2022

Data Merge Tool Help Guide

WATER QUALITY MONITORING PROGRAM

Contents

Revision History

Date	Comments	Updated By
3/11/2019	Release of version 1	Lina Sengupta
9/11/2019	Reviewed and accepted proposed edits	Julie Zimmerman
1/31/2019	Provided edits to WC, DMT Lead, and Policy Managers	Julie Zimmerman
4/10/2020	Release of version 1.2	Julie Zimmerman
4/14/2022	Draft version 2.0 released	Julie Zimmerman
09/22/2022	Release of version 2.0	Jason Storrs

1 Purpose

This document describes the process for loading water and sediment sampling data from Laboratory Information Management System (LIMS) to the Watershed Information Network (WIN) web application using the Data Merge Tool (DMT). The DMT is a module in LIMS developed by the Florida Department of Environmental Protection (FDEP) Laboratory staff. There is an option in the LIMS Browser to run the DMT function which facilitates the integration of data generated or procured by the FDEP Laboratory with associated field measurements and creates a file that can be imported to the Watershed Information Network (WIN).

Sample data produced by analysis performed by the FDEP Laboratory are entered in LIMS by FDEP Laboratory staff. The DMT is used to merge Field data with Lab data and create a text file. This text file is the Electronic Data Deliverable (EDD) for loading into WIN. Before merging Field data with Lab data, some of the Field information may need to be edited manually in the DMT. Editing consists of adding associations according to WIN data standards and suggested policies, and verifying data entered from Sampling Field Sheets are accurate. Additional data edits are also needed after the merge. Once an EDD is created, it is uploaded by the DMT user or appointed WIN Coordinator to temporary storage in WIN Staging. WIN performs data integrity checks. Error messages from WIN are resolved through the collaboration of DMT users, WIN Coordinators, DMT Leads, and Policy Managers. After errors are resolved, error-free data are uploaded to permanent storage in WIN Migrated. Data in WIN Migrated is automatically refreshed into WIN Warehouse. See Figure 1 below.

This document is primarily for Water Quality Monitoring Program (WQMP) staff. Throughout this document, guidance from the WQMP Administrator will be followed. This document may evolve in the future as guidance for all DEAR programs if one set of instructions can be agreed upon.

