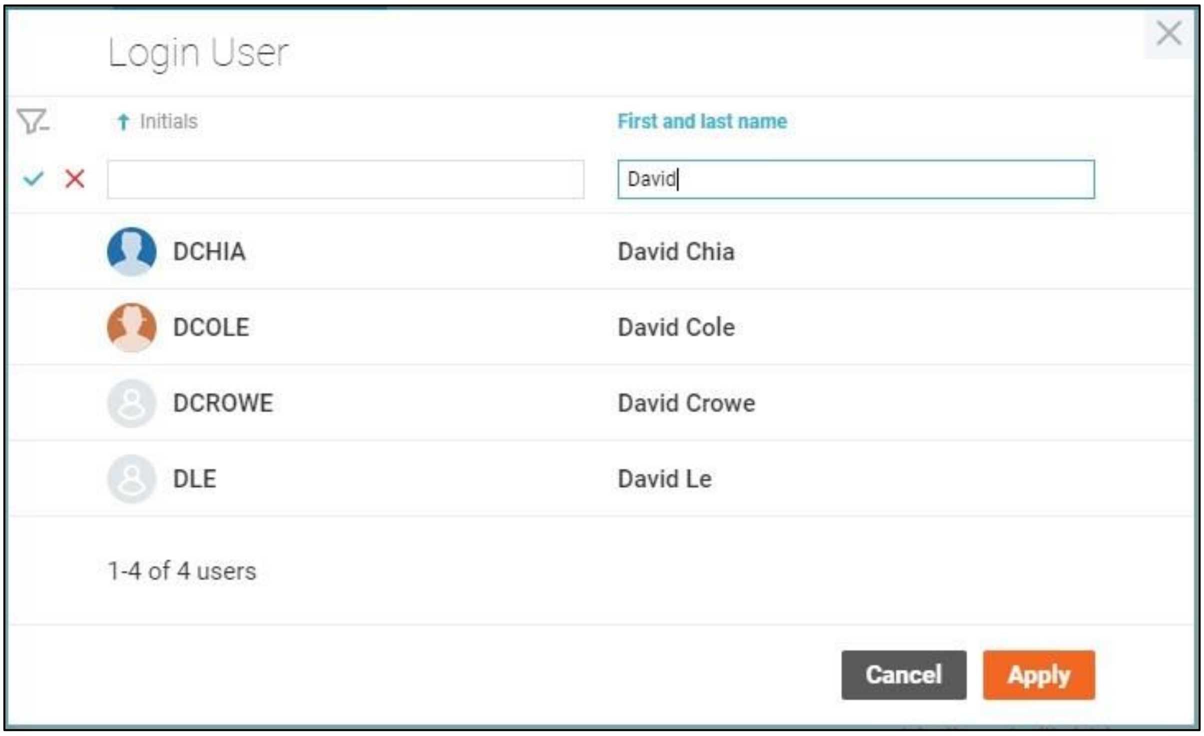
Every change can be discarded separately by the "**Discard**" button next to the updated field.



The Login user and Sample collector can be selected in the user selection window opened by the corresponding buttons next to these fields.

The available users are displayed in a paginated list with sorting and filtering options.

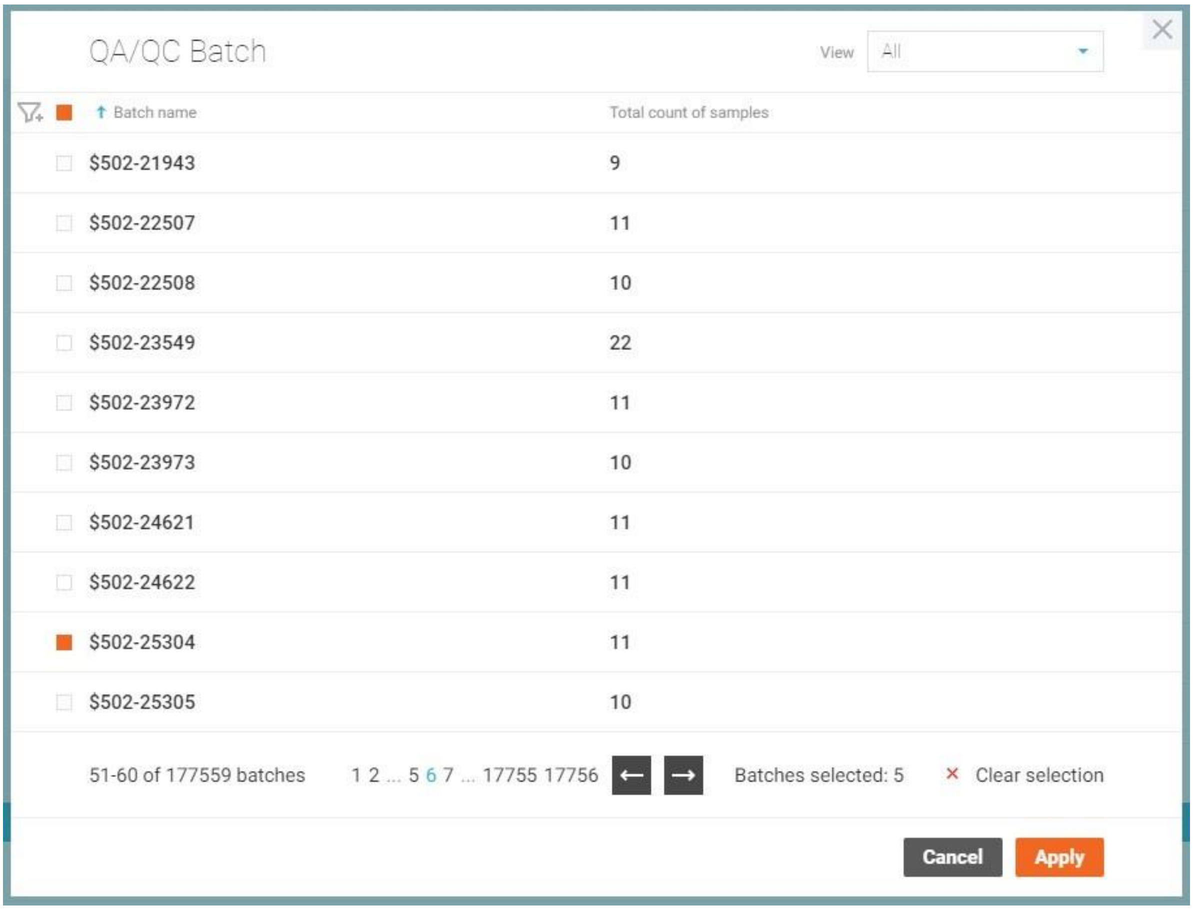
To set a user as the login user or the sample collector, select him in the list and click the "**Apply**" button.



The batches listed under the **QA/QC batch membership** group can be selected in the corresponding window opened by the "Manage membership" button.

The batches are displayed in a paginated list with sorting and filtering options.

You can select a one or many batches, preview the selection with the "**View**" drop-down option, clear the selection with "**Clear selection**" button or apply the selection by clicking the "**Apply**" button.



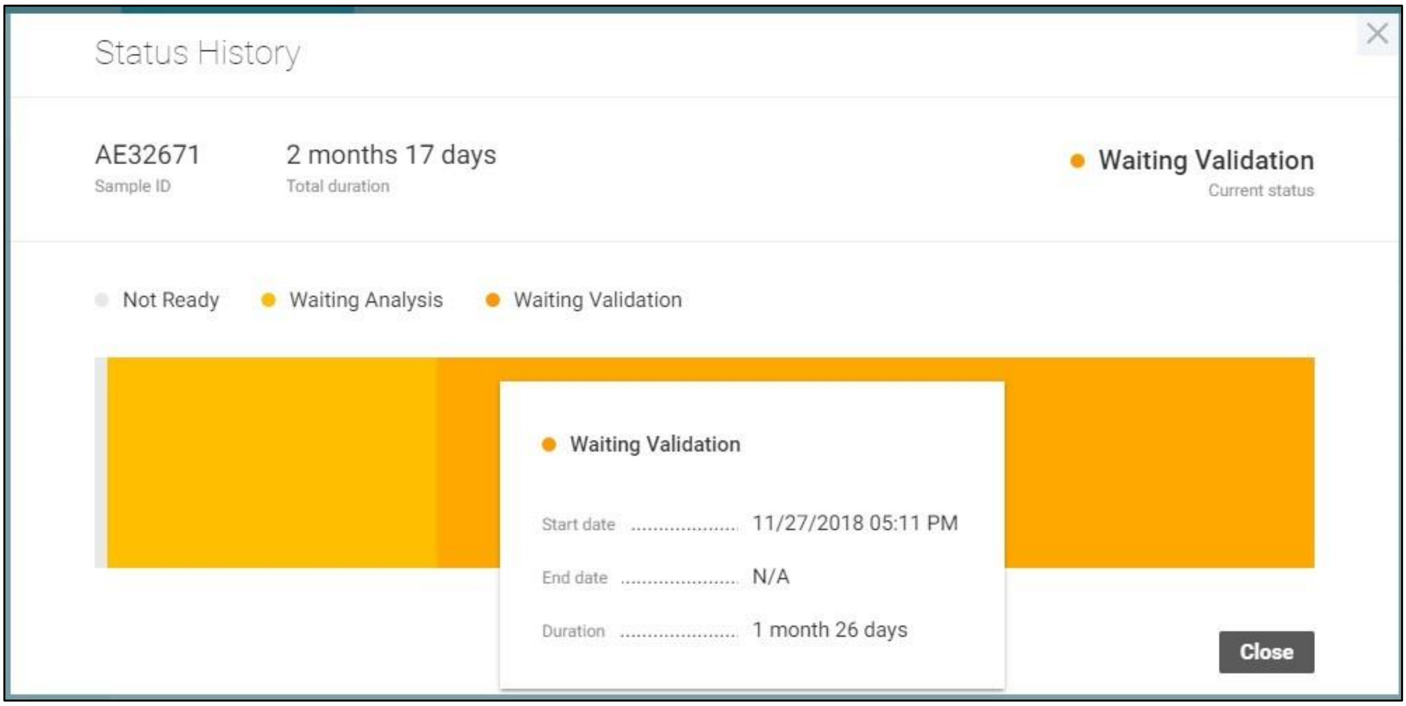
Sample Status History

The **Sample Status History** screen is where you can see how the status of the sample has been changing over time.

