Lab Data Submittal 2.0

(+ CMDP)

Web Application

User Manual

(Abridged Version for Non-Certified Users)

NC DEQ

Division of Water Resources

Public Water Supply Section

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Contents

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Glossary

Analysis – For the purposes of this manual, analytical information added to the sample (see "Sample" definition below); corresponds to the fields encountered on state laboratory forms below the "double line". Note that Sample (see **Sample** below) and Analysis are split into different screens in the Bacti/GWR module and are on the same screen for chemicals.

Batch – A set of sampling results that can be processed by the software at the same time.

CMDP – Compliance Monitoring Data Portal. An application created by the federal Environmental Protection Agency (EPA) to facilitate electronic reporting to the State.

CROMERR – Cross-Media Electronic Reporting Rule **Drinking Water Watch** – A website, available to the public, for viewing drinking water information; obtains data directly from the State database, SDWIS. URL: https://www.pwss.enr.state.nc.us/NCDWW2/

EPA – Environmental Protection Agency.

HPC – Heterotrophic Plate Count (HPC) submission capabilities are included in the software for labs certified for HPC. HPC analysis can only be submitted as part of a Total Coliform (TC) sample and will be listed in SDWIS as a separate result under the TC sample's lab log ID.

Lab ID – A five-digit identification code issued by the State to each certified laboratory.

Lab Log ID – A unique sample identification number; cannot be replicated by the same laboratory.

LDS – **Lab Data Submittal** – Web-based software provided by the PWS Section to certified laboratories to submit drinking water data to the State. URL: https://pws.ncwater.org/LDS

LDS Database – A database (separate from **SDWIS** – see below) that is hosted by the State to store data that has been entered and saved by laboratories using the LDS application.

NCID – North Carolina Identification System (NCID) - State service that handles login credentials to access State-run websites. Every laboratory must obtain a NCID business user ID and password and supply the user ID to the PWS Section in order to use LDS. URL: https://ncid.nc.gov

PWS Section – Public Water Supply Section.

Sample – For the purposes of this manual, information about the water system, sample type, facility type, and sample collection details; corresponds to the information fields on the State laboratory analysis form above the "double line." Note that Sample and Analysis (see **Analysis** above) are split into different screens in the Bacti/GWR module and are on the same screen for chemicals.

Sampling Result – All information about the sample (see **Sample**) and analysis (see **Analysis**) required for submittal of a bacteriological result to the State. In the manual, this definition will be mainly used in reference to submissions using the Bacti/GWR module; for chemicals, Sample and Analysis are used throughout the text interchangeably. Note that Sample and Analysis are split into different screens in the Bacti/GWR module and are on the same screen for chemicals.

Sampling Status Report – A website that presents sampling information for the water system, including monitoring requirements and most recent sampling results. Obtains data directly from the State database, SDWIS. URL: https://pws.ncwater.org/WSReports

SCS – Shared CROMERR Services, - EPA's service that handles login credentials to access the federally run website CMDP for sample upload and certification. URL: https://encromerr.epa.gov/

SDWIS – Safe Drinking Water Information System, state database of drinking water inventory, compliance, and enforcement data directly accessible to state personnel only.

XML Reporting – Extensible Markup Language (XML) – format for electronic reporting of compliance data to the State. The key element of this process is encoding compliance data in a machine-readable format.

1. Introduction

1.1. Overview

The Lab Data Submittal (LDS) web application was made available to laboratories to submit drinking water analyses to the State in August 2013. Initially, the software only provided the capability to report bacteriological and HPC analyses. The second edition of LDS extended the capability to report all the other required drinking water contaminant analyses to the State and was released in December 2014. The most recent edition of LDS was updated to upload sample data to EPA's CMDP application and was released in January 2018.

The purpose of this manual is to describe the main features of the LDS software, its interaction with CMDP and the State database (SDWIS), as well as, data entry and submission details.

1.2. Software Capabilities

The LDS software is designed to allow State-certified laboratories to enter, store, and submit their compliance and non-compliance analyses of drinking water samples, both individually and in batches, to the State. It also allows review of submissions, correction of rejected records, and generation of laboratory reports.

LDS accepts analytical data for compliance with the North Carolina Safe Drinking Water Act. The web interface is connected to SDWIS, which makes it possible to either select or automatically populate water system (WS)-specific choices, such as WS No., WS name, facility ID, sample point, and previous sample information with real time data from the State database. Note that LDS will only display the water systems, facilities, sample points, etc. that are currently active in SDWIS.

! **Contact the PWS Section for any updates to the SDWIS inventory that need to take place in order for data to be entered or submitted.**

1.3. Work Flow

Below are the steps required to successfully enter and submit sampling data to the State. Each step mentioned here will be described in more detail in subsequent sections.

- Entering batch information (if applicable);
- Entering sample and analysis information;
- Uploading sample information to CMDP;
- Submitting and certifying sample file in CMDP;
- Correcting submission errors (if applicable).

2. Using LDS

2.1. Logging In

Figure 1. Login Screen

You can connect to the LDS website by using the following address: https://pws.ncwater.org/LDS

Once connected to this URL, you will be presented with a screen as shown in Figure 1, where you must use your user ID and password (obtained from NCID and registered with the PWS Section) in order to login.

! Before connecting to LDS, please make sure that pop-ups in your browser are unblocked for the LDS page (https://pws.ncwater.org/LDS/pages/samples.aspx). See Appendix 3 "To enable pop-ups."

After logging in, the next screen will display modules for each of the contaminant groups for which your laboratory is currently allowed to submit sample data. To proceed to your intended contaminant group, select the corresponding group module:

Figure 2. Certified Contaminant Groups

2.2. Entering Chemicals

2.2.1. Main View - Chemicals

After selecting a contaminant group from the screen depicted in Figure 2, the user is presented with the Main View screen, as seen in Figure 14 below.

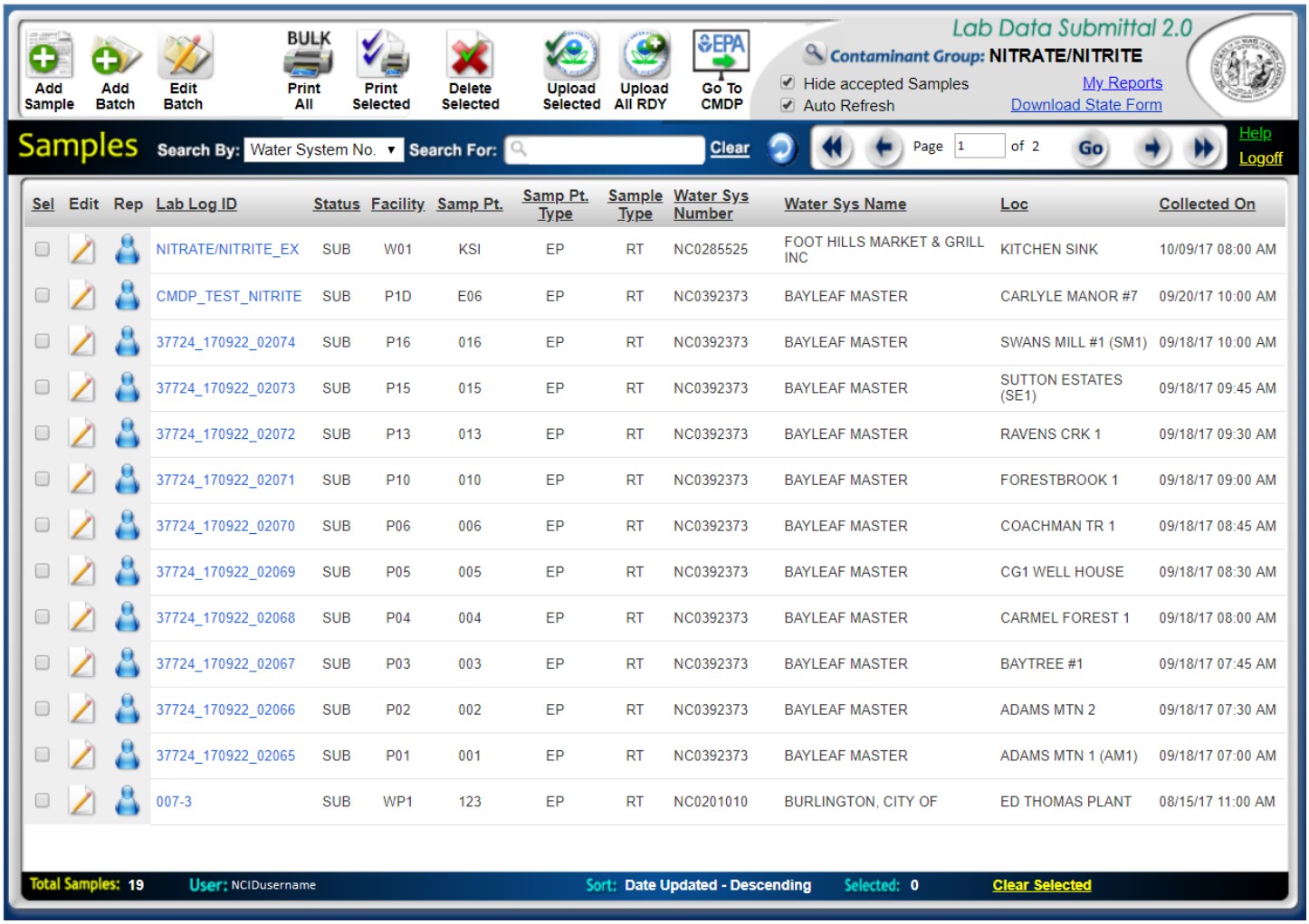


Figure 3. Main View – Chemicals

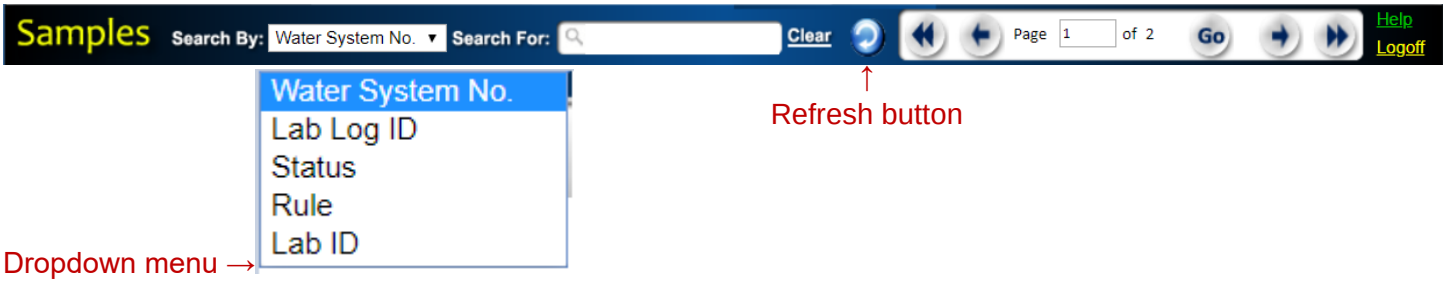
By default, Main View displays all of the samples in the working queue. Note that - unlike Bacti – sample and analysis are entered on the same screen for chemicals, which affects the layout of Main View.

Main View also contains search boxes and various action buttons to accomplish all of the data entry, retrieval, submission, review and printing tasks that are explained in detail throughout this manual.

The top row of buttons, see picture below, from left to right, contains the following:

- “Add Sample” – opens Sample Detail Screen, of which there are three types, depending on a chemical, see Figures 15, 16, and 17.
- “Add Batch” – opens Add New Chemical Batch Screen, see Figure 21.
- “Edit Batch” – to begin entering sample information, followed by analysis information for batches, see Select/Edit Chemical Batch Screen, Figure 22.
- “BULK Print All” – allows the user to print all entries in Ready (“RDY”) or Submitted (“SUB”) status displayed on the Main View Screen.
- “Print Selected” – prints all checked entries on the Main View Screen.
- “Delete Selected” – deletes all checked entries (does not apply to entries in “Accepted” status).
- “Upload Selected” – converts only selected samples into XML format and uploads file to CMDP (for expedited submission of positive, repeat, and triggered samples and uploading composite samples).
- “Upload All RDY” – converts all samples in RDY status into XML format and uploads the files to CMDP.
- “Go To CMDP” – opens a new tab in the browser with the CMDP login screen.
- “Contaminant Group” – clicking on the magnifying glass returns to the screen in Figure 2 to select a different contaminant group.
- “Hide samples already accepted to SDWIS” checkbox – when checked, displays all entries in statuses (see Appendix 1) other than “ACC”, for “accepted”, in Main View. Sampling results that have been accepted into SDWIS can be viewed by unchecking this box.
- “Auto Refresh” – when checked, updates status of records relative to their acceptance into SDWIS.
- “My Reports” – generates a report of historical data in Excel format.
- “Download State Form” – prints a blank state form for your contaminant.

The next row, as seen below, contains search boxes [“Search By” (shown above with the available search categories) and “Search For” textbox], a “Clear” hyperlink (to clear “Search For” textbox), a “Refresh” button (to update status of a submitted sample result), “Help” to bring up this manual and “Logoff” button. The box between the “Refresh” button and “Logoff” will display page navigation buttons when more than one page of samples exists.



To use this sample search function, select the dropdown category you wish to “Search By”, then enter the applicable information/code in the “Search For” textbox and press your keyboard’s “Enter” key. For example, if you select Search By “Water System No.” you must enter the water system number into the “Search For” textbox. If you want to Search By “Status”, use one of the codes listed in Appendix 1 for Sample Status. To search by Facility, enter a Facility ID into the box. Your sample search results will be displayed on the Main View Screen.

Next row, immediately below the sample search criteria bar, contains action buttons and display fields (below the underlined column headings) for entries in the queue. Underlined column headings, when clicked, will sort the entries under the column (or select all rows in the case of the first button, “Selected”). For example, to sort entries by their status, click “Status” column heading. Sorting toggles between ascending and descending order upon each click of a selected heading.

The purpose of each action button is explained below:

- “Select” – use to select all rows for printing or deleting.
- “Edit” – enables editing of the selected sample information.
- “Rep” – use to view and edit system contact information; contents of this field automatically populate “Mail Results to” area on the State Laboratory Analysis Form.

At the bottom of the screen is the information bar, as seen below:

It displays, from left to right, the number of entries in Main View, your name or organization, the field that Main View is currently sorted by and the sort type (Date updated, descending is the default), number of entries selected, and an option to clear selected entries.

2.2.2. Entering Individual Chemical Result

To begin entering a new sample, press “Add Sample” button in Main View, in the upper left corner. This will bring up the Sample Detail Screen, as shown below.

For all Chemicals, i.e. chemical groups of Inorganics, Lead and Copper, Nitrate/Nitrite, SOCs, THMs/HAA5s, TOC, VOCs, WQPs, Radionuclides, the general layout of the data entry screen is the same except that screens for chemicals that are or can be collected in the distribution system, such as Asbestos, Chlorine Dioxide/Chlorite, Lead and Copper, and THHM/HAA5 have additional fields. These additional fields are ““Location Code”, “Tap Location”, “Street Address”, and “City”. Check boxes are also included on distribution system sample lab forms for denoting whether or not the sample site is “owned or controlled by the water system”, or the sample site is “a daycare or K-12 school”. Inorganics, SOCs, THMs and HAA5s, and Radionuclides also have a button for entering different analysis dates and times for each laboratory method, see Figures 15 and 16 for entry point and distribution entry screens.