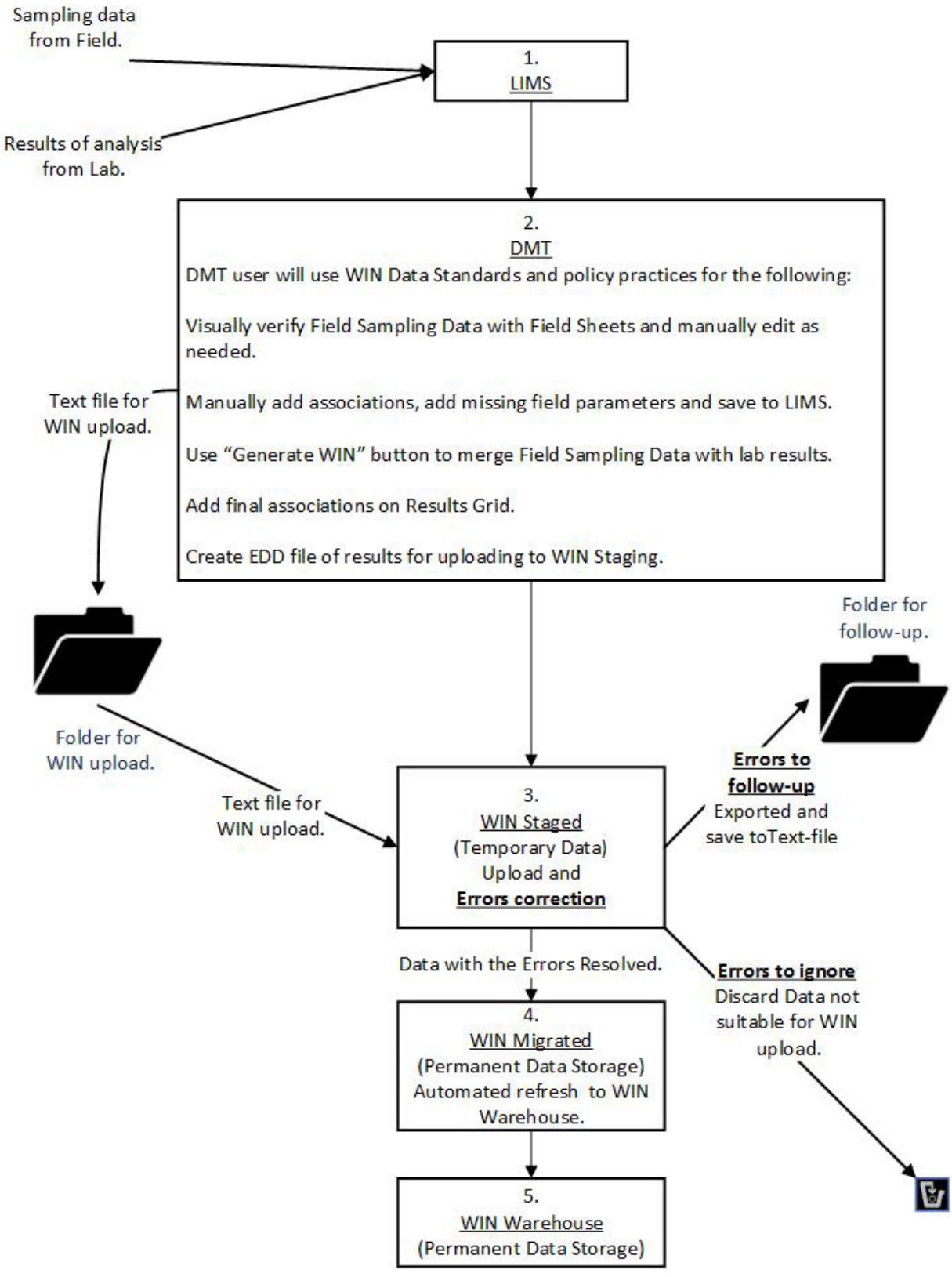


Figure 1 - Function of Data Merge Tool (DMT) in Data Upload

2 Scope

Consolidate information to create an EDD file from LIMS and upload it successfully into WIN. There are examples of corrections to common WIN Staging errors according to policies established by the WQMP. Other DEAR programs may choose to adopt these same policies.

3 References

WIN User Manual

http://publicfiles.dep.state.fl.us/DEAR/WIN/WIN_Manuals/WIN_User_Manual_2.01.pdf

WIN Minimum Data Quality Standards (MDQS)

http://publicfiles.dep.state.fl.us/DEAR/WIN/MDQS/

Lab Quality Manual

http://publicfiles.dep.state.fl.us/dear/labs/lab_qualitymanual_18.pdf

4 Definitions

DEAR - Division of Environmental Assessment and Restoration
DMT- Data Merge Tool
EDD - Electronic Data Deliverable
Field Sheet- Samplers document observations and measurements made at Monitoring Locations, usually while collecting samples.
Laboratory Submittal Form- This serves as the Chain of Custody form, where samplers document required information about samples to the laboratory which will analyze those samples.
LIMS - Laboratory Information Management System
ROC – Regional Operation Centers
QC - Quality Control
WC – WIN Coordinator
WIN - Watershed Information Network
WQMP - Water Quality Monitoring Program

5 Responsibilities

The following roles are responsible for using the DMT and loading EDDs successfully into WIN:

5.1 DMT User

- Verifies and corrects errors displayed in DMT introduced while verifying data from Field Data Sheet in LIMS.
- Manually adds missing field parameters from Field Sample Sheets into DMT table.
- Manually applies associations between Field QC and sampling data.
- Creates results merging Lab with Field data using the DMT's automated feature.
- Loads the EDD to WIN and handles unresolved errors as per specified guidance.
- Consults with WIN Coordinator on errors that need assistance.
- Migrates staged data to WIN Migrated using the WIN application after all the errors in the EDD file uploaded to WIN Staging are resolved.