The history of statuses is displayed in the chart in chronological order and color-coded according to the legend.

The "**Production OK**" and "**Completed**" statuses are excluded from the chart when the sample has one of these statuses as the final one.

You can see the exact time when the sample entered and left a certain status as well as its time period by hovering the cursor over a certain status in the chart.



Analysis Details

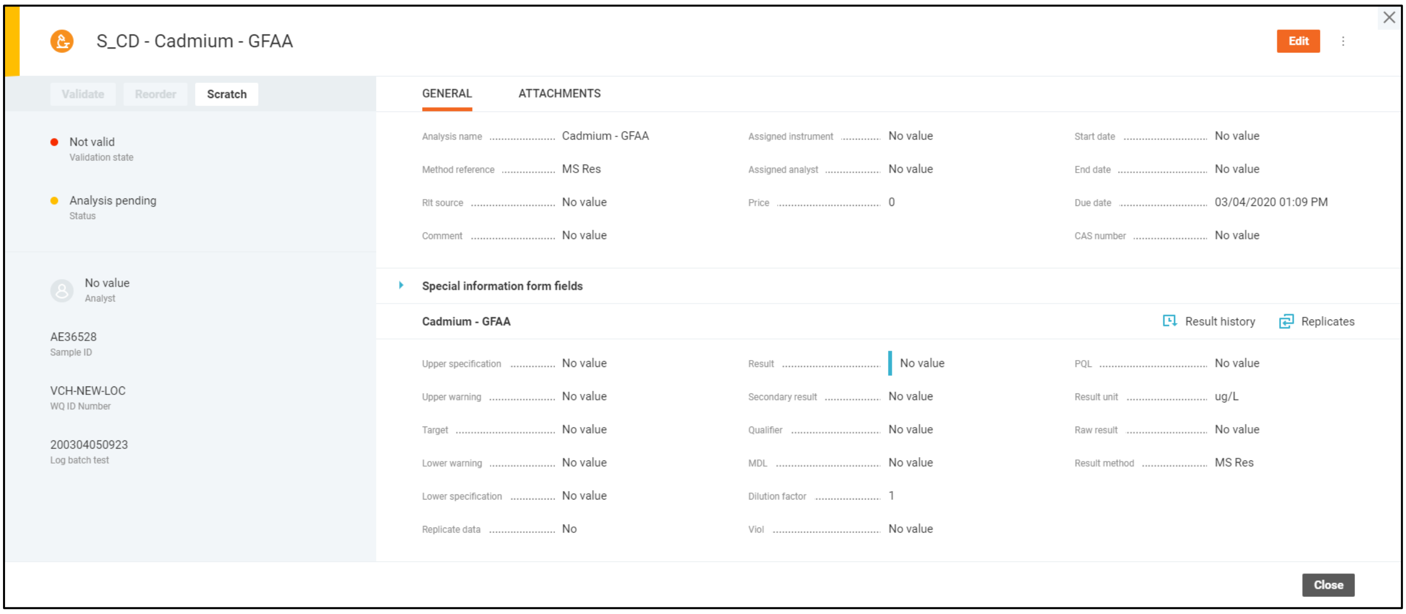
Analysis Details screen displays all information about the analysis performed with a certain sample.

There are four types of analyses with common parameters as well as specific ones.

Narrative analyses have a specific field "**Narrative text**" that is considered as a result of the analysis.

Bottle analyses have an additional field called "**Location**" that does not correspond to the location of the sample, and considered as the result of the analysis as well.

Single and multi-component analyses contain components with their own parameters.



There is a number of buttons in the right-hand side of the screen:

- "**Edit**" button that enables the **Analysis Editing** screen.
- "**Audit Trail**" button that allows you to browse all changes made to the analysis on the **Audit Trail** screen.

The detailed information about the results of other samples underwent this analysis is available on the **Result History** screen, activated by the "**Result History**" button next to the corresponding component. This option is applicable for single and multi-component analyses only.

Single and multi-component analyses may also have replicates. They are displayed on the **Analysis Replicates** screen accessed by clicking the "**Replicates**" button next to the corresponding component.

The click on the sample batch name navigates you to the **Explorer** with corresponding batch filter applied.

You can perform following actions with the analysis using the button on the left-hand side of the screen:

- Validate (mark as valid)
- Invalidate (mark as invalid)
- Reorder (request reanalysis)
- Scratch (cancel the analysis)

The exact set of available actions depends on the current status of the analysis.

The Attachments related to the Analysis are displayed under the “Attachments” tab, with sorting and filtering options. You can manage Attachments on the **Analysis Editing** screen.

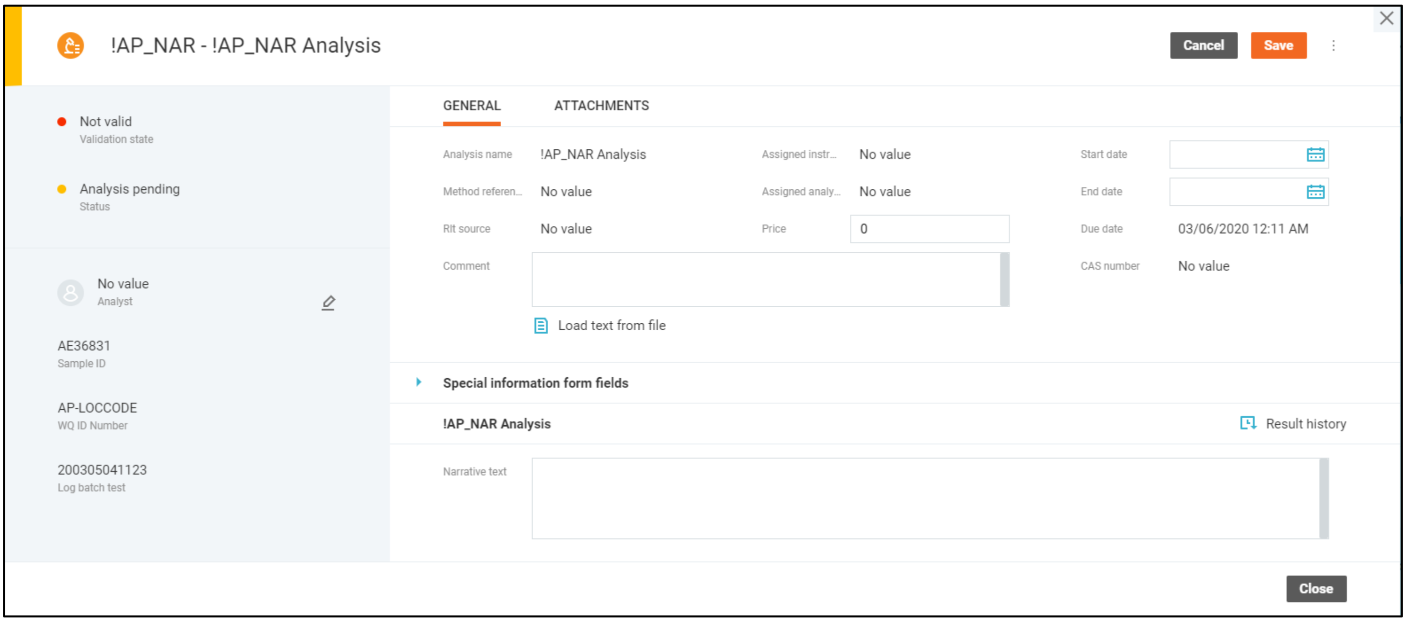
Analysis Editing

Analysis Editing screen is enabled when you press the "**Edit**" button on the **Analysis Details** screen or by double-clicking any of the editable fields.

In the edit mode, certain fields of the analysis become editable and the "**Edit**" button is replaced with "**Save**" and "**Cancel**" buttons that apply or discard the changes respectively.

Note that every change to the analysis while it is in the "**Validated**" state, changes it to "**Not Valid**".