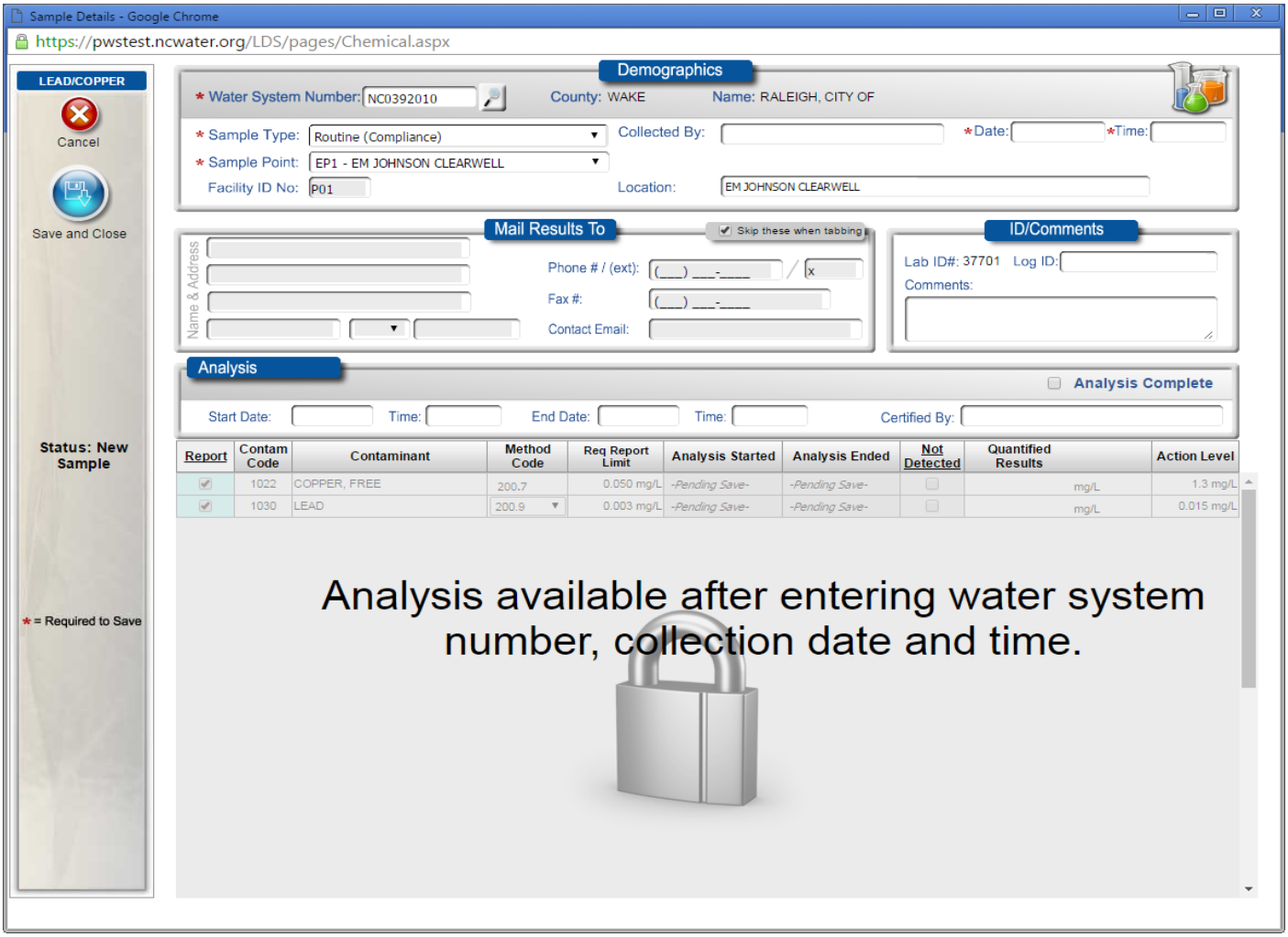
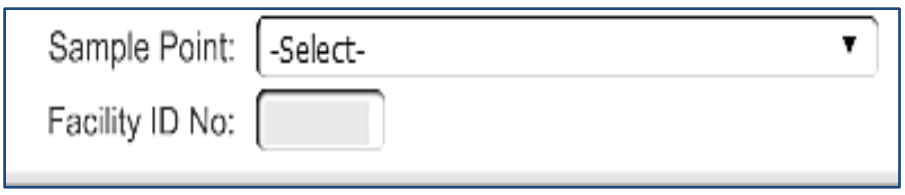


Figure 4. Chemical Entry Point Screen *(Asbestos, Bromate/Bromide, ClO2/Chlorite, Dioxin, Lead and Copper, Nitrate/Nitrite, TOC, VOCs, WQPs)*

Begin by either entering or selecting a water system (WS) number into the “Water System No:” box.
Note: By clicking on the magnifying glass, you can search by WS number or WS name

Once the WS number is entered, “County” and “Name” fields are populated with information from SDWIS. The “Sample Type” field is defaulted to Routine, but if the water system wishes to submit a non-compliance sample, Non-compliance type is also available.

“Sample Point” and “Facility ID” fields will be populated with information from SDWIS for single-facility water systems. For water systems with multiple facilities, the “Sample Point” field will display –Select offering a dropdown menu with all current sample point choices. Once a sample point is selected, the “Facility ID” field will get populated automatically with the corresponding Facility ID and the “Location” field – with the corresponding location.



“Collected By”, “Date” and “Time” fields are to be manually populated with sample collection information.

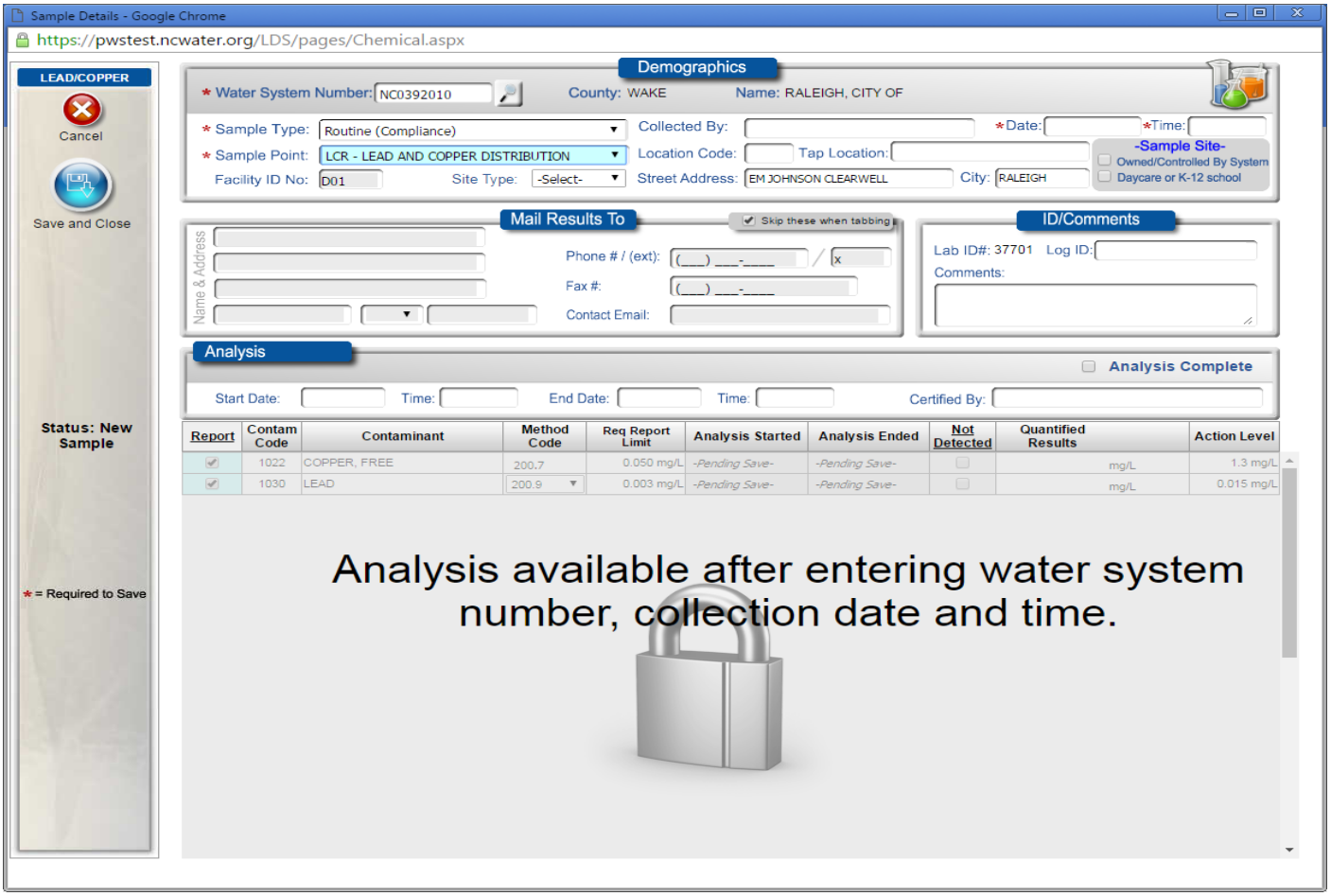


Figure 5. Chemical Distribution Screen *(Asbestos, ClO2/Chlorite, Lead and Copper, TTHM/HAA5)*

Distribution entry screen will appear when a distribution-type sample point is selected under “Sample Point”. This screen has additional fields, “Location Code”, “Tap Location”, “Street Address”, “City”, “Owned/Controlled by System”, and “Daycare or K-12 school”. The meaning of these fields is described in Appendix 6.

“Mail Results to” area displays contact information for the water system and is obtained from SDWIS by default. The lab, however, can update this information either on the Main Screen or on the sample detail screen.

“ID/Comments” box contains the following fields:

“Lab ID” – for the five-digit state-assigned laboratory ID;

“Log ID” – to hold a unique ID for each sample entered. This ID will be automatically created and supplied to this field when the sample is saved; during data entry, however, the field will display “*-Pending-“.*

“Comments” – a free-text field to enter any related comments.

Once collection date and analysis end dates are populated, the user is ready to proceed to entering analysis information.

For each contaminant group, the list of contaminant codes is displayed in the lower part of the screen.

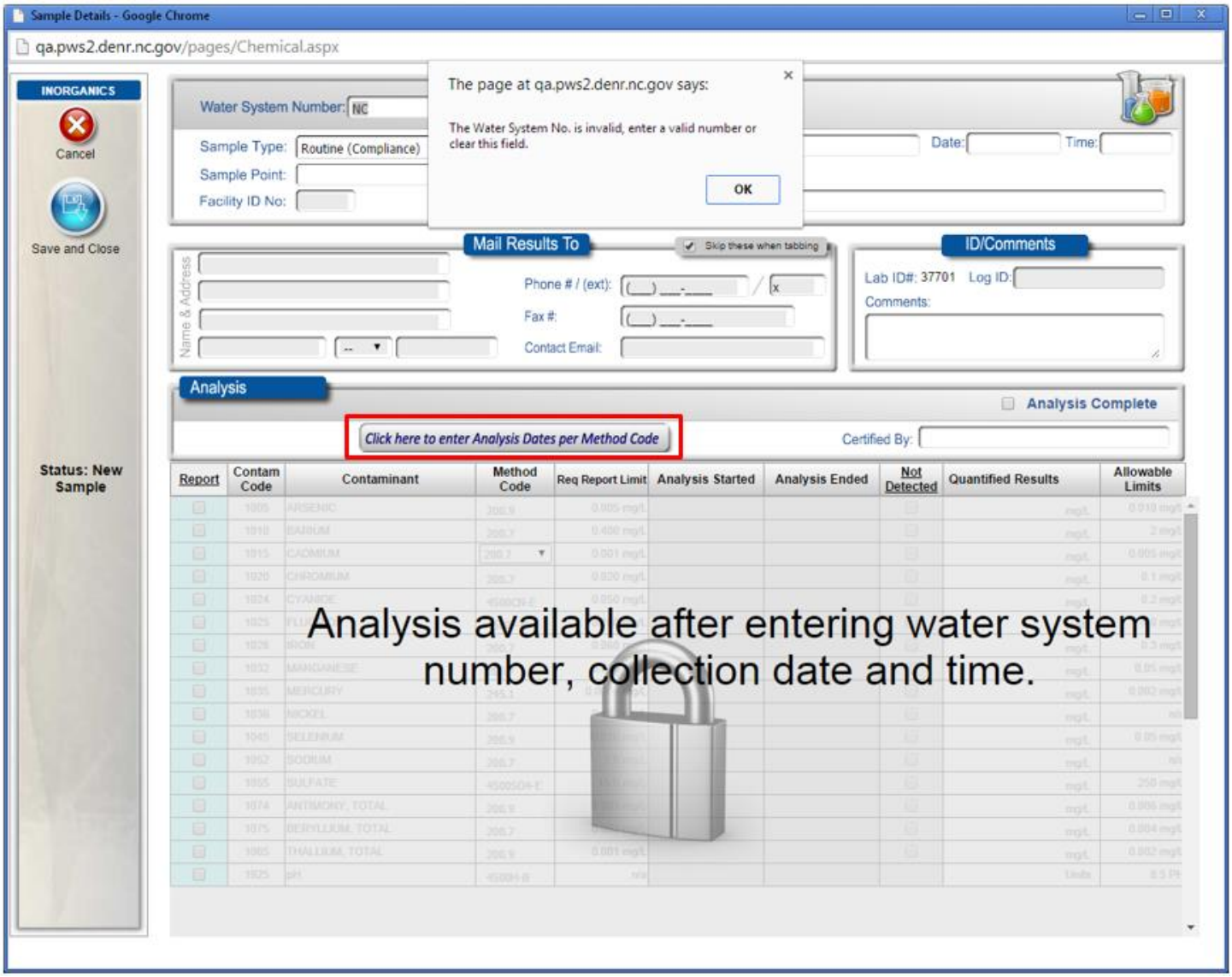


Figure 6. Inorganics, SOCs, THMs/HAA5s, and Radionuclides Entry Screen

The screen for these chemicals has an extra button (Figure 17 above) – to enable entering different analysis begin/end dates and times – see below for more details.

By depressing the "Click here to enter Analysis Dates per Method Code", the user can enter method-appropriate dates and times for each analysis on the following screen.

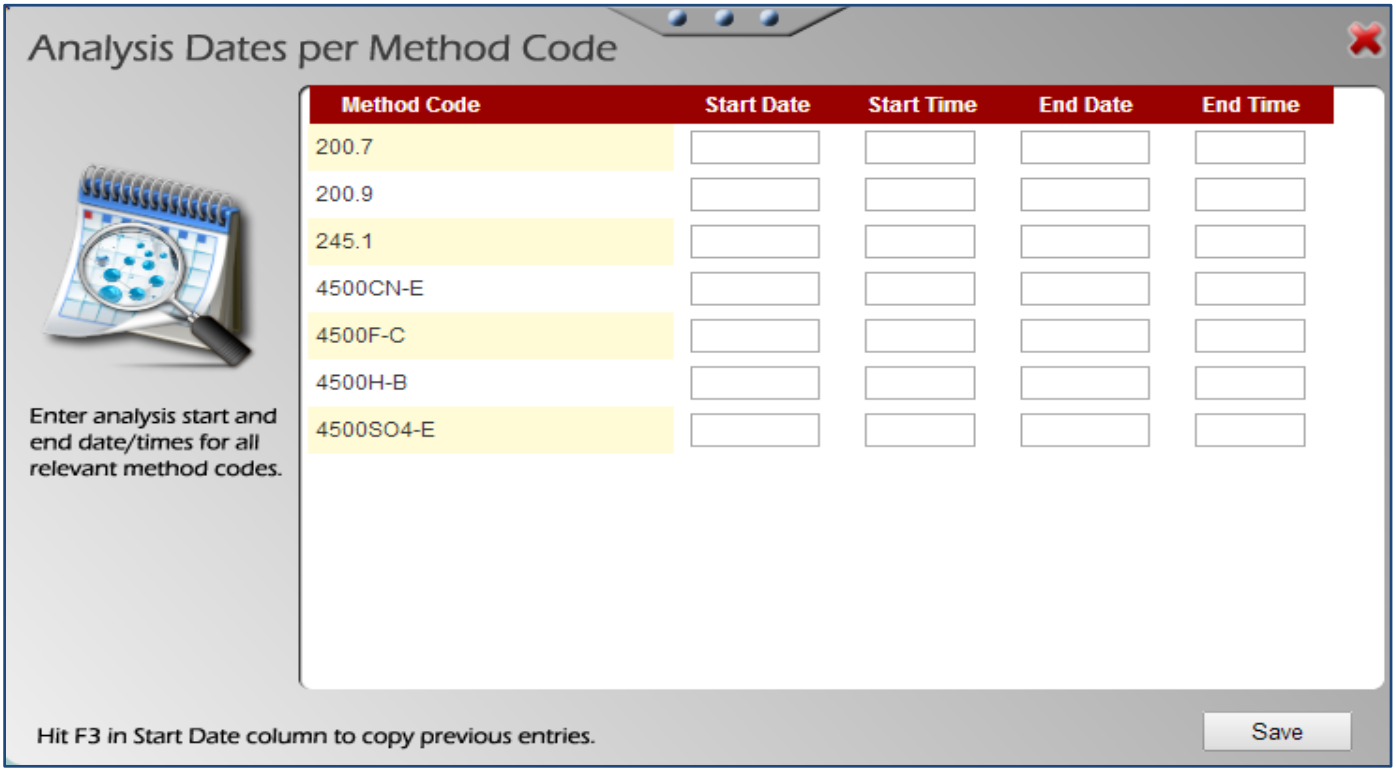


Figure 7. Analysis Dates and Times for Different Methods

When analysis date and time information is entered, the user can proceed entering the analytical measurements. Check the “Report” row, in order to be able to enter the measured (or non-detect) result for each contaminant, see below for Nitrate/Nitrite example.