5.2 WIN Coordinator (WC) – (Jason Storrs)

- Assists DMT Users to resolve the WIN errors.
- Communicates with the team for error resolution.
- Ensures that guidelines in this document are approved.

5.3 DMT Lead - (Devan Cobb)

- Approves corrections to lab data stored in LIMS.
- Modifies functionality of DMT as needed, including translators.
- Assists WC in resolving issues as needed.

5.4 Policy Managers (Alicia Hogue)

- Decides on policy-related issues.

6 Water Quality Monitoring Program

This section contains information about the WQMP, including organization affiliation, general rules and constraints, and field collection guidelines.

6.1 Organization Affiliation

The following figure provides an overview of the affiliations that have loaded data thus far to WIN using DMT.

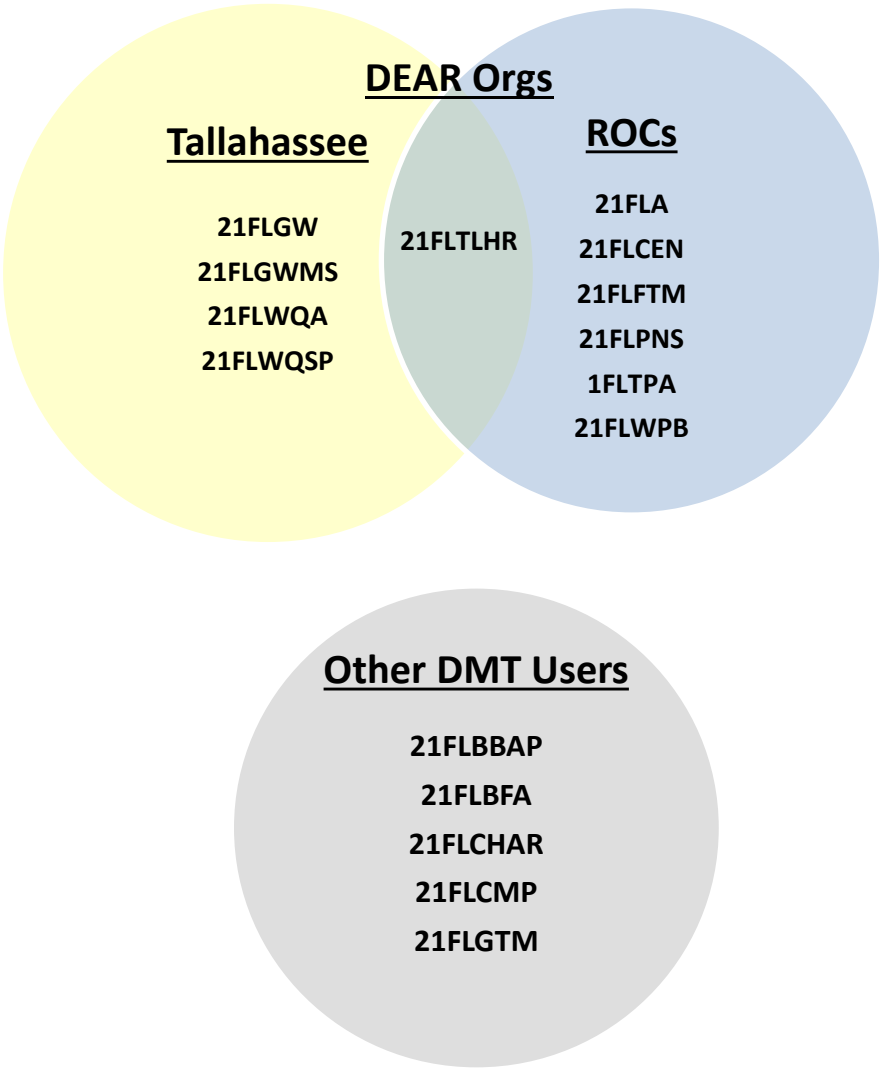


Figure 2 - DMT Users

6.2 General Rules/Constraints

This section has important points which will be re-iterated in appropriate sections. These give users the background to avoid pitfalls.