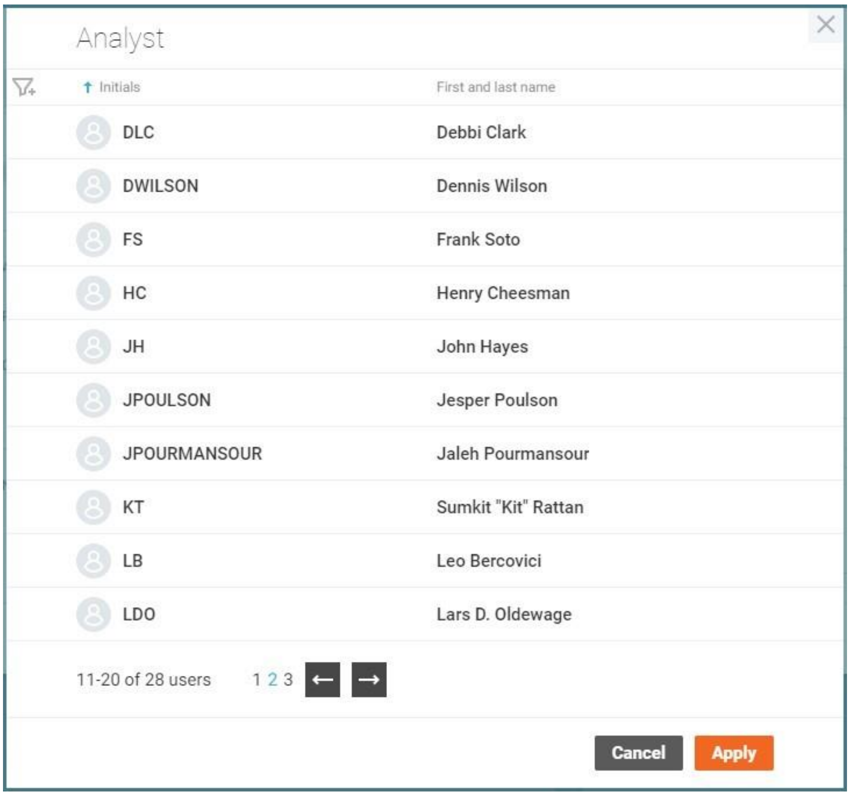
Every change can be discarded separately by the "**Discard**" button next to the updated field.



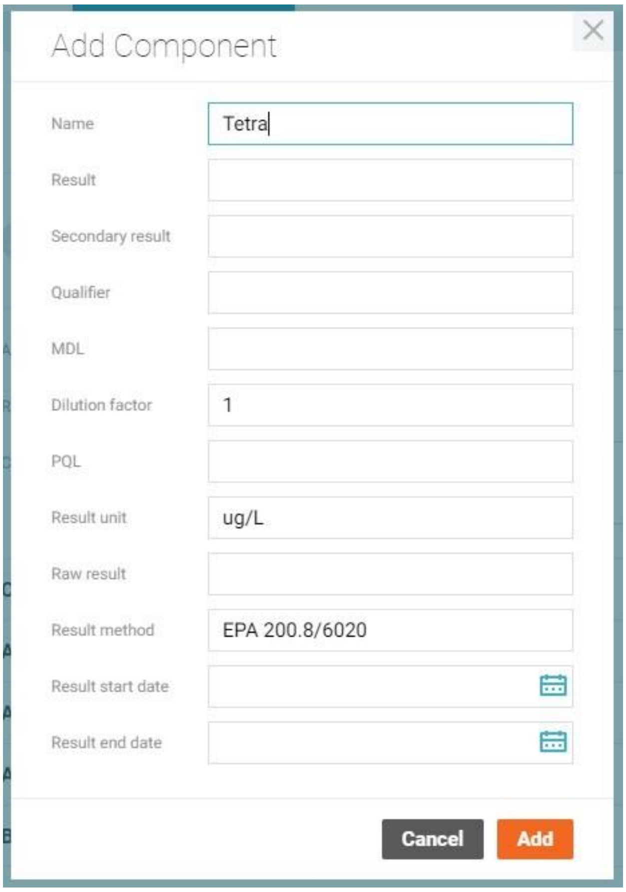
The Analyst can be selected in the user selection window opened by the button next to the field.

The potential analysts are displayed in a paginated list with sorting and filtering options.

To set a user as the analyst, select him in the list and click the "**Apply**" button.



It is possible to add custom components to multi-component analysis, beside the default ones that have "**From definition**" label on them, by clicking the "**Add Component**" button and submitting the form with component details in the activated window. The custom components can be renamed or deleted later.

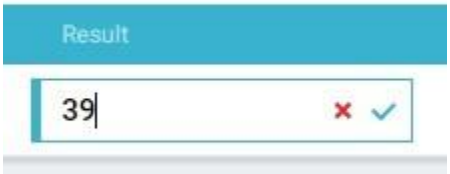


In-line Result Entry

It is possible to enter the analysis results across the application using the in-line result entry function.

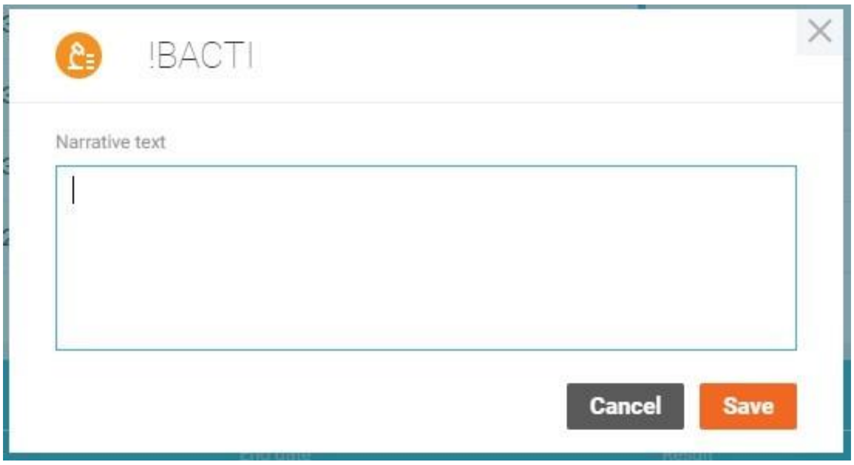
Note that every change to the analysis while it is in the "**Validated**" state, changes it to "**Not Valid**", although it is not visible in the in-line result entry.

The results for single-component and bottle analyses can be entered directly in the list with the analysis by clicking the result value. To discard or apply the updated value, you have to click the corresponding button appeared to the right.

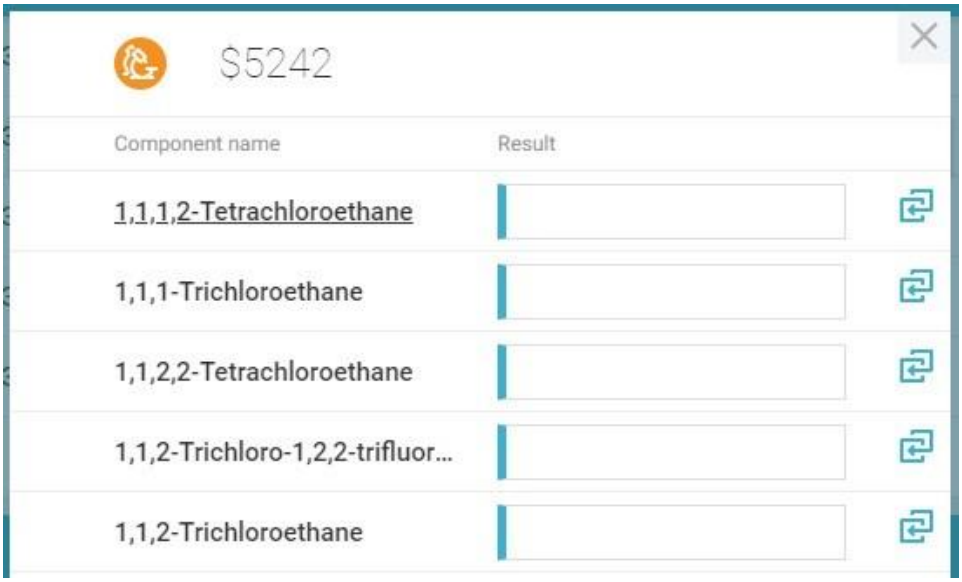


The narrative analysis, on the other hand, shows a dialog window when you click on the result value.

You can update the result by changing the narrative text and clicking the "**Save**" button.



The multi-component analyses open a window with a list of components and their results. You can specify the value of each component in the window and apply them by clicking the "**Save**" button.

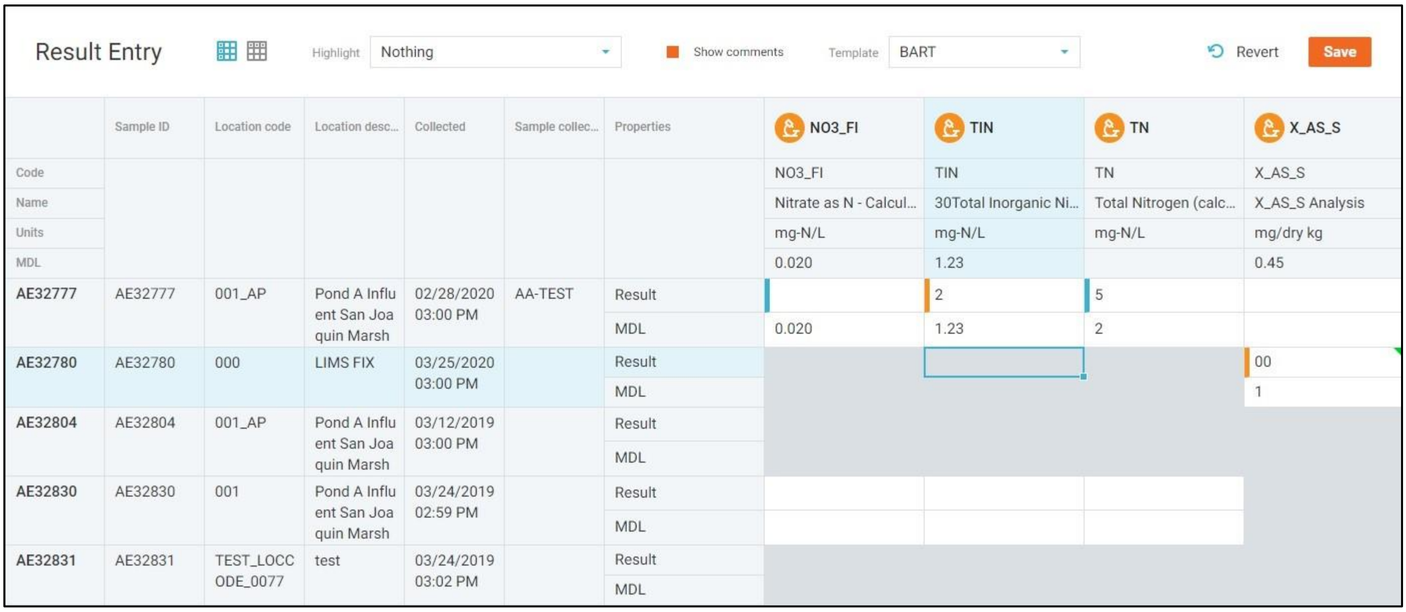


Note that changing analysis result may affect the result of another analysis if it is a part of calculation.