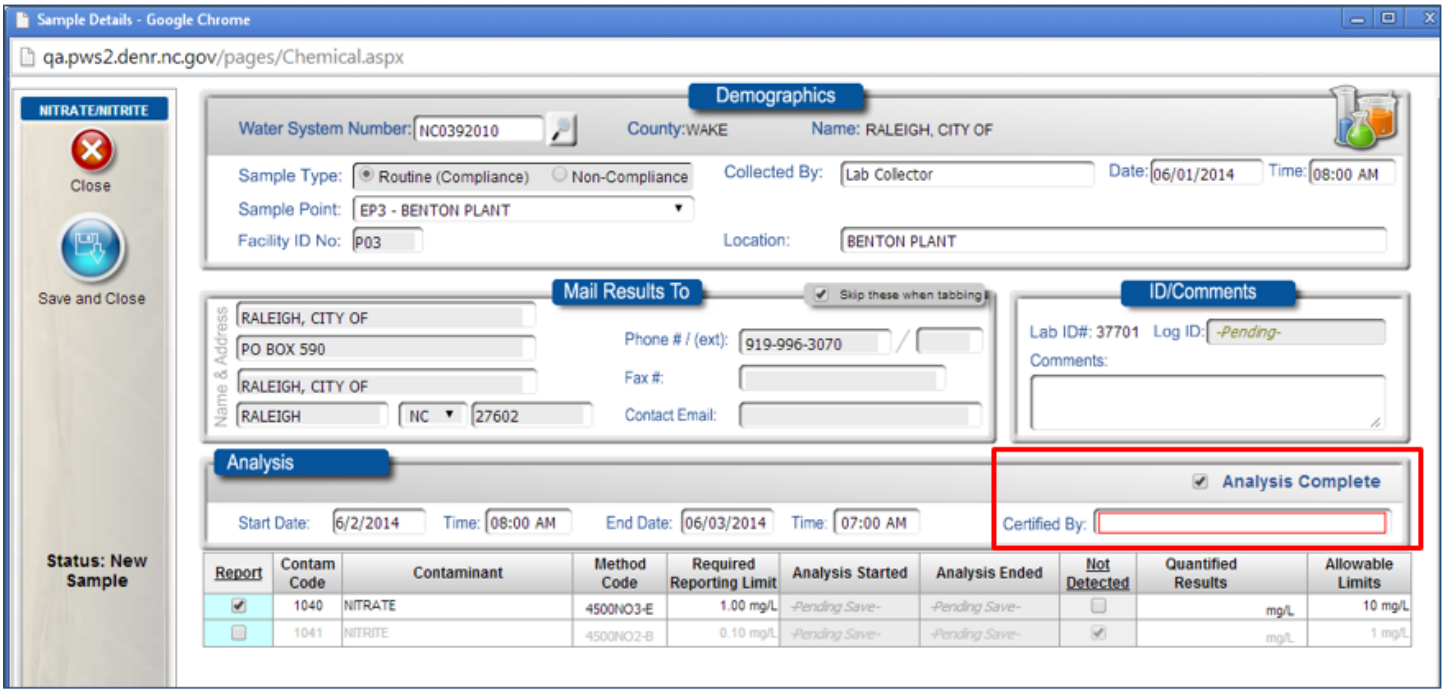


Figure 8. Entering Analytical Measurement

“Certified By” and “Analysis Complete” fields must be completed before an analysis can be saved.

Once the analysis is completed and saved, it will appear in “RDY” (for “ready to submit”) status in Main View. A unique Lab Log ID will be created by the software and displayed with each analysis, see screen below.

Figure 9. Chemical Analysis in Ready Status in Main View

2.2.3. Entering Chemical Batch

Batch functionality is an enhancement built in to save lab users keystrokes when entering information for multiple samples from the same analysis run. Information that is known to be common among all samples in the batch (i.e., the analysis start dates/times are all the same, or all the samples are from the same water system) can be entered just once, and the software will later apply it to each sampling result automatically.

2.2.3.1. Adding Chemical Batch

To begin a new batch, click the “Add Batch” button on the top row in Main View. The following screen opens:

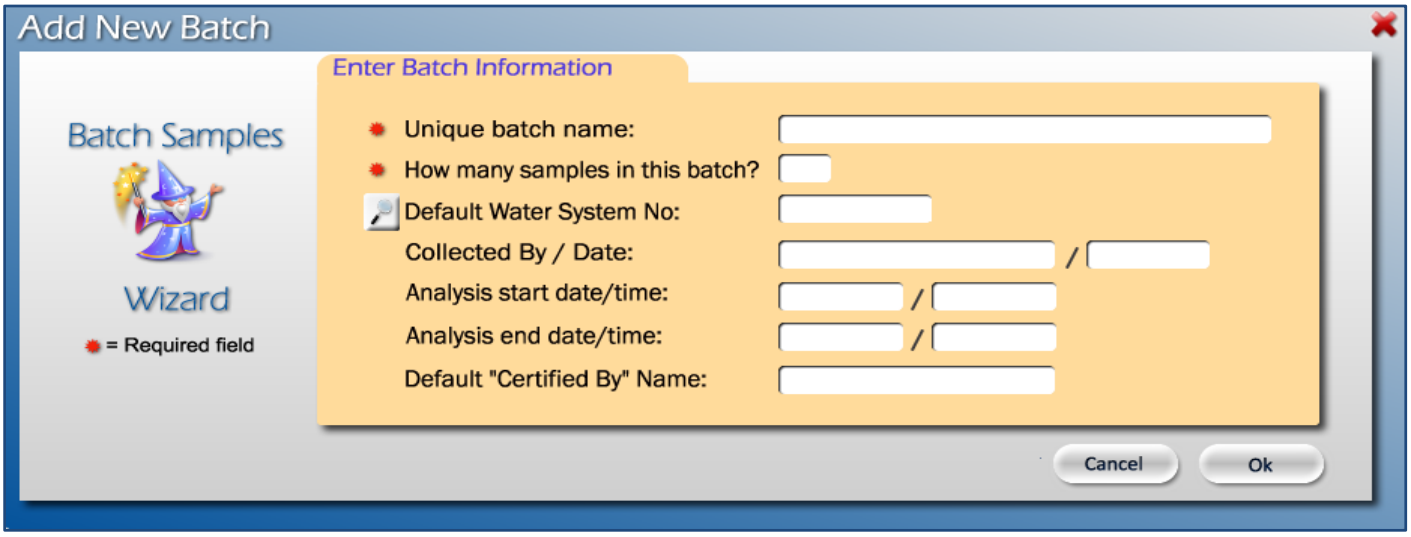


Figure 10. Add New Chemical Batch Screen

Each field marked with a red dot must be populated. Fields that do not have a red dot can be optionally populated. If those optional fields (Default Water System No, Collected by, Collection Date, Analysis Start/End date and time, Certified by) are not populated in the Add New Batch Screen, they will need to be filled in on the Data Entry Screen for each sample/analysis. Note that “Analysis start date/time” and “Analysis end date/time” fields would not be populated on the batch screen for Inorganics, SOC and THM/HAA5 as dates and times are populated for each method on the analysis screen, as explained above.

Below, each field is explained in detail.

Unique batch name: Each batch, once created, must be saved until all sample and analysis information is entered. In order for the user to have access to this batch in progress, the batch must have a unique name. Once a batch is complete, the batch as an object is automatically deleted, and all of the results are moved into the Main View queue and can only be accessed individually. The name for that batch can then be reused.

How many samples in this batch? The maximum number of samples allowed for one batch is 99. The number of samples entered here may be changed at a later point on Select/Edit Batch Screen. More details are included below, under “b. Editing Batch Samples”.

Default Water System No: Similar to individual sample, Water System No. can be entered here. You can also search for a water system by number or name by pressing on the “magnifying glass” icon to the left. If all samples in a batch are from the same water system, the water system number should be entered here - if not, “Water System No.” field will need to populated on the Chemical Entry Screen.

Collected By / Date: If all samples in a batch are collected by the same person and/or on the same date, these fields should be populated.

Analysis start date/time: Analysis end date/time:

If all analyses in the batch share the start and end date/time information, it should be populated here.

Default "Certified By" Name: This field should contain the first and last name of the person certifying the analysis.

Once all of the information on the Add New Batch Screen has been completed, click “Save.” You will now be able to proceed to entering individual sample details and analysis information.

2.2.3.2. Editing Chemical Batch

Entering individual sample details and analysis information can be accomplished through “Edit Batch” mode. To begin entering this information, click on the “Edit Batch” button in Main View.

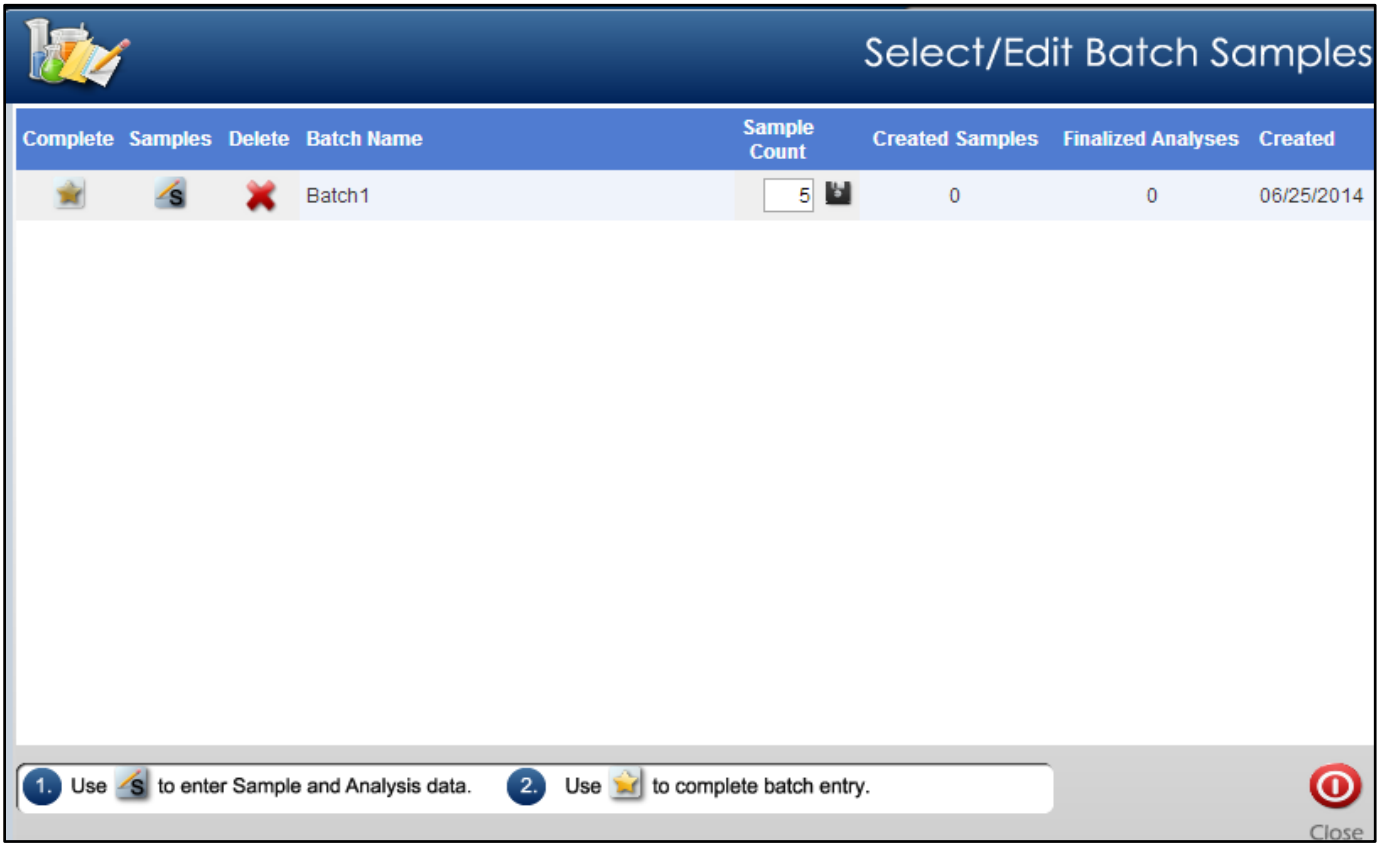


Figure 11. Select/Edit Chemical Batch Screen

This is also where the number of samples in the batch can be changed. To change the number, enter the new number under “Sample Count”, and click the button to its immediate right.

2.2.3.3. Entering Sample/Analysis in Batch Mode

Next, proceed to completing data entry in the batch by populating fields for sample type, facility, location, collection time. Also complete the system and collector/collection date information, if it was not entered when the batch was created, as well as analytical information.

Click the Samples icon in the corresponding row on the above screen.

The chemical entry screen will appear as depicted in Figures 15, 16, and 17. Proceed to enter the rest of the information as explained in the accompanying instructions.

Once the last analysis is entered and saved, the only remaining pre-submittal step is to complete the batch. This step moves the batch from “Edit Batch” mode into Main View. After this step, the batch can no longer be edited via “Edit Batch” as it is split up into individual sampling results instead. For this reason, before completing a batch, the user needs to verify that all of the information entered is correct, as the convenience of batch editing will be gone and any changes will have to be made to each result individually. To complete the batch, click star icon.

Note that when individual batch samples are transferred to Main View, the Select/Edit Batch Screen will indicate “No matching records found”. Each individual sample and its associated lab results should now be displayed as “RDY” on the Main View.

3. Submitting Sampling Results

! To better serve your customers and manage your data more efficiently, it is strongly recommended that you submit sampling results to CMDP within 24 hours of completion of the analyses. This expedited submittal of sampling results will enable your customers to view their monitoring results under "Sampling Status" and "Drinking Water Watch" on the PWS Section's website immediately. If data cannot be submitted in this timeframe, submittal of data on a weekly basis, at a minimum, is recommended.

3.1. Uploading Sample Files to CMDP

Once your samples have been created in LDS and have a "RDY" status, they may be uploaded to CMDP directly from the LDS dashboard. There are two options: "CMDP ALL RDY", which uploads all the samples with "RDY" status, and "CMDP Selected", which uploads only the samples that have their checkbox selected. Click the icon you would like to use to upload the samples.

Figure 12. Upload Icons in LDS - Upload Selected or Upload All RDY

Note: Composite samples must be uploaded individually using the 'Upload Selected' icon.

Once you have chosen either option, a pop-up window will prompt you to enter your CMDP username and password. Enter your SCS credentials to create and send an XML file to CMDP.

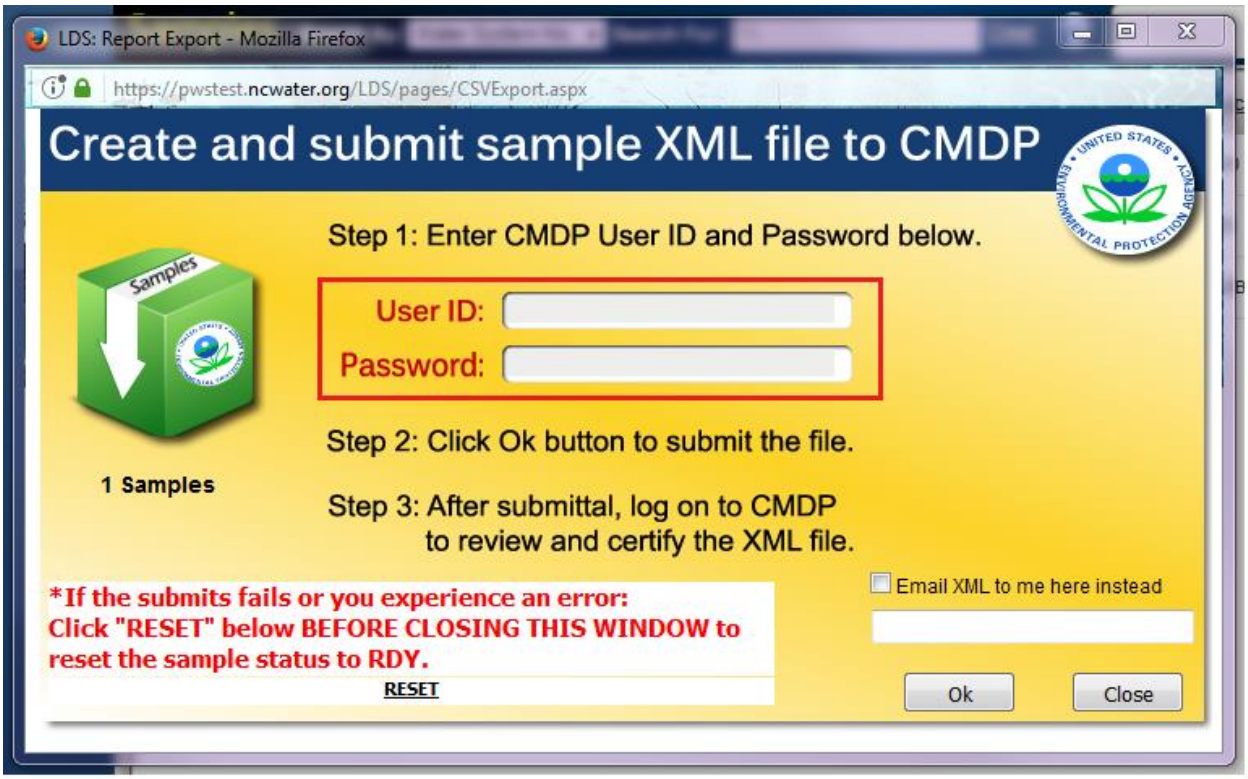


Figure 13. Create and Upload XML File to CMDP

Read the prompted agreement and click “OK” to continue, or “Cancel” to make changes. Once you click “OK”, you will need to continue to the CMDP website to complete the submission to the State.