1) Users are encouraged to archive/save their EDDs from the DMT to a designated folder.
2) Issues due to data entered from Sampling Field Sheets can be corrected in the DMT (or WIN).
3) If DMT users miss making the expected edits in DMT, it is possible to make certain types of data edits in WIN. Correction/Edits can be made to Staged Errors and also to Staged Clean data.
4) Some updates may not be made in DMT and/or WIN by DMT Users. These require the DMT Lead to edit in LIMS. LIMS data and WIN data need to match. Changes to Lab data are the responsibility of the DMT Lead. Lab data, especially Lab Qualifiers, should NOT be modified, added, or removed without the explicit approval of the DMT Lead. If LIMS is updated to fix issues, EDD may need to be regenerated.
5) When updates are made in LIMS by DMT Lead, it will require the EDD to be regenerated in DMT.
6) DMT users need to be familiar with issues that have no solution, such as unsupported analytes and duplicated rows, which are typically left to purge after the purge duration (e.g., 45 days). Alternate options include: (1) export remaining errors out from WIN Staging or (2) delete remaining errors out from WIN Staging. Either option is suitable; however, these errors can be archived if desired by using the export feature.
7) Only files without errors are loaded into WIN Migrate except for errors that can be ignored, as stated in Section “Errors to ignore”.
8) Avoid loading partial events by making sure to select all rows in the DMT and uploading the entire EDD in a single migration.
9) Avoid editing the EDD outside DMT as this may introduce errors with the data format.
10) Once a record is flagged with an advanced error in WIN, the validation process stops for that record and moves to the next row until each row in the dataset is validated. When an advanced error is corrected and the check errors process is restarted by the user, the validation process will determine if the error is resolved and will report on the next advanced rule failure until the row passes all validation checks.
11) If necessary, WIN Coordinators can extend the Purge Duration.