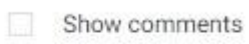
Result Entry Table

The **Result Entry** screen provides an option to enter results for multiple analyses at once.

All information on selected samples with corresponding analyses and their results is displayed in the form of a spreadsheet.



There is a number of display controls at the top part of the screen.

Control Element	**Description**
	Whether to display samples vertically or horizontally.
	Allows enabling indicators telling that the analysis has replicates or that the analysis is complete.
	Determines whether to display the comment indicator next to the analysis results.
	The set of displayed sample fields, analysis fields and the order of elements is determined by the currently applied template.

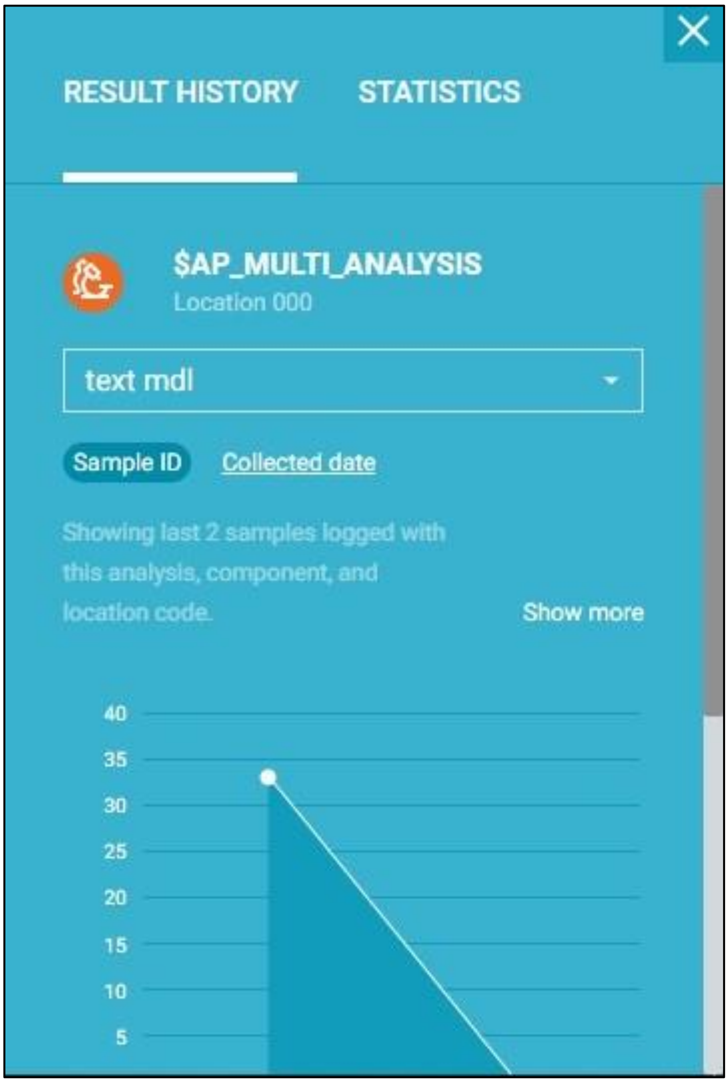
You can navigate to a particular sample, analysis or its replicates through the context menu opened by right-clicking corresponding cell in the spreadsheet.

The spreadsheet data can be copied from or pasted to Microsoft Office Excel spreadsheet via clipboard using context menu and key combinations. Please note that the clipboard may work differently compared to desktop applications. For instance, the source screen should be active when you copy and paste using the context menu.

You can view the details about the calculation using the same context menu if the analysis participates in the calculation.

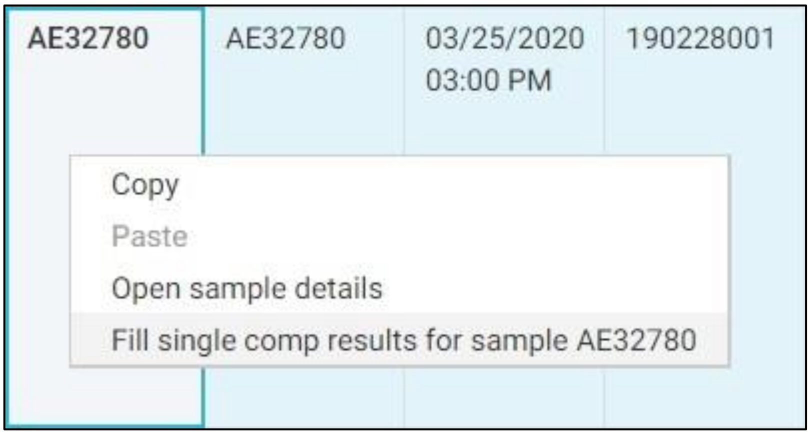
The result history can be viewed by clicking on the corresponding icon in the top-right corner of the table. It will be displayed in a sidebar and update accordingly when you select different analysis result cells in the table. It shows information about up to 10 latest samples underwent the analysis.

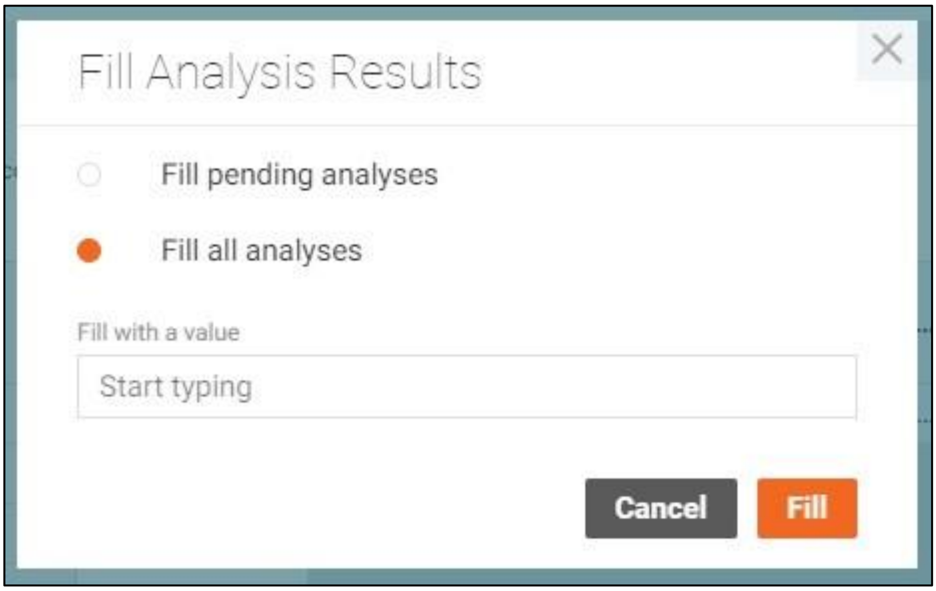
The "**Statistics**" tab contains only the samples displayed in the table at the moment.



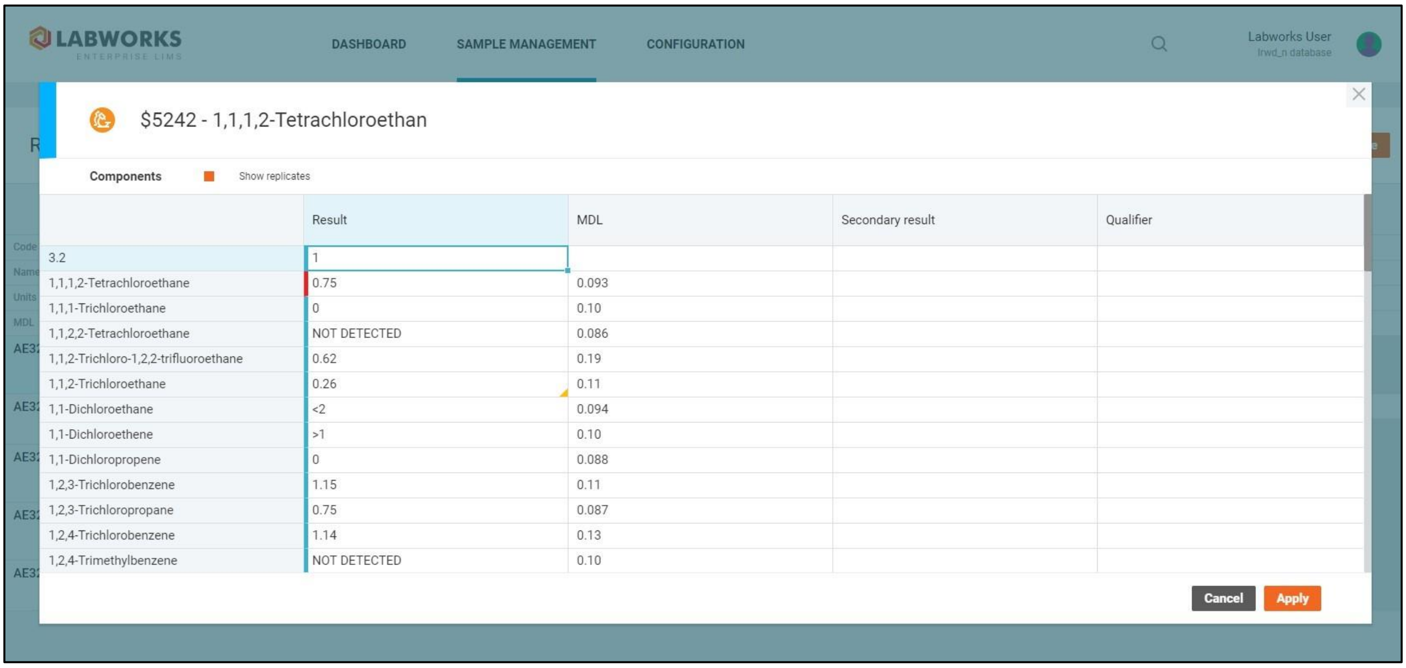
To add one of the displayed analyses to a sample, select the "**Add analysis to sample**" option under the context menu opened by right-clicking at the intersection of the sample and corresponding analysis.