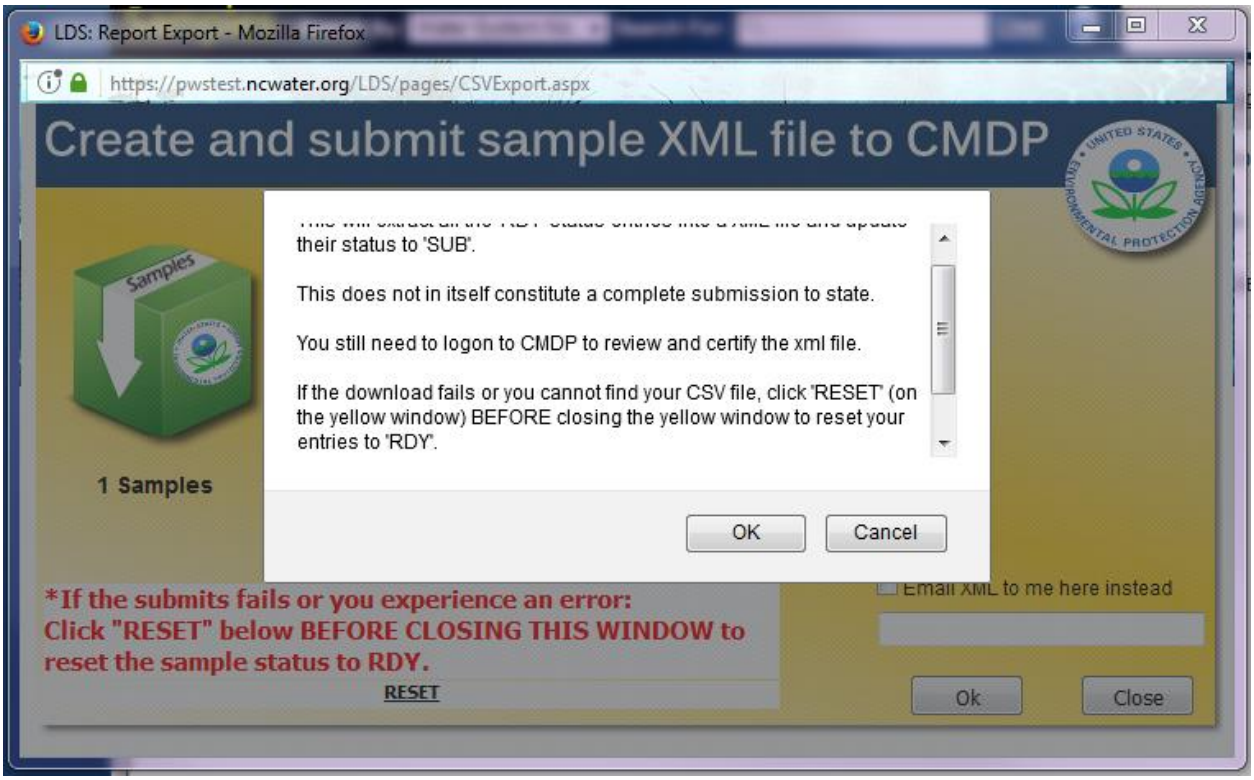


Figure 14. Agree to Upload File to CMDP and to Login to CMDP to Review and Certify the File

A pop-up window will confirm that the file was sucessfully sent to CMDP. Click “OK”.

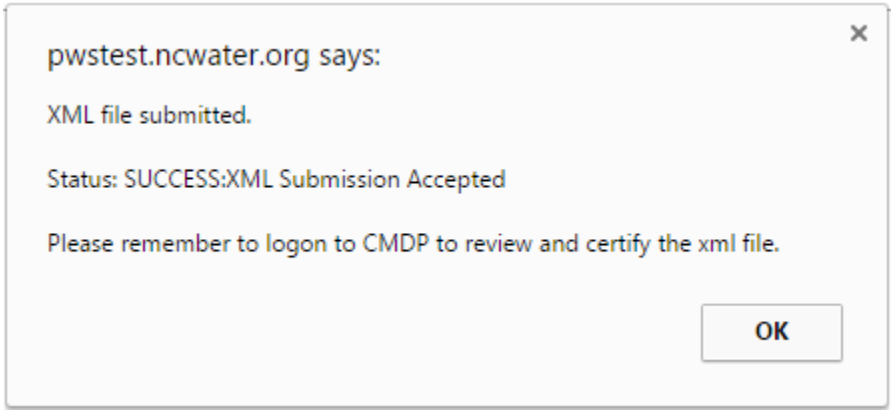


Figure 15. Pop-up Notification of File Successfully Submitted to CMDP

Close out of the upload file window and use the “Go To CMDP” Icon at the top of the page to open a new window to the CMDP login screen.

Figure 16. Use “Go To CMDP” Icon to open the CMDP login screen

3.2. Reviewing, Certifying, and Submitting Samples in CMDP

To verify that the sample(s) uploaded or transferred to CMDP successfully, log on to the CMDP web application (https://cmdp.epa.gov) using your SCS login credentials.

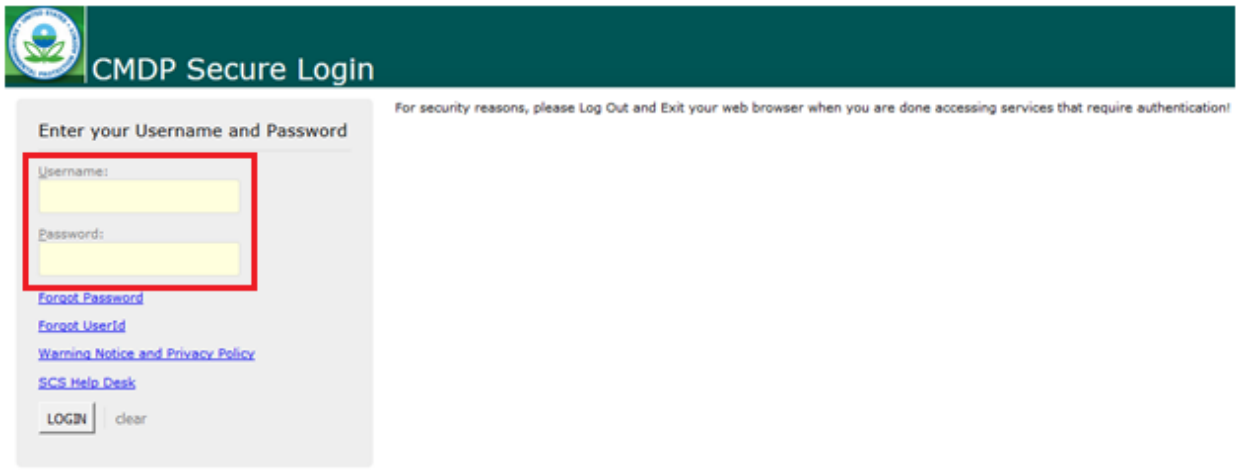


Figure 17. Login to CMDP using your SCS Username and Password

Select the “Drinking Water Sample Jobs” tab near the top of the page to view a list of submitted files in “Job Maintenance View”.

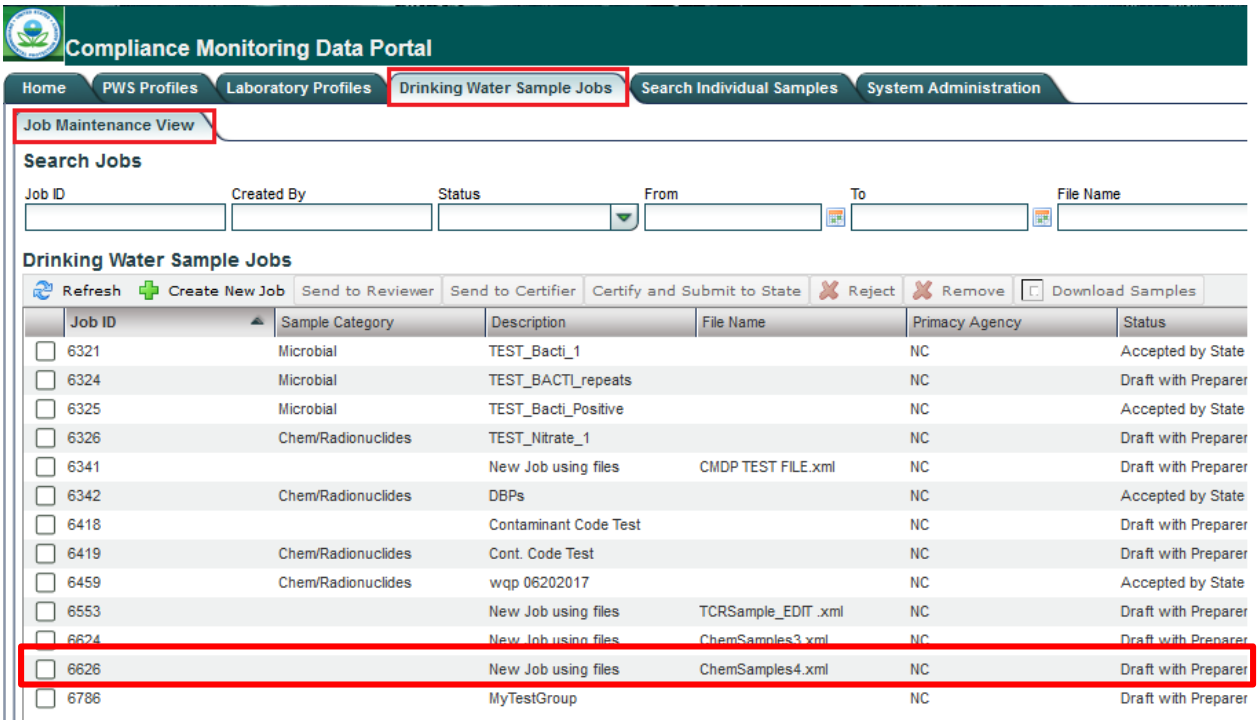


Figure 18. View Drinking Water Sample Jobs

User will then double-click the sample job they just created to open the “Job Summary View”.

In the “Job Summary View”, click on the “Validation” tab to check the XML file for errors. ”XML Submittal Validation Summary” will show how many samples of each type were uploaded, how many were without errors, and how many had errors. Click on the row to view error descriptions.

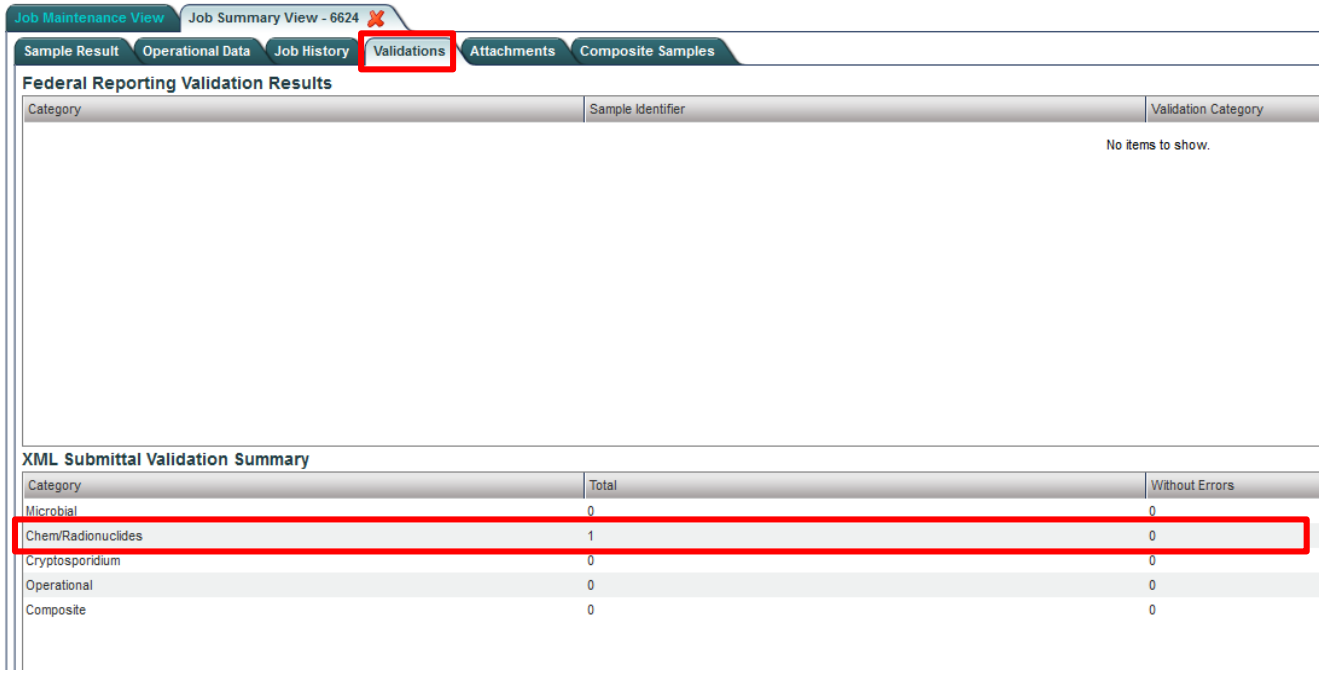


Figure 19. Checking the Validation Tab for XML File Errors

After clicking on the row of the samples you wish to see, the “XML Submittal Validation Error Details” section will show error messages detailing where and what type of error occurred.

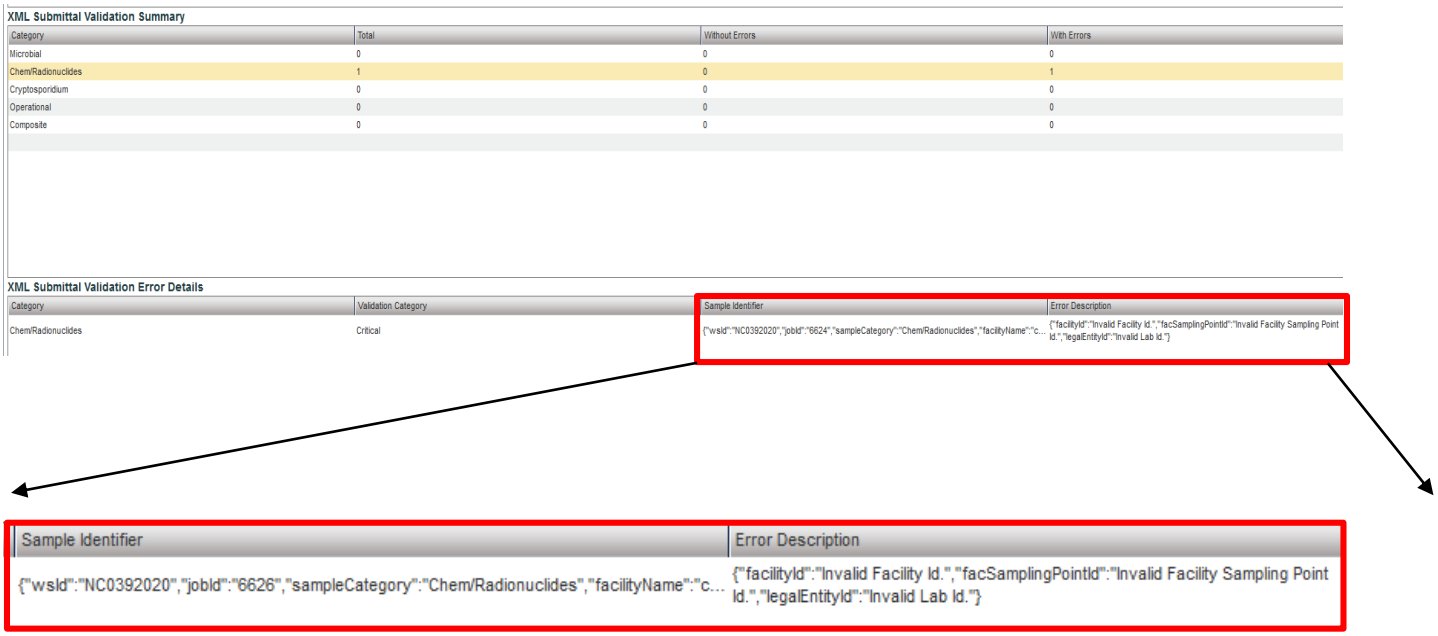


Figure 20. Reviewing Error Descriptions

If critical errors are found, close out of the “Job Summary View” and return to the “Job Maintenance View”. Select the job and click “Remove” to delete. Make corrections to the samples and re-upload the sample file following the steps outlined in Section 3.1 above, **Uploading Sample Files to CMDP**.