7 Using the DMT-WIN: Flowchart Steps

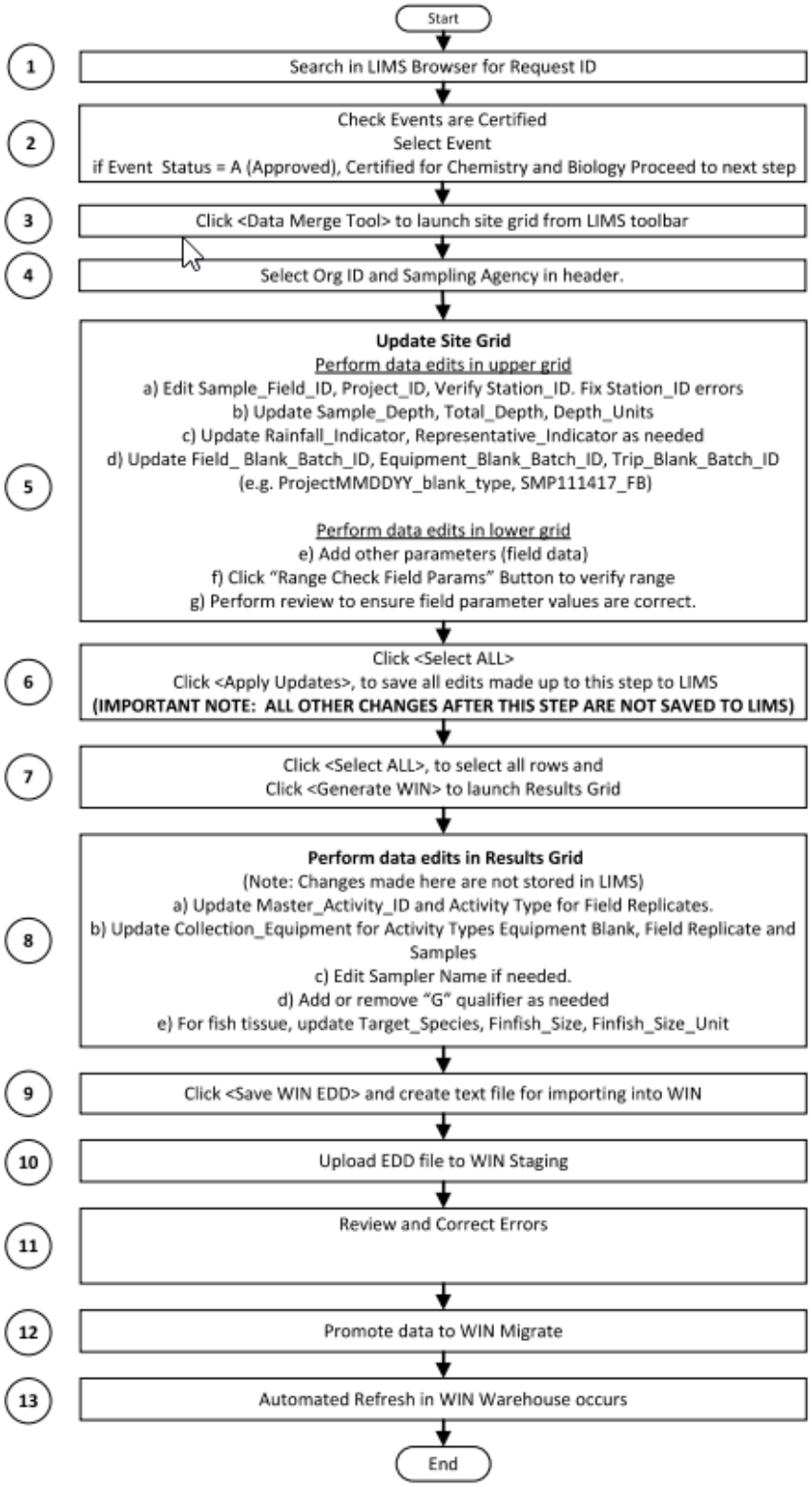
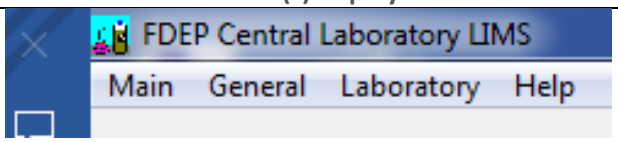
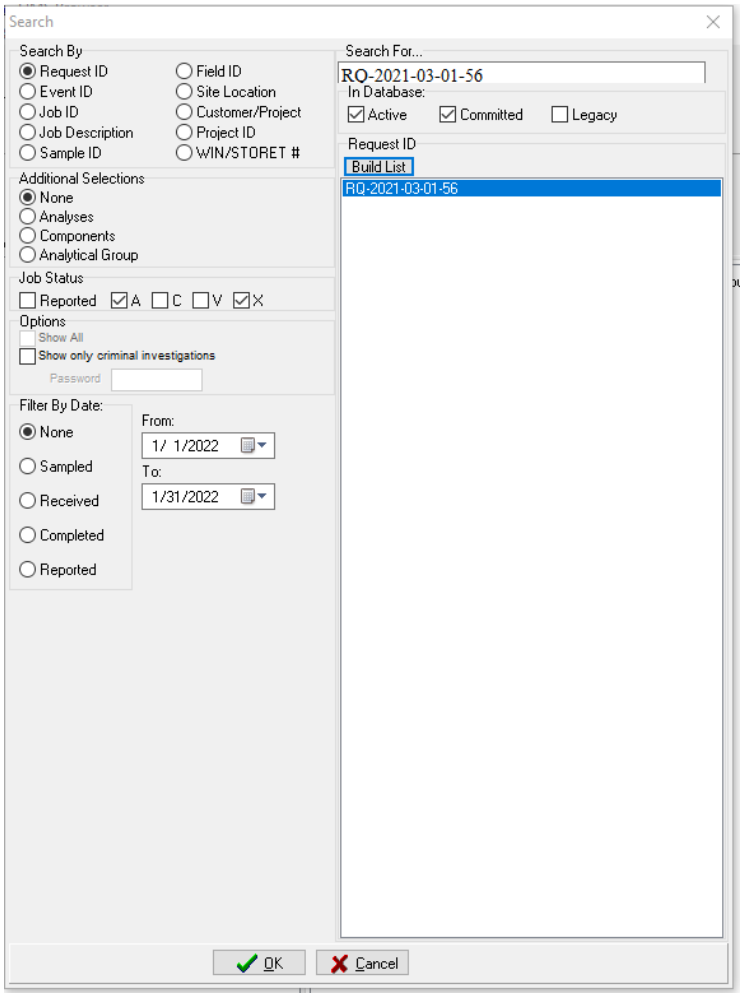


Figure 3 – High-Level Overview - DMT-WIN

This section describes the Flowchart Steps: High-Level Overview – DMT-WIN.