To update analysis comment, select the "**Comment**" option under the context menu opened by right-clicking any of the analysis field values.





You can update any of the displayed field values by typing directly in the spreadsheet or using the "**Fill Analysis Results"** dialog window for single-component analyses. It can be opened by the corresponding option under the context menu opened by right-clicking on a particular row, column, or cell range. The value entered in this window is applied to all analyses in the selected range.



The click on multi-component analysis result value opens a dialog window dedicated to this particular analysis. You can enter the data for any of the components either manually or through "**Fill Analysis Results"** dialog and click the "**Apply"** button to close the window.

All changes made on the Result Entry screen can be saved by clicking the "**Save"** button in the top-right corner of the screen.

To discard the changes, click the "**Revert"** button.

Note that, like with inline result entry, every change made to the analysis while it is in the "**Validated**" state, sets it to "**Not Valid**", although this is not indicated on **Result Entry** screen.

Analysis Result History

You can access the **Analysis Result History** screen from analysis details or the result entry table.

The screen contains details about the results of a particular analysis with a list of results of related samples taken in the specified location. Note that only those samples the user has access to are taken into account.

The first part of the screen contains general information about the analysis with the most recent result values displayed in a chart. The data in the chart may be ordered either by **Sample ID** or the **Collected date** field for single- and multi-component analyses. Bottle analyses display up to 20 most recent locations with their corresponding numbers of occurrences in form of a chart. Narrative analyses display a list of results with the number of occurrences of each particular result.

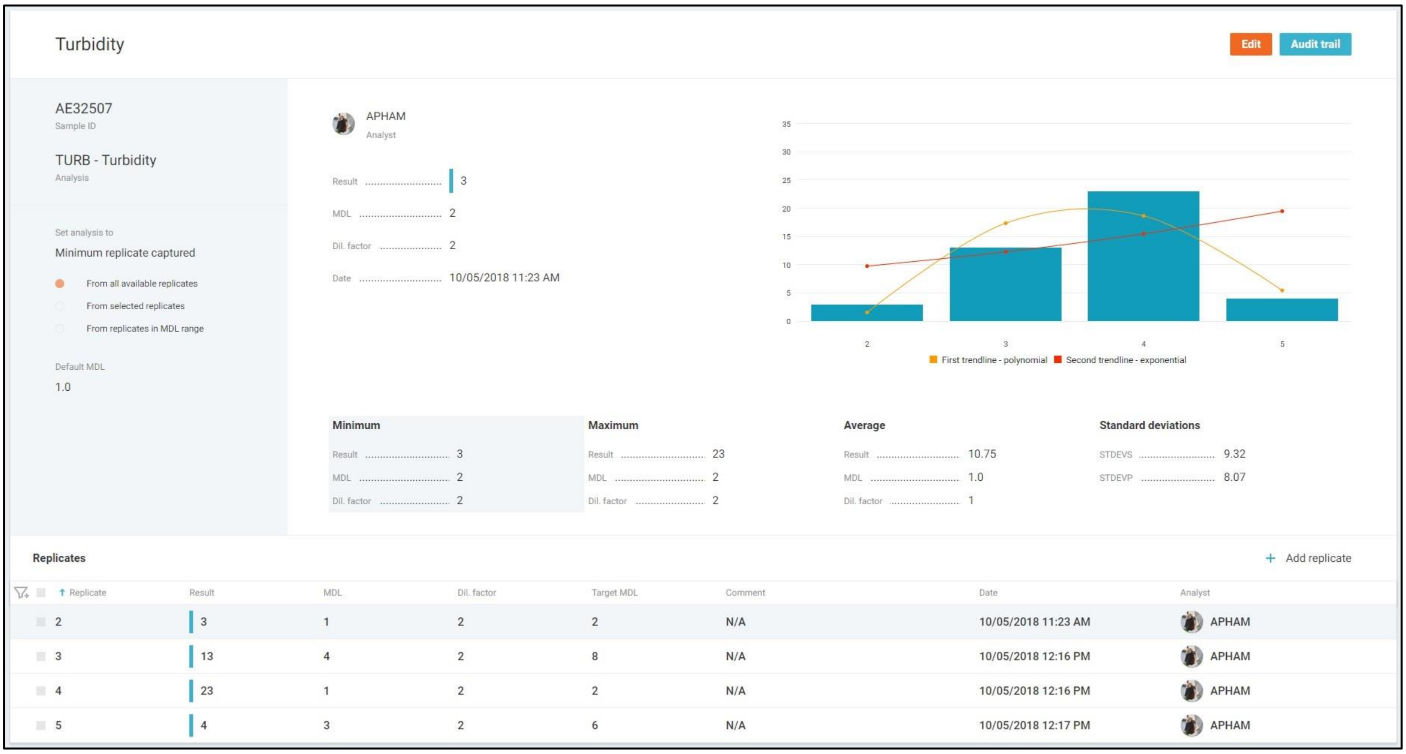
The second part of the screen is a list of affected samples with an option to sort and filter by corresponding fields.

The results are color-coded according to the **Analysis Legend.**

Analysis Replicates

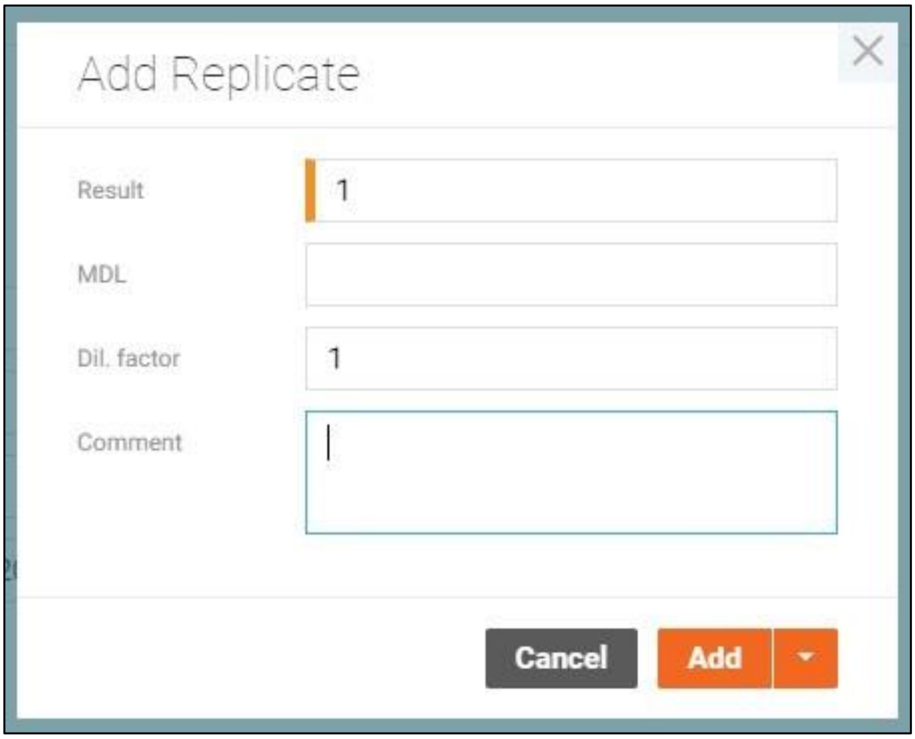
Analysis Replicates screen displays the details about the replicates - a set of repetitions of the analysis intended to test for the deviation of the results.

The "**Edit**" button on the right-hand side of the screen enables the **Analysis Replicates Editing** screen and the "**Audit Trail**" button allows you to browse all changes made to the replicates of a certain analysis on the **Audit Trail** screen.



The replicates can be added in the window that can be accessed by clicking the "**Add replicate**" button in the right-hand side of the "**Replicates**" table.

To be able to add multiple replicates without closing the window, please select the "**Add multiple**" option under the drop-down menu next to the "**Add**" button.