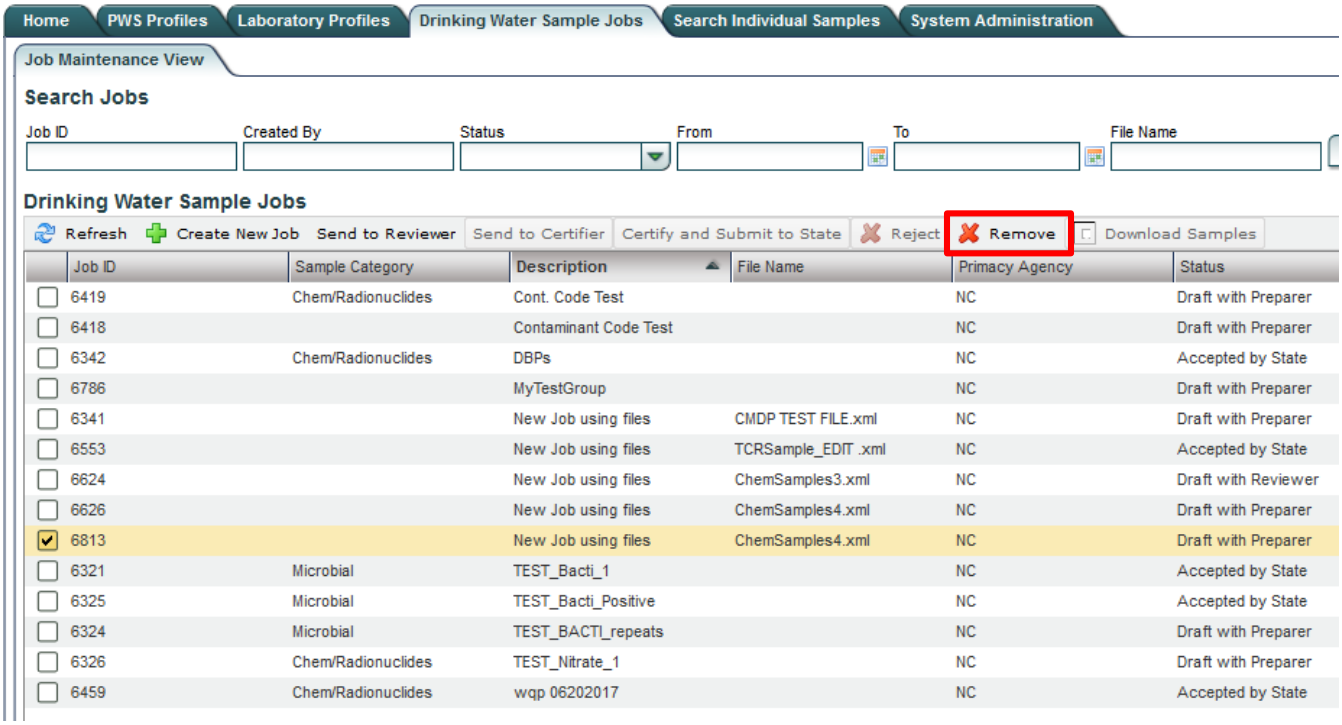


Figure 21. Removing Job Files from CMDP

Once all errors have been corrected, transfer the job to the reviewer. Click the box next to the job to select it, then click ‘Send to Reviewer’.

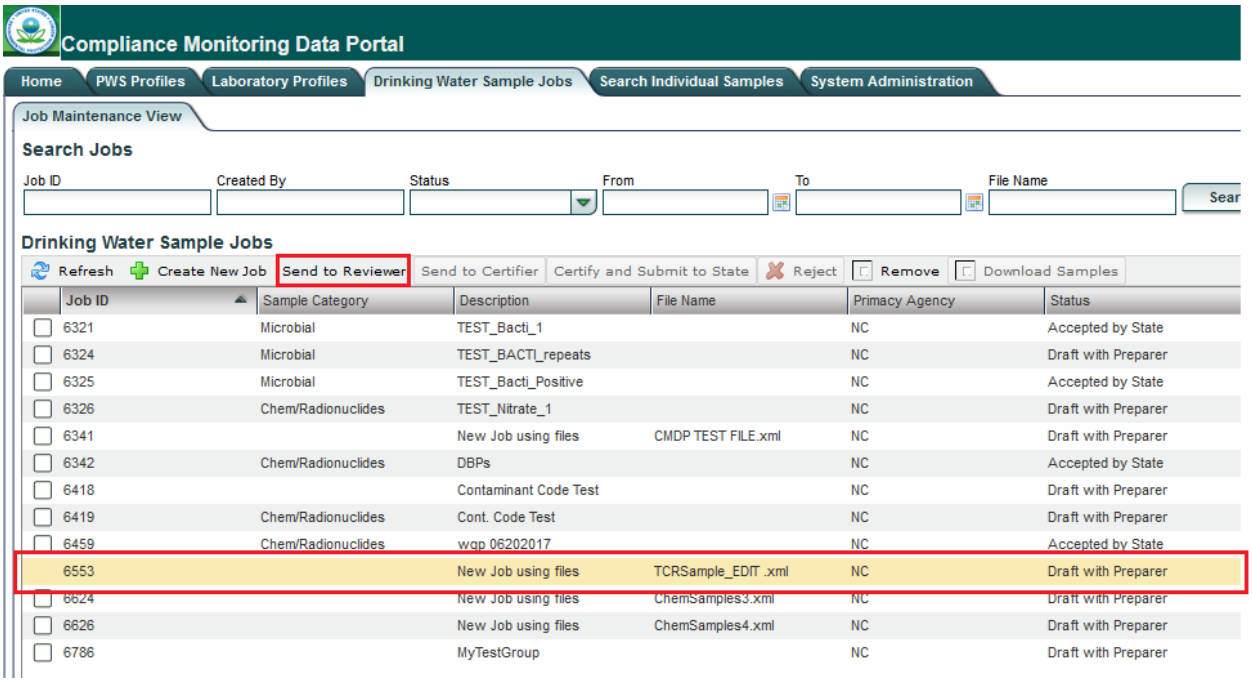


Figure 22. Certifying and Submitting Step 1: Send File to Reviewer

A prompt will ask you to select an individual from the dropdown menu. Once the reviewer has been selected, click “Submit”. For this step, users with Certifier or Administrator roles will be selecting themselves.

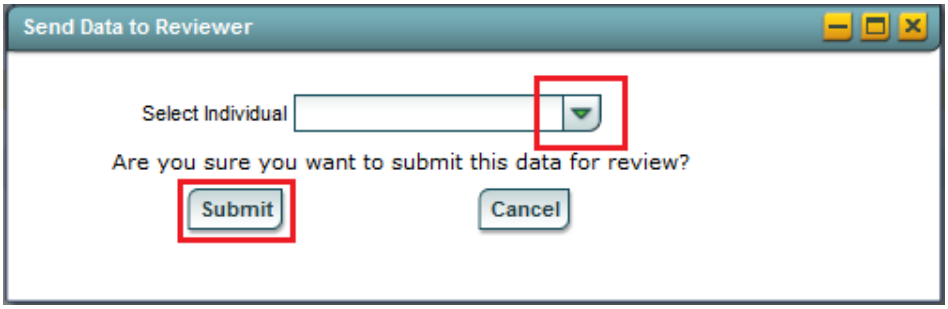


Figure 23. Submitting the File to Reviewer

A notification will indicate if a sample was sent successfully.

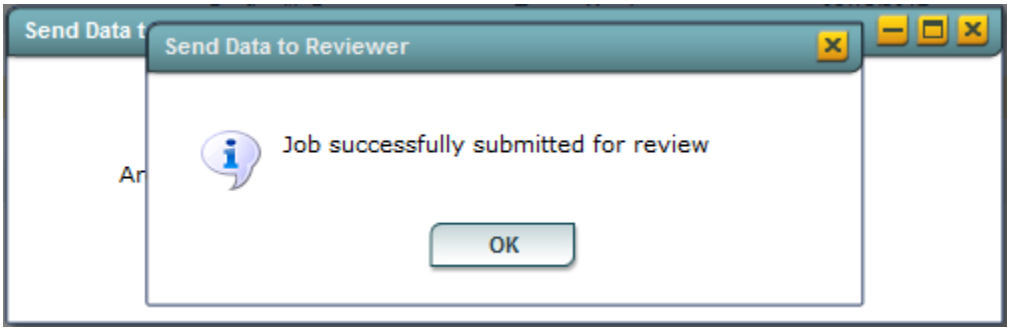


Figure 24. Notification of Job Successfully Submitted for Review

Once the sample has been submitted for review, the Reviewer, if a separate entity than the Preparer, must log on to access the job. From the same "Job Maintenance View" window under "Drinking Water Sample Jobs", the Reviewer's name should appear under "Reviewer".

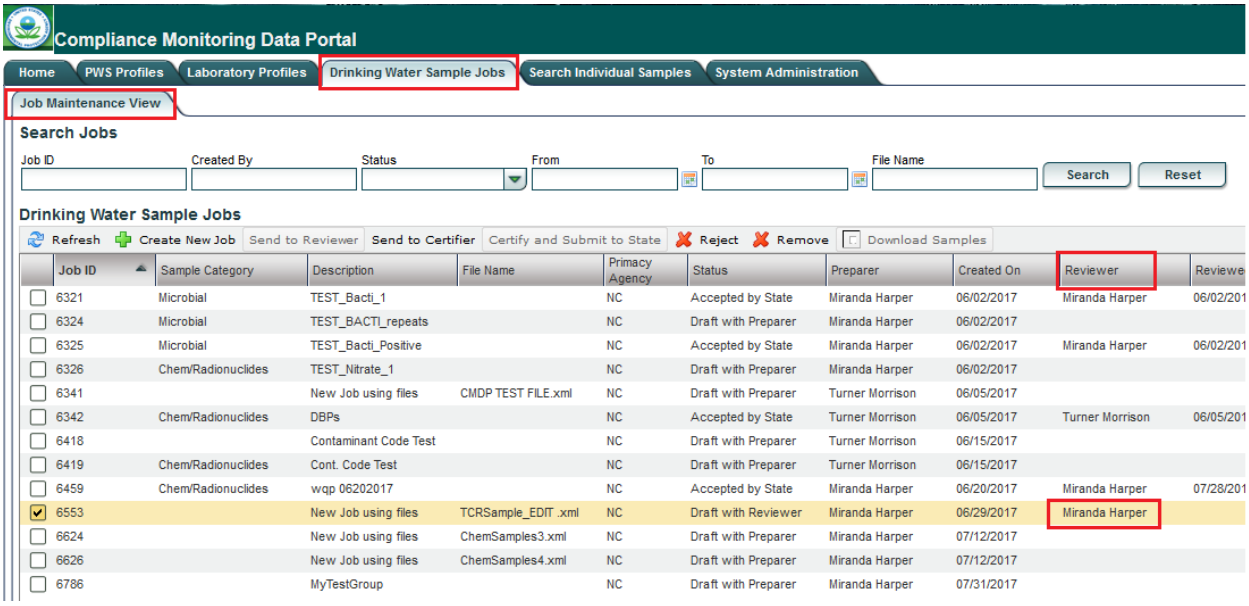


Figure 25. How to Verify that the Job has been sent to the Reviewer

To review a sample job, double click the job you want to view. A window titled "Job Summary View" will open. The Reviewer then clicks on the "Sample Result" tab to view the sample information. The viewer will see a summary of the sample information for all the samples in the file.

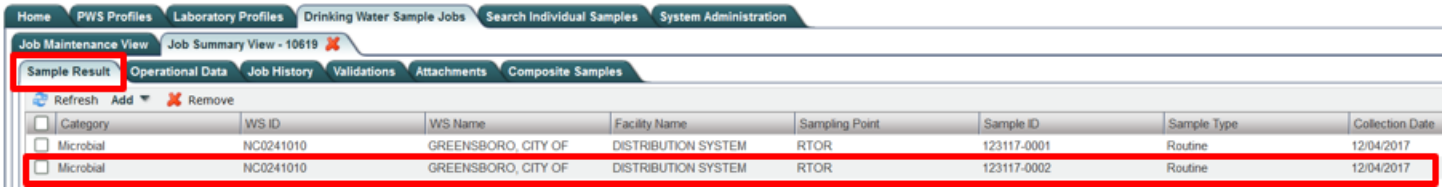


Figure 26. How to Review Sample Results

For a more detailed view of the sample information, double click on the sample row that you would like to view. A new window will open displaying the analysis information. When you have finished reviewing the sample information for the selected row, click the “Close” icon. You will return to the “Sample Result” view and can select another sample to review.

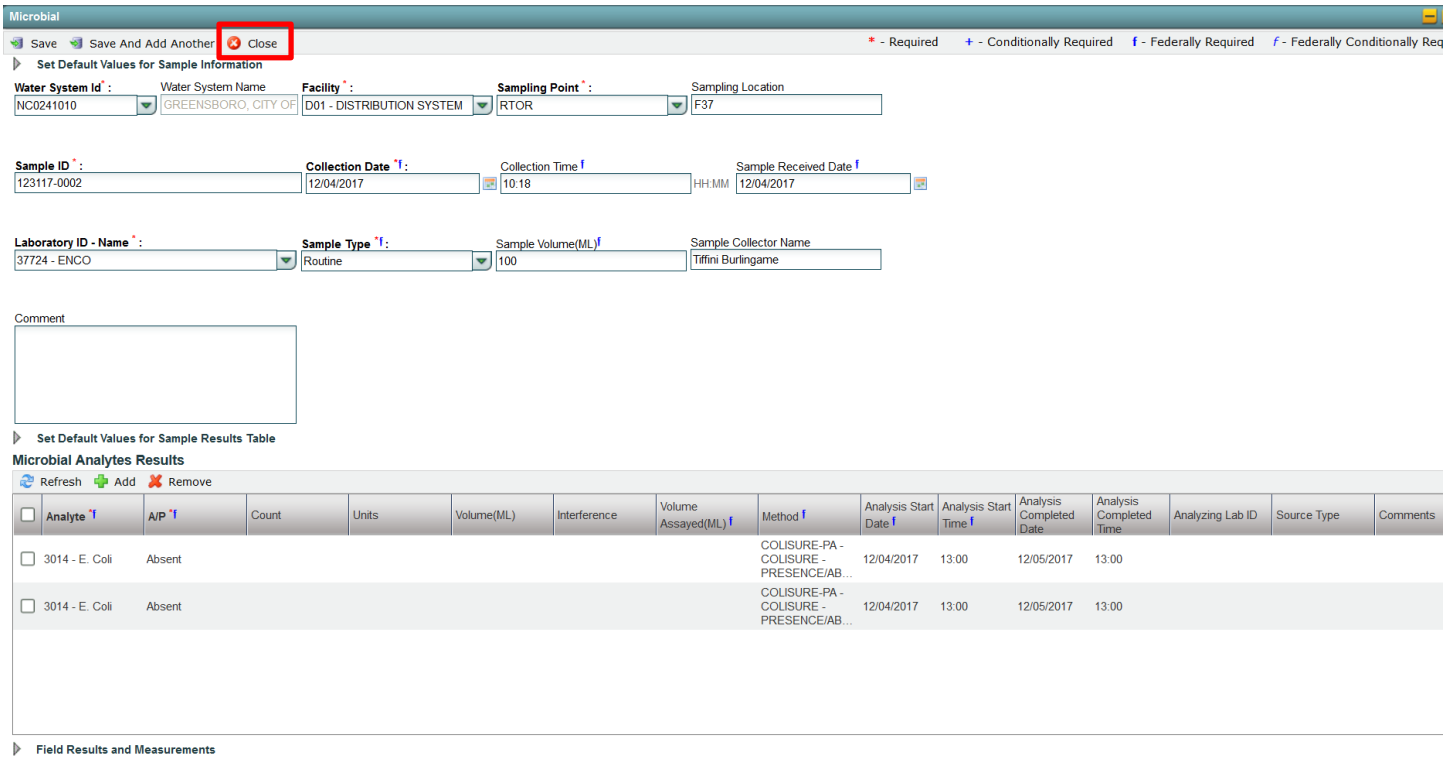


Figure 27. Sample Information View

When the review of the sample information is complete and the job is ready to send to the Certifier, return to the “Job Maintenance View” window, select the job by checking its box, and then click “Send to Certifier”.