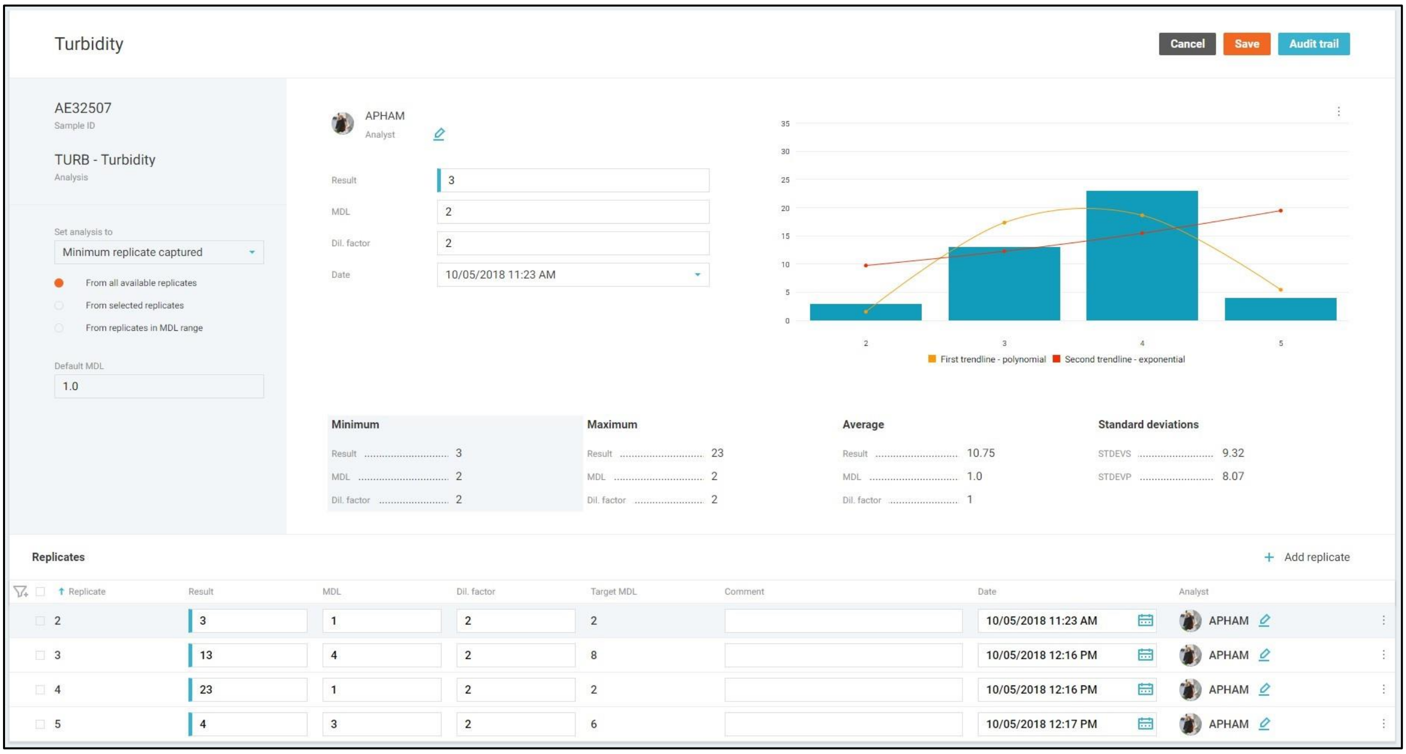
Upon addition, the replicate becomes available in the "**Replicates**" table changing the screen to the editing mode automatically.

When the analysis has at least one replicate, the information is also displayed in the chart.

Analysis Replicates Editing

Analysis Replicates screen is enabled when you press the "**Edit**" button on the **Analysis Replicates** screen or by double-clicking any of the editable fields.

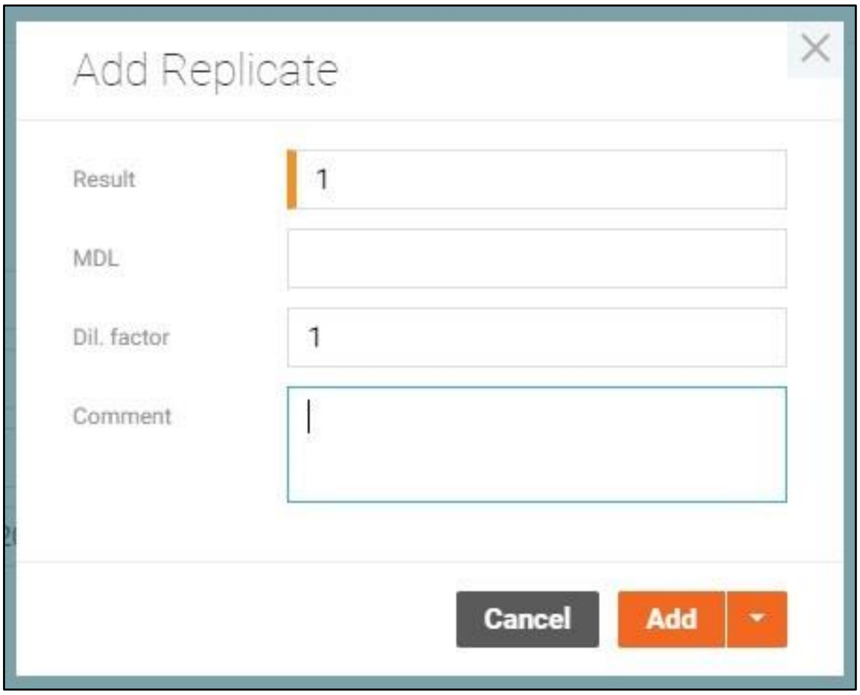
In the edit mode, certain fields of the analysis become editable and the "**Edit**" button is replaced with "**Save**" and "**Cancel**" buttons that apply or discard the changes respectively.



The replicates can be added in the window that can be accessed by clicking the "**Add replicate**" button in the right-hand side of the "**Replicates**" table.

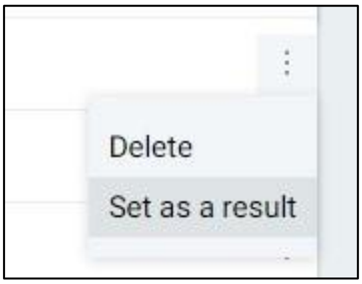
To be able to add multiple replicates without closing the window, please select the "**Add multiple**" option under the drop-down menu next to the "**Add**" button.

The "**Default MDL**" field value will be used as the default one for new replicates.



Upon addition, the replicate becomes available in the "**Replicates**" table, where you can change the data of each replicate directly anytime. Every change can be discarded separately by the "**Discard**" button next to the updated field in the table.

The drop-down menu to the right of each replicate can be used to delete it or set the replicate data as the output data of the analysis.

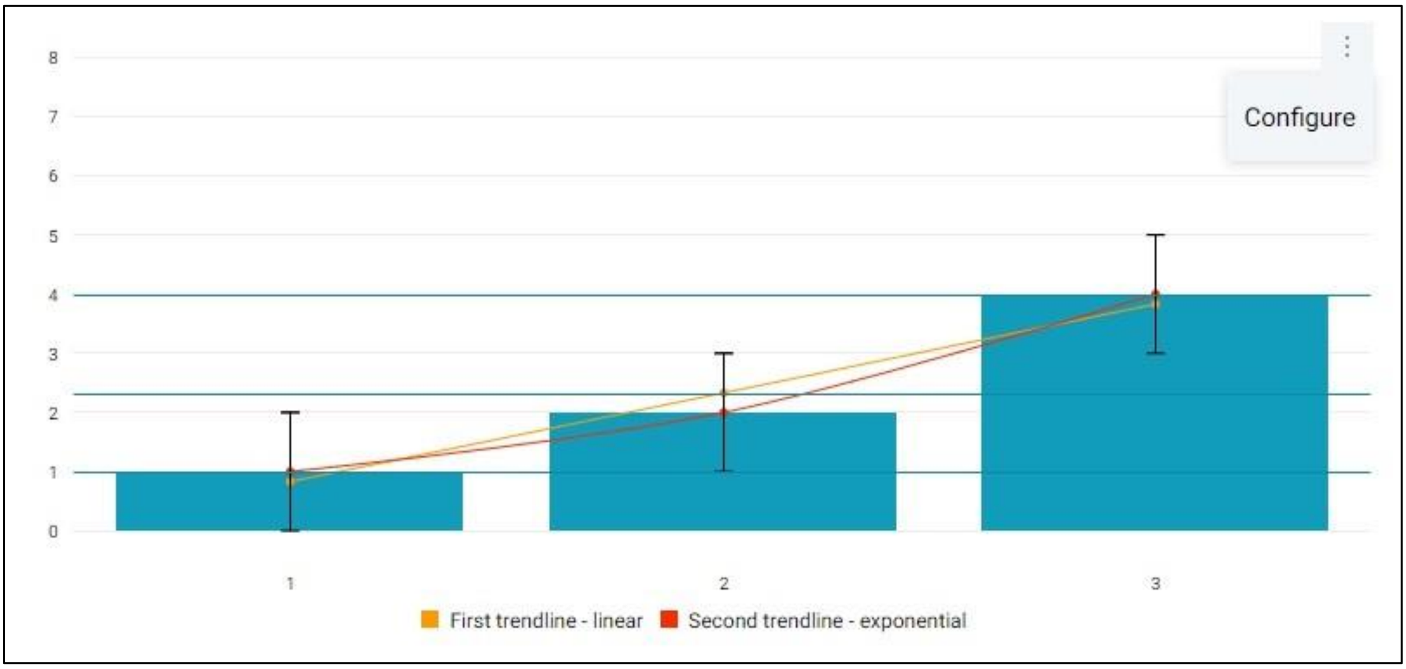


When there are multiple replicates, you can also set the output result using the automatic options to the left from the chart:

- Minimum replicate captured - the replicate with minimum result value will be set as the output data.
- Maximum replicate captured - the replicate with maximum result value will be set as the output data.
- Average replicate captured - the average result value will be set as the output data.
- Custom result - the result can be specified manually by typing into the output data fields.

You can also limit the set of involved replicates by taking into account only the replicates in MDL range, or by selecting multiple replicates in the table and checking the "**From selected replicates**" option below the "**Set analysis to**" drop-down list.

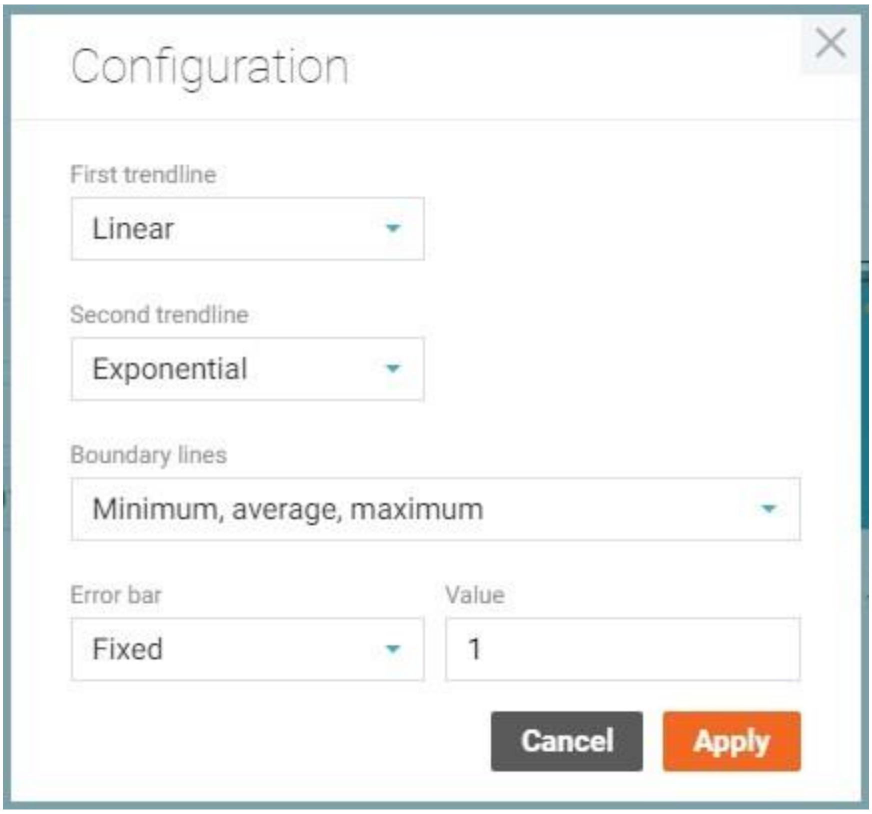
The way the replicate data is displayed in the chart can also be configured. To access the configuration window, click the "**Configure**" button under the drop-down menu in the top-right corner of the chart.



You can choose to display up to two trendlines with a number of preset functions, some of which are parametric.

There is an option to display boundary lines corresponding to the minimum, maximum and the average values.

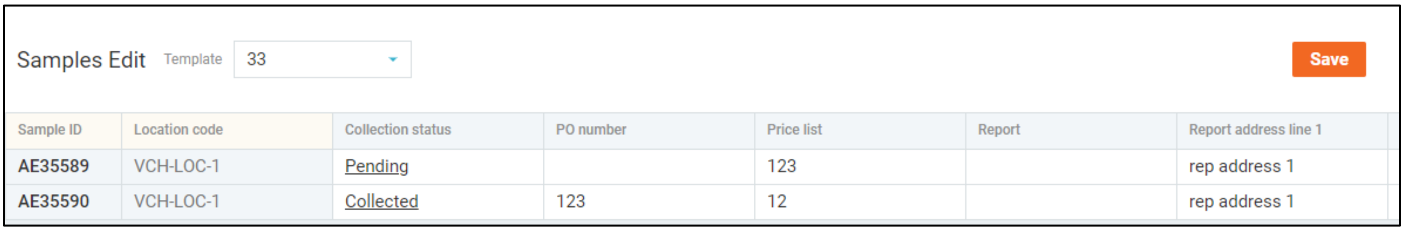
The chart also allows you to configure the error bar display with multiple options.



When you want to set the intersection of the trendlines as the output result value, you can click a certain point on the chart. The chart can be zoomed in and out using the mouse wheel, and panned by holding the left mouse button.

Sample Edit

Sample Edit screen provides a way to update samples in form of a spreadsheet that may contain one or many samples. The spreadsheet supports MS Office Excel style operations. You can navigate to this screen mainly from the main **Sample Explorer** screens by performing the **Edit** action with samples and groups of samples.



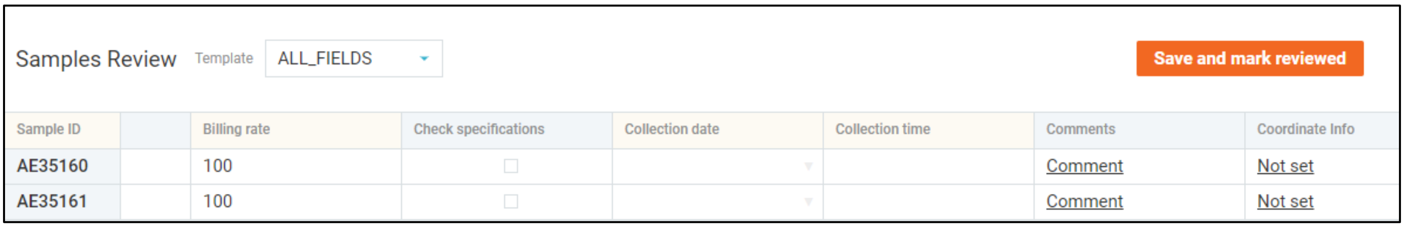
The set of fields available for editing depends on the selected template and the field data input works the same way as it does on the **Sample Login** screen.

In case if you want to revert your changes, click the “Revert changes” button next to the “Save” button.

When you are done editing samples, click the “Save” button to apply the changes.

Sample Review

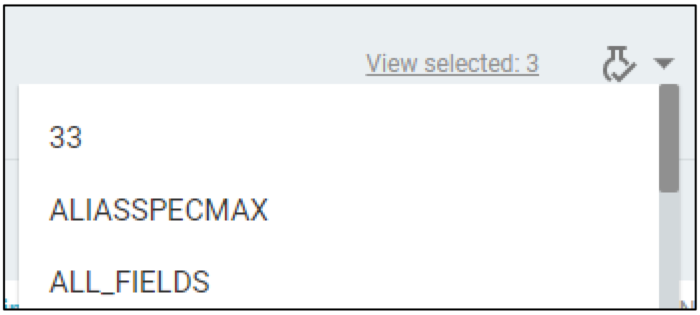
Sample Review screen is similar to the **Sample Edit** screen, except that after the sample data is saved, the samples automatically become reviewed.



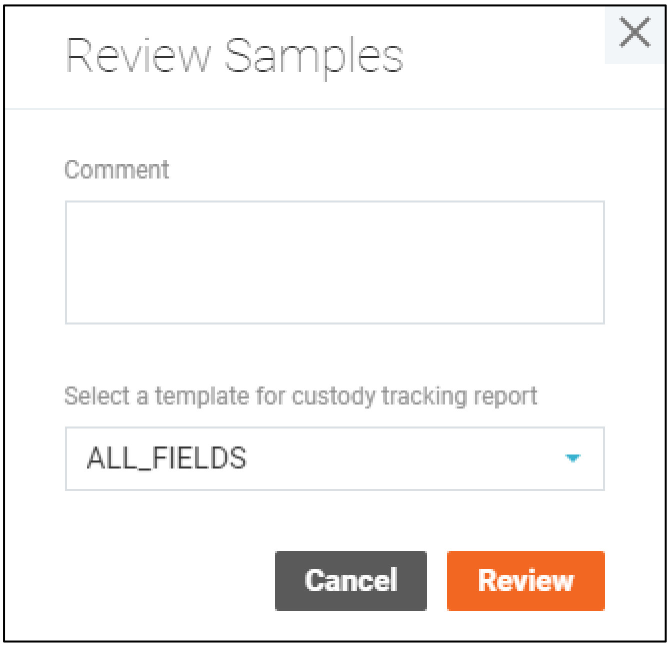
You can review the samples by selecting the “Review” option under the sample group action menu one of the following screens:

- Log Batch Explorer
- QA/QC Batch Explorer
- Collection Group Explorer

Additionally, you will find the “Review” button as a flask icon with a check mark on most screens of the Sample Management. You can either click on this icon to navigate to the **Samples Review** with a template that you used last, or select a particular template by selecting it in the drop-down list next to this button.