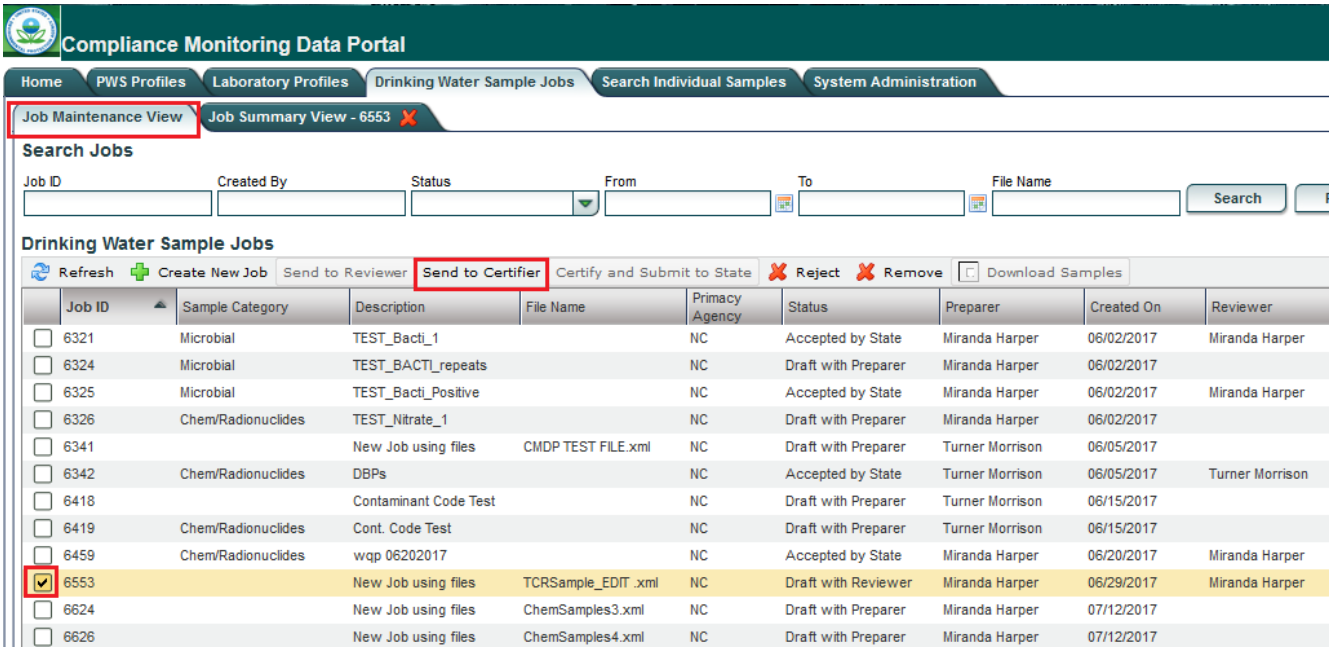


Figure 28. Certifying and Submitting Step 2: Send File to Certifier

Select an individual from the dropdown menu and click “Submit”. Remember that users with Certifier or Administrator roles will select themselves.

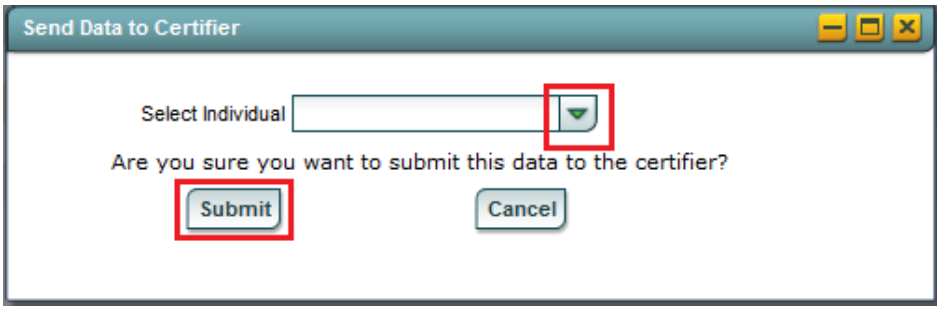


Figure 29. Submitting the File for Certification

A notification will indicate if a sample was sent successfully.

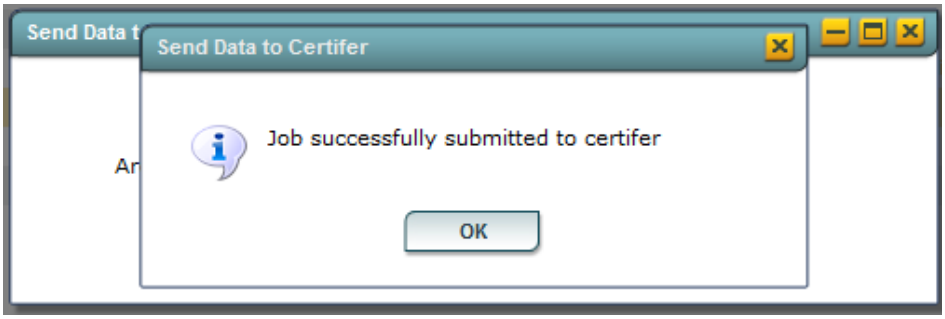


Figure 30. Notification of Job Successfully Submitted to Certifier

Once the sample has been submitted for certification and submission, the Certifier, if a separate entity than the Reviewer, must log on to access the job. From the same “Job Maintenance View” window under “Drinking Water Sample Jobs”, the Certifier’s name should appear under “Certifier”.

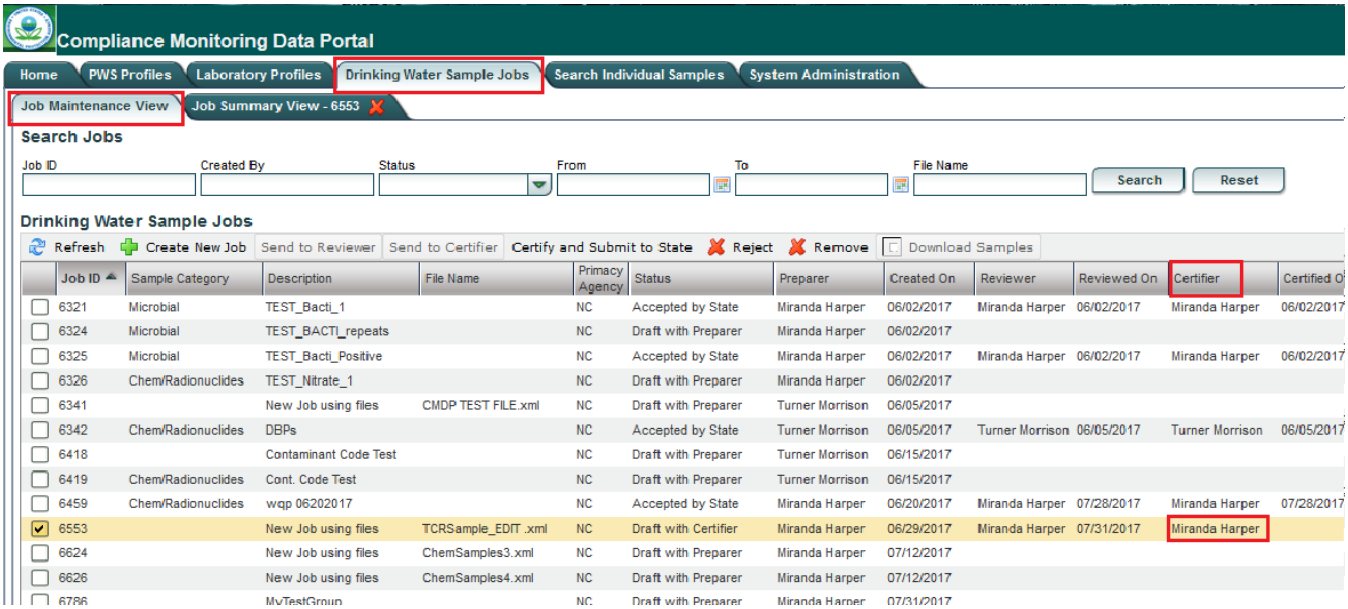


Figure 31. How to Verify that the Job has been sent to the Certifier

To certify and submit to the State, select the sample and click “Certify and Submit to State”.

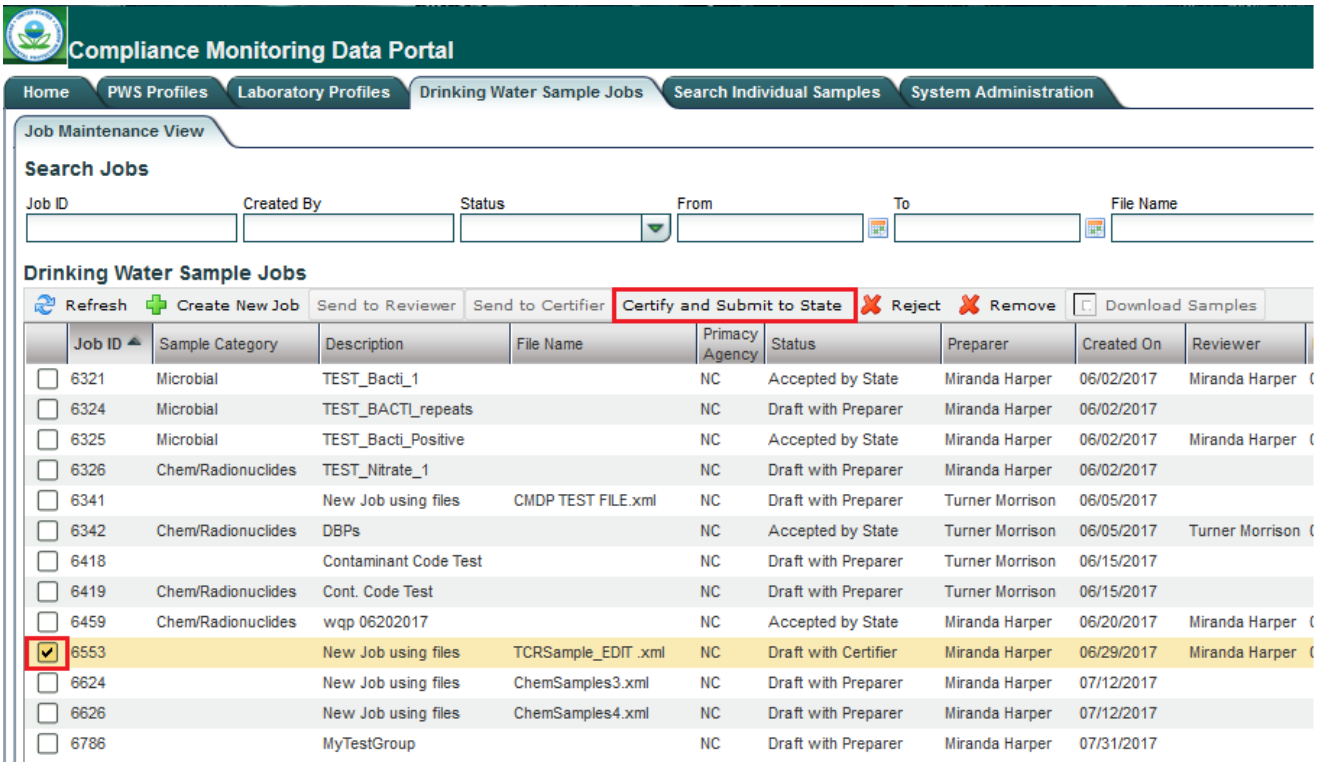


Figure 32. Certifying and Submitting Step 3: Certify and Submit to the State

Answer the security question, check the certification box, and click “Submit”. If the Certifier would like to have a file submission confirmation, click “Download Sample XML” before clicking “Submit”.

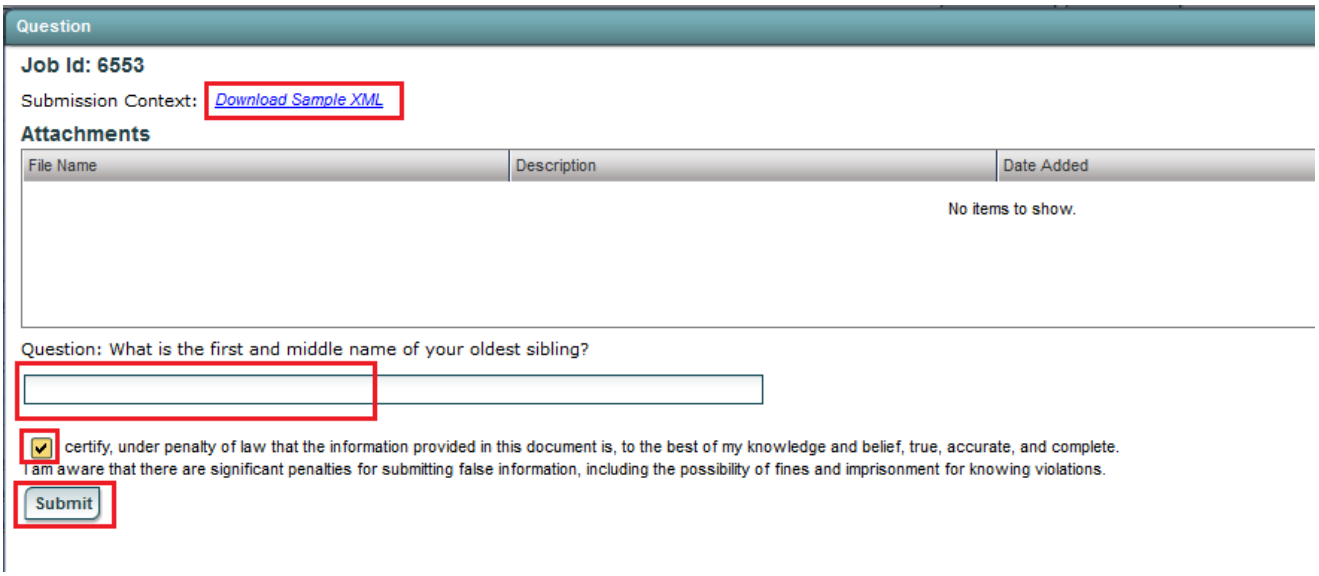


Figure 33. Certifying and Submitting to the State by Answering Security Questions

Clicking “Download Sample XML” will produce a table with the following example information:

Job Id: 6624	
Prepared By: Miranda Harper	Created On: 07/12/2017
Reviewed By: Miranda Harper	Reviewed On: 08/03/2017
Certified By: Miranda Harper	Certified On:

Figure 34. Download Sample XML Table

A notification will verify that the job was successfully submitted to the State.

Figure 35. Notification of Job Successfully Submitted to the State

The status of the sample will change to “Submitted”. This indicates that the file has been marked for submission to the State and is waiting to be accepted into the State’s database.