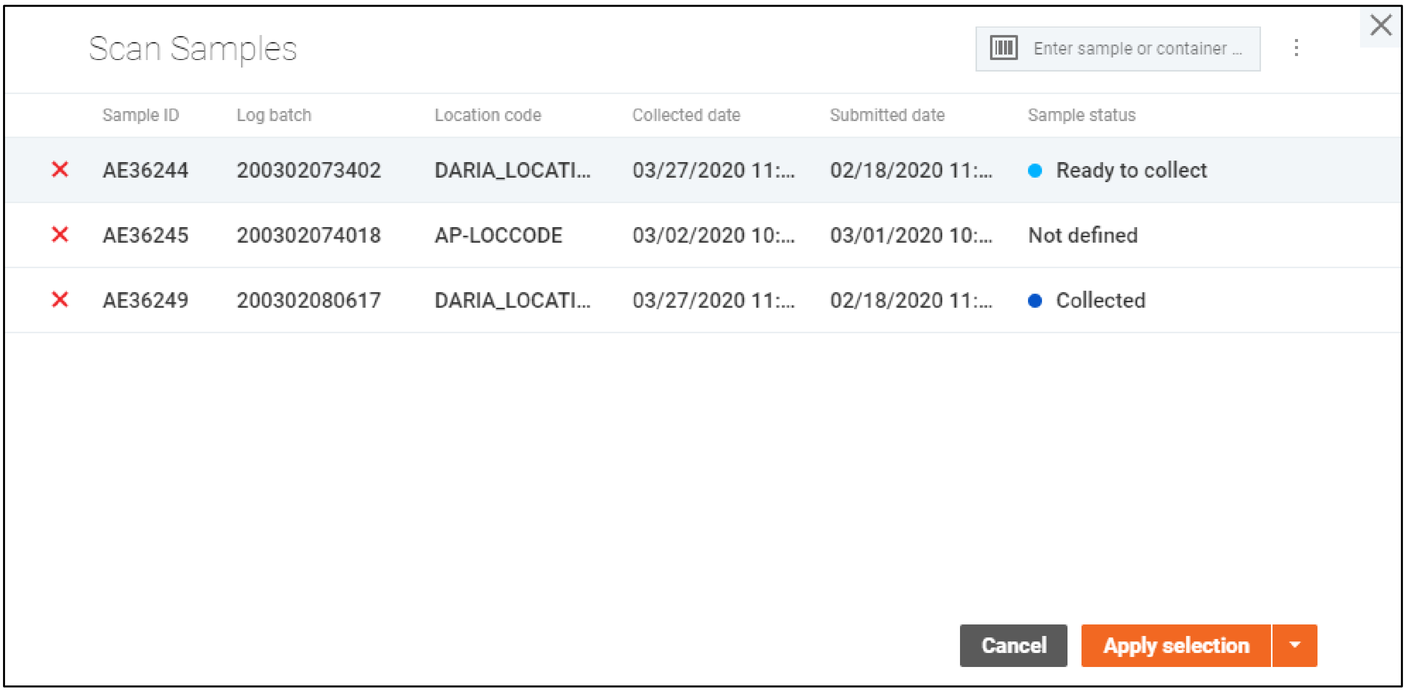
If you want to skip the editing process and just mark the sample group as reviewed, you can select the “Mark as reviewed” option under the sample group action menu. In this case, you will need to select a template and provide a review comment for the **Audit Trail** entry.



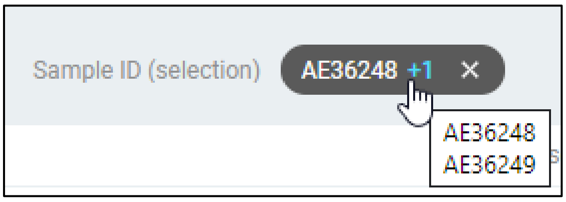
Scan Samples

The Scan Samples window provides a quick way to find samples using bar code scanner.

Open the Scan Samples window and enter (with or without the bar code scanner) as many Container IDs or Sample IDs as you want to the field in the top-right to add them to the selection list.



When you are done scanning the samples, you can either clear the Sample ID filter on the **Sample Explorer** and apply the selection as is, or add the scanned sample IDs to the current selection using the drop-down menu next to the "Apply selection" button.



The **Sample Explorer** should have these sample IDs displayed in the applied filters' area.

Audit Trail

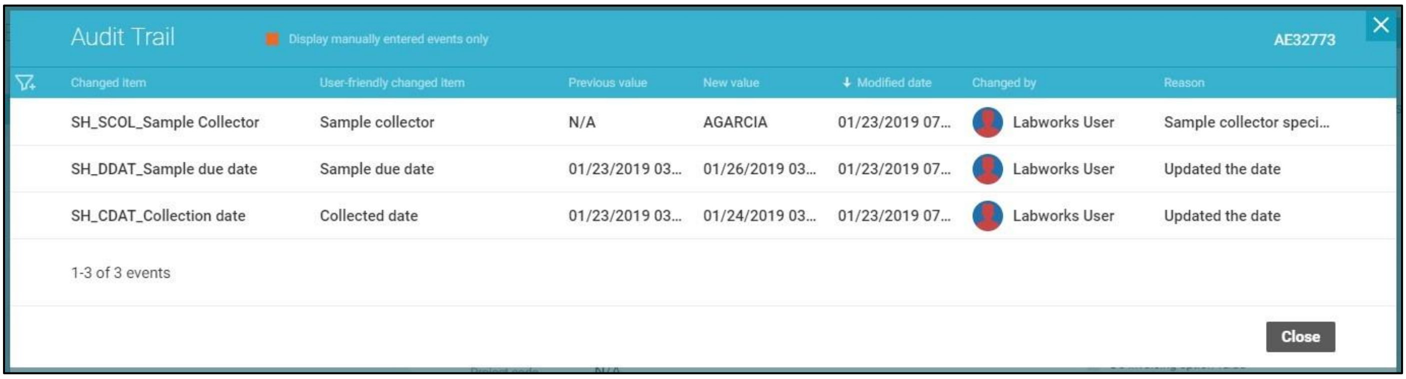
The audit trail is a list of changes made to a certain sample, analysis or a replicate, that is displayed in the top right corner of the window.

The elements are displayed can be sorted by clicking the labels in the header of the table. Subsequent clicks reverse the sorting order.

To filter the elements, expand the quick filter bar by clicking the **funnel icon** on the left-hand side of the window, specify the filtering options, and apply them by clicking **check mark icon** in the quick filter bar.

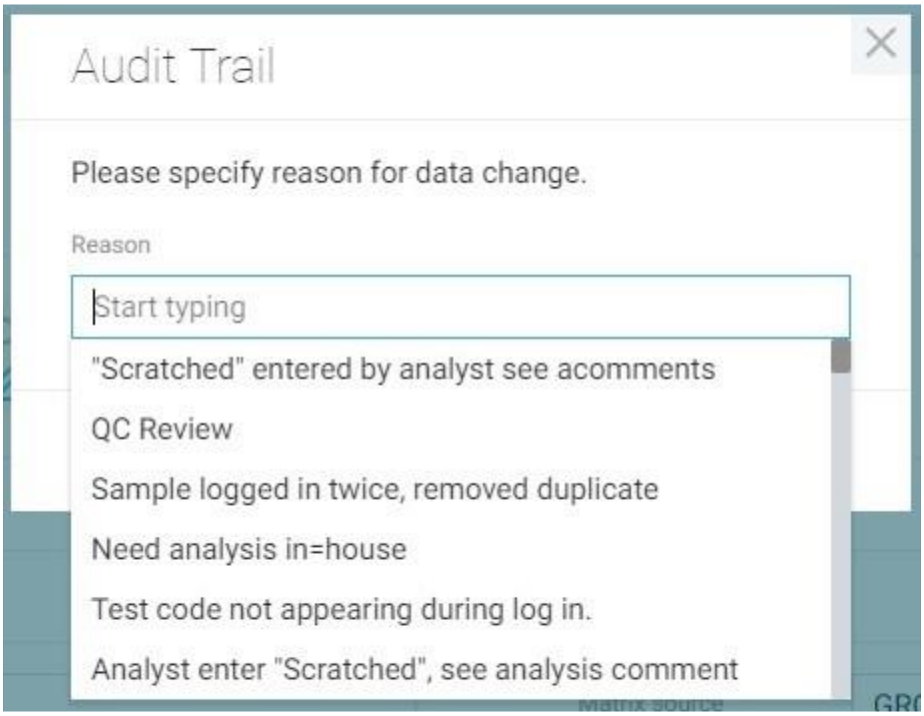
The **cross icon** in the quick filter bar resets the filter.

In order to see the additional events, such as the automatic ones, you can uncheck the "**Display manually entered events only**" checkbox in the top of the window.



Certain actions, such as sample editing or analysis editing may request a reason to be specified.

You can select one of the common reasons by selecting one from the proposed list, or type a custom comment in the window opened after you apply the changes.



Analysis Legend

Analysis Types

Narrative analysis

Single-component analysis

Multi-component analysis

Bottle analysis

Group analysis

Analysis States

Validated

Not valid

Analysis Statuses

Analysis pending

Manually entered

Uploaded from file

Calculated

Scratched

Analysis Result Colors

The color of the bar next to the analysis result value depends on the specification violation:

The result exceeds specification range

The result is exceeding warning range but within the specification range

The result is within the warning range

Sample Legend

Sample Statuses

- Not ready
- Ready to Collect
- Printed
- Collected
- In Transit
- Waiting Analysis
- Waiting Validation
- Invoice Queue
- Laboratory Reject
- Production Reject
- Laboratory OK
- Production OK
- Completed
- N/A
- Not collected

Collection Group Statuses

- Pending (all samples are in Pending status)
- In progress (at least one sample is in either Collected or Not Collected state)
- Completed (all samples are either in Collected or Not Collected state)
- Reviewed (all samples are reviewed)

Checksum Violations

Checksum violation detection module is one of the Labworks Enterprise LIMS security features.

Only the data collected by the Labworks Desktop Application and Labworks Enterprise LIMS is considered as valid. So, when the database is changed directly, the checksum violation detection module notifies the user about the infiltration.

The module covers changes to the most sensitive data:

- Results of analyses
- Audit trail entries

The notification messages are displayed on the **Analysis Details** or **Audit Trail** screens when any modifications to corresponding data have occurred from outside the system.