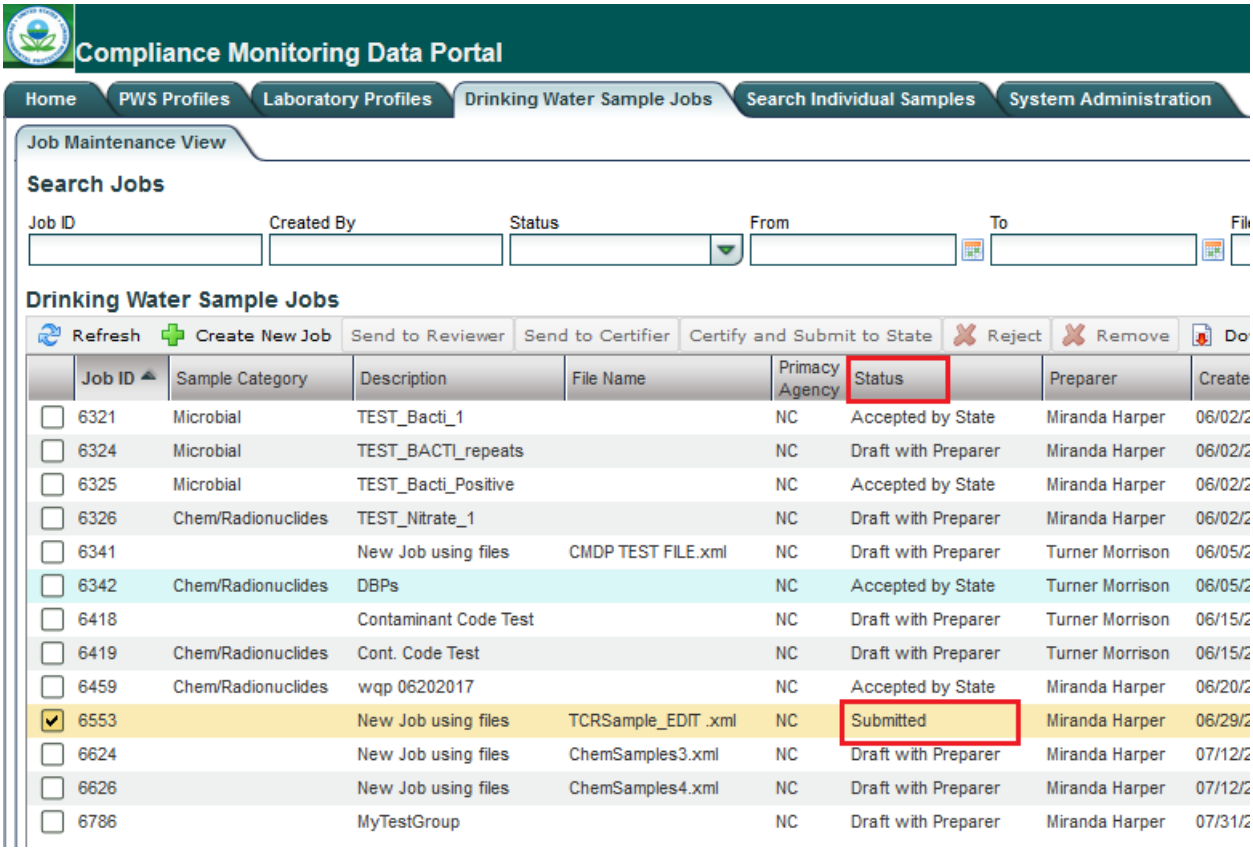


Figure 36. Verifying Status of the Sample Changed to Submitted

The State database (SDWIS) will refresh every 30 minutes and accept samples that have been marked for submission. Once the sample is accepted, the status of the job will change to “Accepted by State”. At this point, no further action is required. If an error is found after the file has been accepted, contact the appropriate Rule Manager for the sample contaminant to request that the sample be deleted.

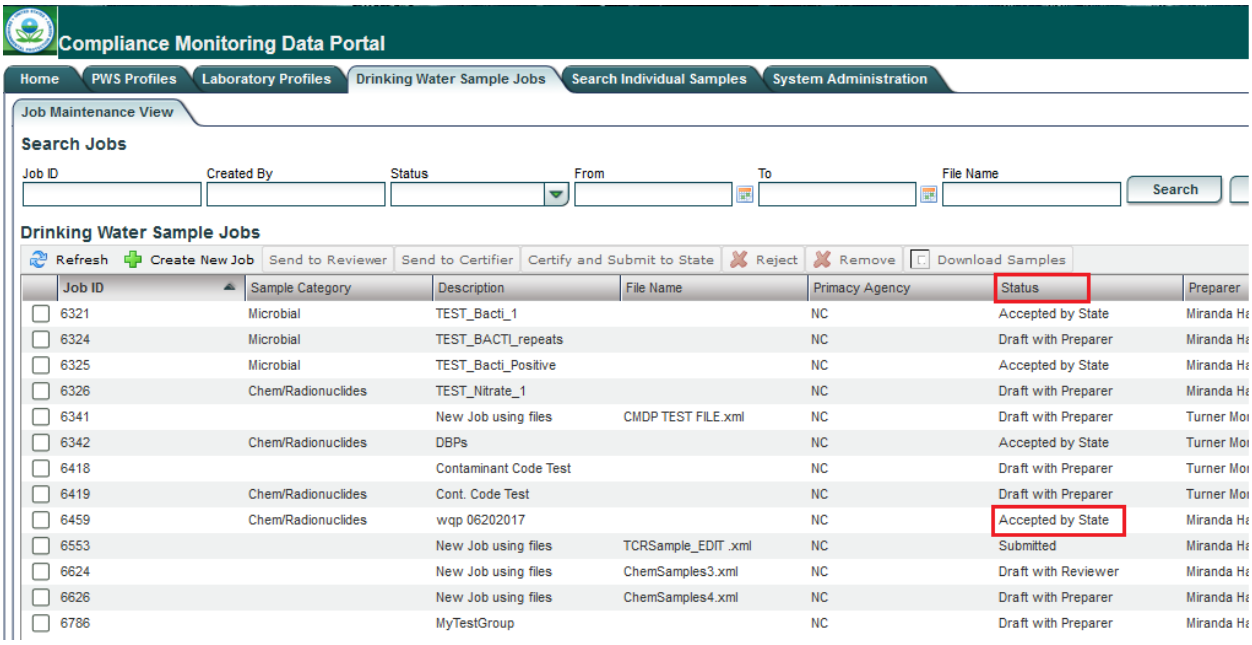


Figure 37. Verifying Status of the Sample Changed to Accepted by State

If an error in the sample information is found before the sample has been certified and submitted to the State, you may delete the entire job ID as you would if you had a critical error (page 5) or delete the individual sample that needs to be corrected. To delete an individual sample from a job, open the Job Summary View by double clicking on the job in the 'Job Maintenance View', select the checkbox next to the sample that needs to be removed, and click 'Remove'. Contact the appropriate rule manager for the sample contaminant to have the sample reset in LDS so that corrections can be made. Resubmit the sample following the same CMDP upload and certification procedure.

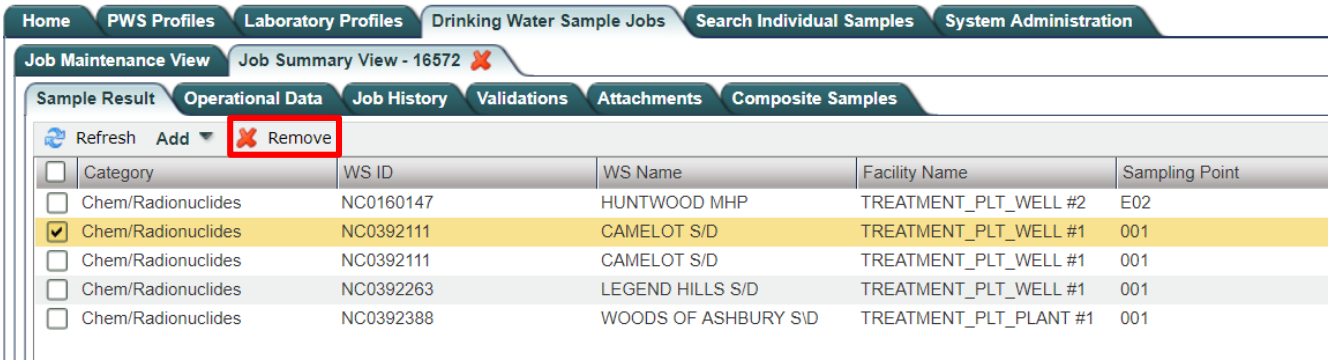


Figure 38. Removing a Sample from a Job File

If an error in the sample information is found after the file has been certified and submitted, contact the appropriate rule manager for the sample contaminant to have the sample deleted from the State database and reset in LDS. Please be aware that once the sample job has been certified, the samples cannot be modified or deleted in CMDP. Therefore, the user must use an amended sample ID number when resubmitting modified sample data to prevent a duplicate sample ID error in CMDP. We recommend adding an _A to the end of the end of the sample ID to denote that it has been amended (i.e. 20190101_W01_A). The rule manager can still reset the sample in LDS back to RDY status so that the sample data and sample ID can be updated for re-submission. Remember to uncheck the analysis complete box to unlock the sample data for editing. For total coliform samples this requires opening the analysis screen first (the microscope icon), unchecking the complete box, and saving before you can modify the sample in the edit/review screen (paper and pencil icon). The analysis complete box must re-checked to advance the sample from ANL status back to RDY status.

4. Generating Reports

An ability to export your data into an Excel file was added based on users' requests. Please note that this option exists for your own informational needs, be it bookkeeping or reporting to clients, and has nothing to do with reporting to the State. To export data into Excel, press "My Reports" in the top right-hand corner of Main View Screen.

! Do not submit the Excel file generated through "My Reports" to the State in place of uploading the sample files through CMDP.

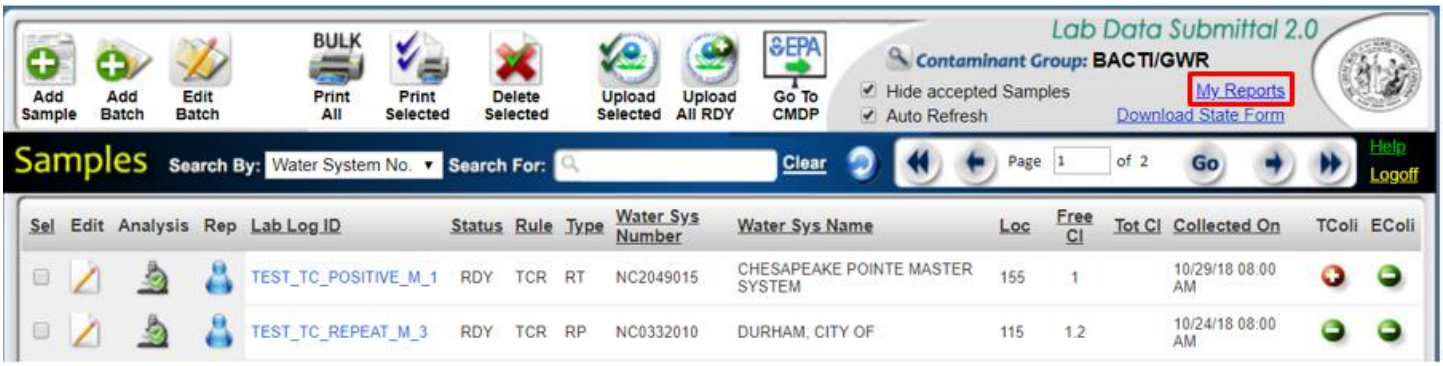


Figure 39. My Reports Option

The Report Screen will open as shown below.

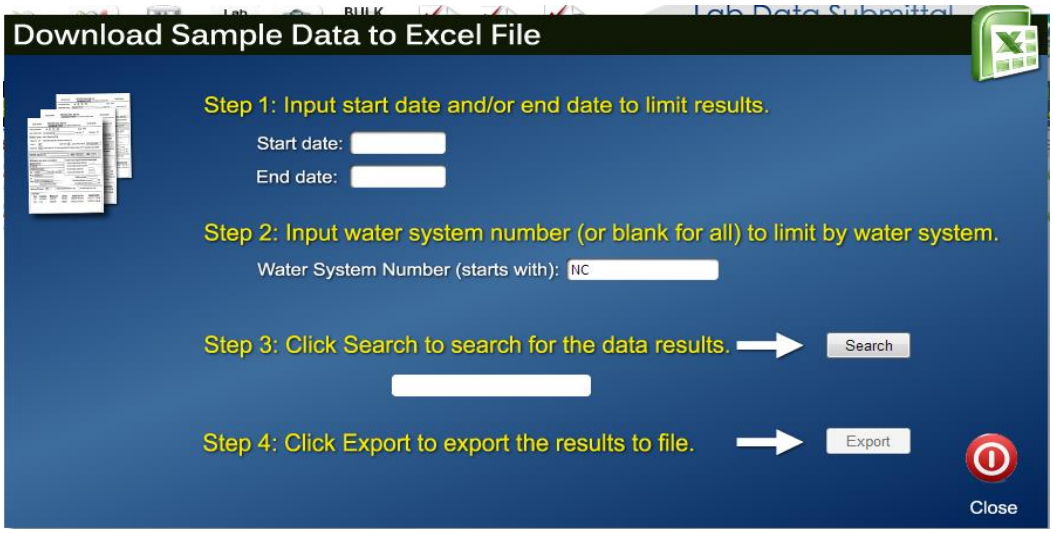


Figure 40. Reports Screen

To obtain a specific record(s), fill in the sample collection start and/or end date and the water system number (leaving a field blank will bring all records, e.g. to see all water systems for a selected date range, leave the water system number field blank). Then click "Search" to view the number of matching records. To generate the Excel file, click "Export." The file will contain all of the data that you requested, at which point you can use the additional sorting, filtering, and calculating options available in Excel.

Appendices

Appendix 1 - Sample Status

Each sample in the LDS Main View can be in one of the following statuses:

- "**PRE**" (for "pre-collection") - applies only to individually (i.e. not as a batch) entered samples. Contains only the information necessary to be on a sampling form sent out for collection with a bottle, such as Water System No., Name, Source, Facility Type, Lab ID, Sample Type, Facility ID, Sample Point. Lab Log ID, Location Code and Location can be optionally entered at this stage.

- "**PST**" (for "post-collection") - applies only to individually entered samples. All sample information is entered and disinfectant information (for TCR samples), "Collector Name", "Collection Date" and "Collection Time" fields are populated; no analysis information is entered yet.

- "**ANL**" (for "analysis started") - this status will appear after analysis information had started to be entered, but the entry was saved before completion.

- "**RDY**" (for "ready for submittal") - in addition to all required sample information, analytical result, dates, times, and Lab Log ID are entered, the "Certified By" field is populated and the "Analysis Complete" box is checked. This status will also be displayed for all sampling results entered as batches, after a batch is completed.

- "**SUB**" (for "submitted to SDWIS") – an XML file for the sample results has been submitted to CMDP for final certification and submission to State. The sampling results have not yet been accepted into SDWIS database.

- "**RJT**" (for "rejected by SDWIS") – an XML file with sample results had been uploaded to CMDP, but there were errors, either in the sample detail or sample analysis that prevented full acceptance of all records. Details on errors can be viewed by clicking on sample status while it is "RJT", which will also be highlighted in red in Main View.

Each sample in the CMDP Main View can be in one of the following statuses:

- "**Draft with Preparer**" – Job is currently maintained by a Preparer (Reviewer and Certifier roles also have edit rights). Modifications to the Job can still occur (add/edit/remove), and validations will be executed when Job is saved.

- "**Draft with Reviewer**" – Job is currently under review (only Reviewer and Certifier roles have edit rights). Modifications can still occur (add/edit/remove), and validations will be executed when Job is saved.

- "**Submitted**" – Job has been submitted by reporting organization to primacy agency. No modifications are possible.

- "**Accepted by State**" – Job data has been migrated to primacy agency compliance system. No modifications are possible.

Appendix 2 – Contaminant Groups

The table below lists all of the potential contaminant groups for which a laboratory may be certified to perform the analyses. Each contaminant group is represented as a separate module (see Figure 2). Contaminant codes represent analytes that fall under each group, representing analyte codes in SDWIS. These codes are displayed on the state laboratory forms and are preserved in LDS.

Asbestos

Code	***Name***
1094	Asbestos

Bacti/GWR

Code	***Name***
3100	Coliform
3014	*E. Coli*
3001	Heterotrophic Plate Count
3002	Enterococci
3028	Coliphage

Bromate/Bromide

Code	***Name***
1011	Bromate
1004	Bromide

ClO2/Chlorite

Code	***Name***
1008	Chlorine Dioxide
1009	Chlorite

Dioxin

Code	***Name***
2063	2,3,7,8-TCDD

Inorganics

Code	***Name***
1005	Arsenic, Total
1010	Barium, Total
1015	Cadmium, Total
1020	Chromium
1024	Cyanide
1025	Fluoride
1028	Iron
1032	Manganese
1035	Mercury
1036	Nickel
1045	Selenium
1052	Sodium
1055	Sulfate
1074	Antimony
1075	Beryllium
1085	Thallium
1925	pH

Lead/Copper

Code	Name
1022	Copper, Free
1030	Lead

Nitrate/Nitrite

Code	Name
1040	Nitrate
1041	Nitrite

Radionuclides

Code	Name
4000	Gross Alpha, Excl. Radon & U
4002	Gross Alpha, Incl. Radon & U
4006	Combined Uranium
4010	Combined Radium (-226 & -228)
4020	Radium -226
4030	Radium -228
4100	Gross Beta Particle Activity

SOCs

Code	Name
2005	Endrin
2010	BHC-Gamma
2015	Methoxychlor
2020	Toxapene
2031	Dalapon
2035	Di(2-Ethylenexyl) Adipate
2036	Oxamyl
2037	Simazine
2039	Di(2-Ethylhexyl) Phthalate
2040	Picloram
2041	Dinoseb
2042	Hexachlorocyclopentadiene
2046	Atrazine
2051	Lasso
2065	Heptachlor
2067	Heptachlor Epoxide
2105	2,4,-D
2110	2,4,5-TP
2274	Hexachlorobenzene
2306	Benzo(a)pyrene
2326	Penthachlorophenol
2383	Total Ploychlorinated Piphenyls (PCB)
2931	1,2,-Dibromo-3-Chloropropane
2946	Ethylene Dibromide
2959	Chlordane

THMs/HAA5s

Code	Name
2450	Monochloroacetic Acid
2451	Dichloroacetic Acid
2452	Trichloroacetic Acid
2453	Monobromoacetic Acid
2454	Dibromoacetic Acid

2456	Total Haloacetic Acids (HAA5)
2944	Dibromochloromethane
2941	Cholorform
2942	Bromoform
2943	Bromodichloromethane
2950	Total Trihalomethanes

TOC

Code	***Name***
1927	Alkalinity, Total
2919	Carbon, Dissolved Organic (DOC)
2920	Carbon, Total
2922	UV Absorbance @254 NM

VOCs

Code	***Name***
2378	1,2,4-trichlorobenzene
2380	Cis-1,2,-dichloroethylene
2955	Xylenes, Total
2964	Dichloromethane
2968	O-dichlorobenzene
2969	P-dichlorobenzene
2976	Vinyl Chloride
2977	1,1-dichloroethylene
2979	Trans-1,2-dichloroethylene
2980	1,2-dichloroethane
2981	1,1,1-trichloroethane
2982	Carbon Tetrachloride
2983	1,2-dichloropropane
2984	Trichloroethylene
2985	1,1,2-trichloroethane
2987	Tetrachloroethylene
2989	Chlorobenzene
2990	Benzene
2991	Toluene
2992	Ethylbenzene
2996	Styrene

WQPs

Code	***Name***
1016	Calcium
1044	Orthophosphate
1049	Silica
1064	Conductivity @ 25 C Umhos/cm
1925	pH
1927	Alkalinity, Total
1996	Temperature (Centigrade)

Appendix 3 - Miscellaneous Tips and Getting Help

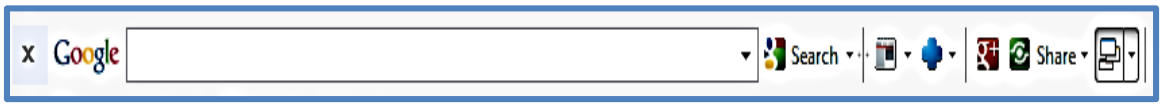
In general, using search and help functions in your browser are fairy reliable ways of getting the answers for browser-related questions. That said, we expect that most users will need at least some information on how to enable pop-ups or to find or select the download folder on your computer. Below are detailed instructions on those two topics for different browsers. In addition, we include instructions on printing, deleting samples, and some troubleshooting tips. The guidance provided in this section is fairly comprehensive and should help overcome most issues you may experience. However, if you have any questions, call support using contact information under "**Getting Help.**"

To enable pop-ups:

Internet Explorer (IE):

- Click the **Tools** button, then click **Pop-up Blocker**, and then click **Pop-up Blocker Settings**.
- In the **Address of website to allow** box, type (or copy and paste) the address of LDS, https://pws.ncwater.org/LDS/pages/samples.aspx, then click **Add,** then close the box.

! **If your IE browser is equipped with Google Toolbar, it will take additional steps to enable pop-ups as Google Toolbar has its own pop-up blocker, see below.**



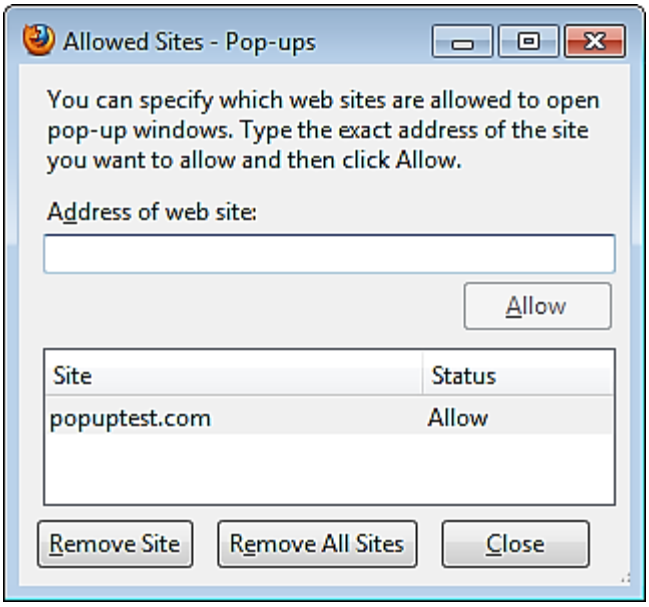
Push the "crossed out monitor" button on the Google Toolbar and this will allow pop-ups from the site.

Google Chrome:

- To see blocked pop-ups for a site, follow the steps listed below:
- If pop-ups have been blocked, you'll see the  icon in the address bar. Click the icon to see a list of the blocked pop-ups.
- To always see pop-ups for the site, select "Always show pop-ups from [site]." The site will be added to the exceptions list, which you can manage in the Content Settings dialog.
- To manually allow pop-ups from a site, follow the steps below:
- Click the Chrome menu  on the browser toolbar.
- Select **Settings**.
- Click **Show advanced settings**.
- In the "Privacy" section, click the **Content settings** button.
- In the "Pop-ups" section, click **Manage exceptions**.

Mozilla Firefox:

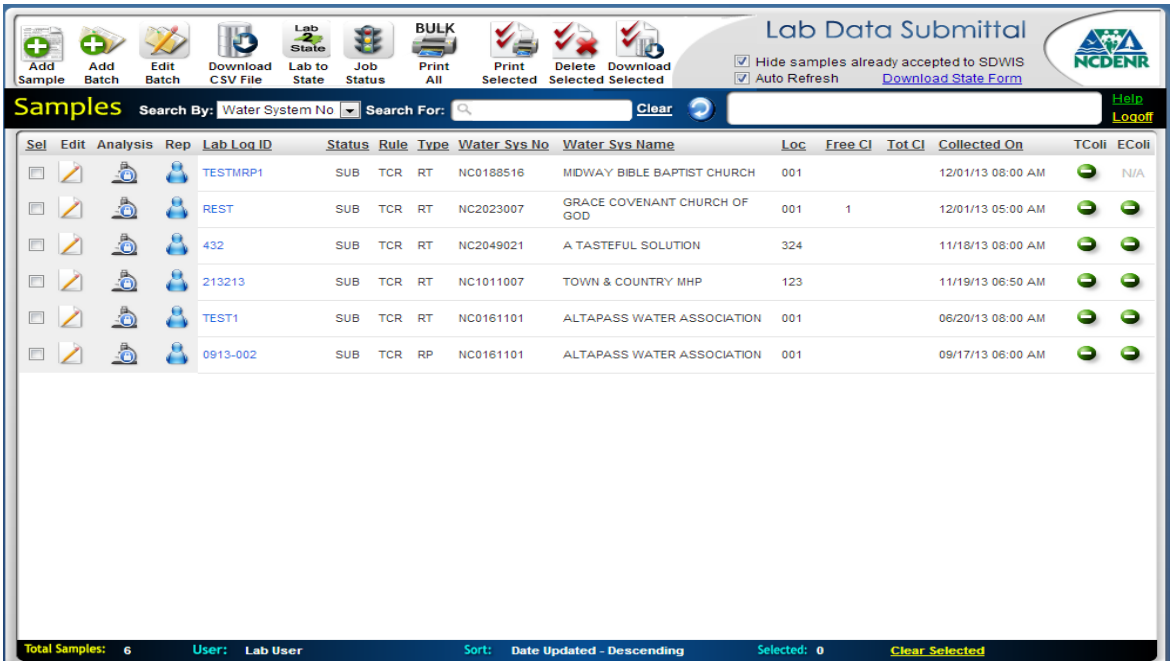
- At the top of the Firefox window, click on the **Firefox** button and then select **Options**.
- Select the **Content** Panel.
- **Block pop-up windows:** Uncheck this to disable the pop-up blocker altogether.
- Exceptions: This is a list of sites that you want to allow to display pop-ups.



The dialog box has the following choices:

- **Allow**: Click this to add a website to the exceptions list.
- **Remove Site**: Click this to remove a website from the exceptions list.
- **Remove All Sites**: Click this to remove all of the websites in the exceptions list.

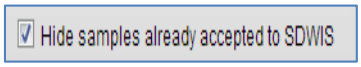
Printing:



For printing, check each box under the “Select” column heading for the rows you would like to print. Then, click the “Print Selected” button. Alternatively, you can use the “BULK Print All” button, which will print all samples in “RDY” and “SUB” statuses; no selection is needed.

Deleting Samples:

Similar to printing, check each box under the “Select” column heading for the rows to be deleted. Then, click the “Delete Selected” button. Any entry can be deleted from Main View prior to being submitted (prior to “SUB” status). When the XML sample file is uploaded to CMDP, all entries in “RDY” status get converted to “SUB” status and the Delete option is disabled at that point. The status will change to “ACC”, for “accepted”, when the sampling result gets accepted into SDWIS. The sample will then become hidden, but can be viewed by unchecking the following box:



Samples in “ACC” status cannot be deleted.

Once the sample file is uploaded to CMDP and the status has changed to “SUB”, you may call a representative from PWS Section to have this sample reset back to “RDY status if necessary.

Frequently Asked Questions:

Registration/ Login:

1. **I cannot log on to LDS, why?**
   This could happen for several reasons. The most common one is that the username e-mailed to us with the request to create an LDS account is not a valid NCID: make sure that you have obtained an NCID account before opening an LDS account. Another reason for log on failure is attempting to log on to LDS before receiving a confirmation e-mail from the PWS Section informing you that the LDS account was created: wait for the confirmation e-mail before attempting to log on.

2. **I cannot log on to CMDP, why?**
   Your SCS account password must be updated every 90 days. Go to the SCS login page to reset your password (https://encromerr.epa.gov).

CMDP File Upload/Submission:

1. **Where do I find my downloaded file?**
   With the most recent update to LDS, it is no longer necessary to download your sample file for submission. The XML sample file will be uploaded to CMDP after selecting either the “Upload Selected” or “Upload All RDY” options and entering your SCS username password. You can review, certify and submit the samples by logging into CMDP (https://cmdpapp1.epa.gov)

2. **How do I know if the XML file uploaded to CMDP?**
   Login to CMDP and navigate to the “Drinking Water Sample Jobs” tab. Double click on the link for the job you would like to review. The sample information will open in a new tab that can be reviewed.

3. **How do I know if results are uploaded successfully?**
   In LDS, the sample status will change to “ACC” and the sample will disappear from Main View when they get accepted into the State database. You must uncheck “Hide accepted Samples” to view samples with an “ACC” status.
   In CMDP, the sample status will change to “Accepted by State” when the State database pulls the certified sample files from CMDP.

You can also view results immediately on Drinking Water Watch (https://www.pwss.enr.state.nc.us/NCDWW2/).
If the status in LDS and CMDP are conflicting or if you have any questions regarding upload status, contact the PWS Section for assistance.

Getting Help:

For help and support with LDS and CMDP, contact:

- Carmalin Walter - Data Processing Branch Head; (919) 707-9085 or carmalin.walter@ncdenr.gov
- Miranda Harper - Bacti, GWR, Nitrate/Nitrite; (919) 707-9092 or miranda.harper@ncdenr.gov
- Turner Morrison - THMs/HAA5s and TOC; (919) 707-9071 or turner.morrison@ncdenr.gov
- Steve Proctor - Asbestos, Inorganics, Radionuclides, SOCs, VOCs; (919) 707-9094 or steve.proctor@ncdenr.gov
- Dustin Rhodes - Lead and Copper and WQPs; (919) 707-9082 or dustin.rhodes@ncdenr.gov

For information about transitioning to using a LIMS system to upload data, contact Eric Chai at (919) 707-9146 or eric.chai@ncdenr.gov

Appendix 4 - System Requirements

The demands on the user's computer system should be minimal due to the fact that the software is web-based. The majority of common computer setups will be able to handle the tasks required for running the application without any upgrades or expenditures.

- 1 GHz processor (32- or 64-bit) or better;
- 1 GB of RAM (32-bit); 2 GB of RAM (64-bit);
- Monitor capable of display resolution of minimum 1024x768 (higher is better);
- 10 GB of available disk space;
- One of the compatible browsers (Internet Explorer 9 or higher, Firefox 16 or higher, Chrome 18 or higher – all available online for free download);
- Mouse or pointing device;
- Access to a printer with drivers: PCL5, PCL5 emulation, or PostScript (PS);
- Broadband internet connection capable of 1.5+ mbps of sustained transfer speeds.

Appendix 5 – New Reporting Fields on Distribution System Samples

In August 2016, several new fields, including “Tap Location”, “Street Address” and “City” were added to State laboratory reporting forms for distribution system samples (Bacteriological, Asbestos, Chlorine Dioxide/Chlorite, Lead and Copper, and TTHM/HAA5). Check boxes were also included on distribution system sample lab forms for denoting whether or not the sample site is “owned or controlled by the water system”, or the sample site is “a daycare or K-12 school”. These new fields were added to collect more complete information about the location of a sample, to aid with compliance determinations, and to better serve information requests from the public, State and federal agencies, and the media.
“Tap Location” field is provided to capture the information on where the tap is located within the sample site. Some examples of values for this field are “indoor tap”, “outside spigot”, or “kitchen sink”.

“City” field is added to distribution sample forms for better geographical information on collected samples. Most of the time, this field will be pre-populated with the city information from the State database, SDWIS. However, for larger water systems that serve several cities, this information must be filled out during sample collection.

Information regarding the sample site being “owned or controlled by water system” field was added to aid data tracking and compliance determinations for the requirements to provide Special Notice under the Public Notification Requirements Rule [see 15A NCAC 18C .1523(c)]. Water systems are required to provide Special Public Notice to residents of a property not owned or controlled by the water system if an individual sample exceeds an action level, MCL (Maximum Contaminant Level), or MRDL (Maximum Residual Disinfectant Level) or is positive for coliform bacteria.

Information regarding the sample site being “a daycare or K-12 school” is included on all distribution sample forms to indicate whether the sample is taken at a daycare or a primary or secondary education institution. This information is particularly important if the lead action level is exceeded.

The following link is to a video made by the Public Water Supply Section that explains the new fields:
https://files.nc.gov/ncdeq/Water%20Resources/files/pws/compliance/DistributionSystemForm_Update2016.wmv

Appendix 6 – Updates

This section of the manual will be reserved to track the changes to the software since the original release. The following is the list of changes since the original August 2013 release.

Date	Description
10/30/2013	Location Code - Location association added (see Fig. 4); “Email it to me instead” file option added (see Fig. 13).
11/07/2013	“Default Disinfectant Used” added to “Add New Batch Samples Screen” (see Fig. 9).
11/15/2013	Select multiple samples for print and delete; information bar added (see Fig. 2).
12/17/2013	Columns for Location Code, Free and Total Chlorine added to Main View (see Fig. 2).
12/23/2013	“Download Selected” button added (see Fig. 2).
12/31/2013	Updated screen shots throughout manual, as necessary; FAQs Section added to Appendices; “Clearing Cache” Section removed from Appendices, as no longer necessary; more caution bullets added; access to User Manual placed under “Help” button (see Fig. 2).
01/15/2014	“My Reports” option added (see Figs. 24 and 25).
12/11/2014	LDS for Chemicals is released to all certified laboratories in the state.
08/02/2016	Bacti, Asbestos, Chlorine Dioxide/Chlorite, Lead and Copper, and TTHM/HAA5 lab forms updated to include new fields including “Location Code”, “Tap Location”, “Street Address”, and “City”. Check boxes also added to the top portion of the form for the collector to denote whether or not the sample site is “owned or controlled by the water system,” or whether of not it is “a daycare or K-12 school.”
01/01/2019	LDS has been modified to Lab Data Submittal 2.0 which uploads XML files into CMDP for sample certification and submission to the State. The Lab-to-State process is no longer used.