7.1 Step 1. Search in LIMS Browser for Request ID

Context/Procedure	Screens(s)Displayed
Launch the LIMS application. The screen to the right will be displayed	 ***Figure 4 - LIMS***
Select LIMS Browser from the menu under "General". LIMS Browser Screen to the right will be displayed. On the left side, there is "Search By" and to the right side is the "Search For..." text box. A common approach to accessing a sampling event is by "Request ID". The example shown is for RQ-2021-03-01-56. Click "Search by" Request ID, enter Request ID in the "Search For..." text box, and click "Build List". Once the requested ID is selected, click "OK". Multiple sampling events may be listed for an individual RQ. (Requests are identified on Field Sheets and Laboratory Submittal Forms)	 ***Figure 5 - LIMS Browser***

7.2 Step 2. Check Events are Certified

The DMT will be displayed in LIMS Browser as shown in the figure below. If this icon is not visible, contact the DMT Lead and request access to the LIMS function.

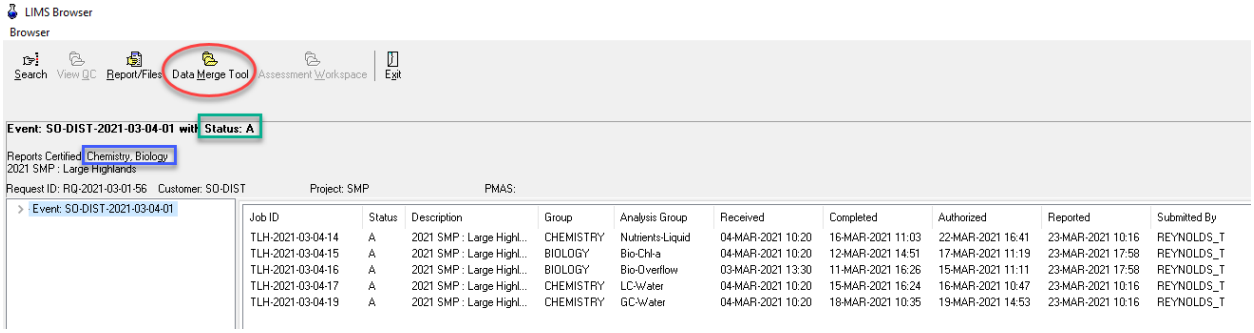


Figure 6- DMT access from LIMS Browser

Before the WIN file can be generated, all the field parameters and metadata must be entered, verified, and saved. Also, the FDEP Laboratory must have certified and reported the analytical work. If samples from both the Chemistry and Biology programs were included in the events, both the Chemistry and Biology Jobs in the event must be certified (i.e. Status set to “A”). This is easily determined by checking the header information on the form that displays following the initial search. The “Reports Certified:” area will indicate Chemistry and/or Biology, or None, as noted by the blue box in the above picture (Figure 6). DMT Users may contact the FDEP Laboratory if there appears to be a delay in certifying a job. The second item to check is the event status, indicated by the green box in the above figure (Figure 6).

Click the “Data Merge Tool” icon to launch Site Grid.

7.3 Step 3. DMT - Launch Site Grid

The Site Grid has two parts, Upper Grid and Lower Grid as shown below:

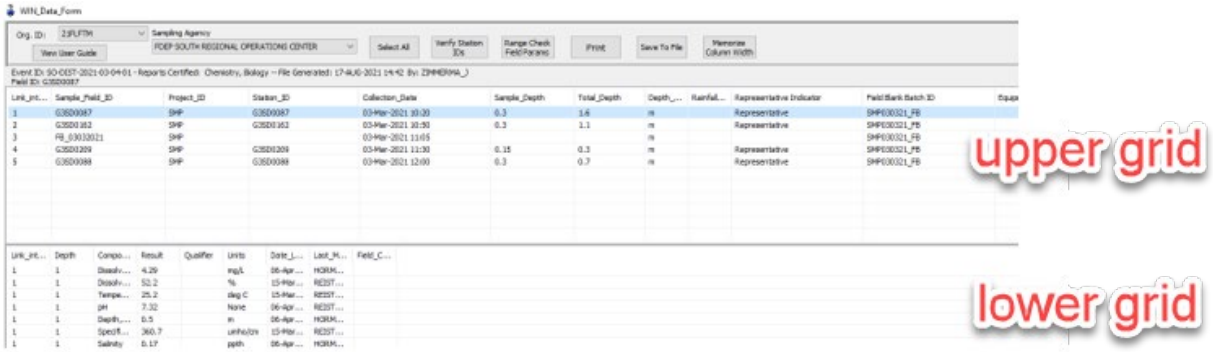


Figure 7 - Site Grid (Upper and Lower)

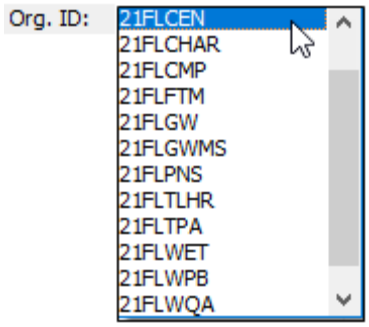
The DMT interface will display information that was entered in LIMS from the Laboratory Submittal Form (also referred to as the Chain of Custody Form) when the event was logged in. Each row in the Upper Grid corresponds to a LIMS Field ID. The LIMS project is also listed in the grid, along with the collection date/time, Station ID, and sample depth. Click on any row in the Upper Grid to display the field measurements that were included on the Laboratory Submittal Form in the Lower Grid.

7.4 Step 4. Org ID and Sampling Agency

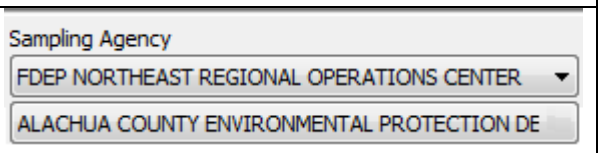
The Org ID and Sampling Agency are displayed in the header of the DMT interface above the Upper Grid. In case when these are not set automatically, they can be selected from a pull-down List.

(If the desired Sampling Agency Name is not available in the drop-down, submit a request to the DMT Lead and WIN Coordinator to add them to the DMT and WIN, as needed.)

7.4.1 Org ID

Context/Procedure	Screens(s)Displayed
The WIN-EDD generator uses the WIN Org ID to filter certain choice lists. Select the appropriate value from the pull-down List in the upper left corner of the form. The Org IDs are associated with the LIMS User ID, so if the WIN Org ID needed is not in the list, contact the DMT Lead.	 ***Figure 8 - Org ID***

7.4.2 Sampling Agency

Context/Procedure	Screens(s)Displayed
Select the appropriate sampling agency name from the pull-down List. If the sampling agency needed is not on the list, contact the DMT Lead. It is important to accurately identify the agency that collected the sample.	 ***Figure 9 - Sampling Agency***

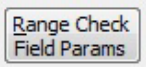
7.4.3 "Verify Station IDs" Button

Context/Procedure	Screens(s)Displayed
Click the "Verify Station IDs" button in the header section to perform the WIN Station ID check. This will identify any stations that have not been created for the selected Org ID in WIN. If any are identified, the station must be uploaded to WIN before upload of activities and results. **Note:** When a new station is added to WIN, it is saved in WIN but not available immediately in LIMS. The station will be seen in LIMS after the WIN Warehouse is refreshed. This typically takes 1-2 business days.	 ***Figure 10 - Verify Station IDs***

7.4.4 "Range Check Field Params" Button

A button "Range Check Field Params" is available to verify if parameter values are within range. This check should also be made after field data are entered. If an error is detected and help is needed to correct the issue, notify the WIN Coordinator.

Note: The WIN Coordinator will communicate with FDEP Laboratory when there is a change to the WIN parameter limits so that the DMT limits will always align with WIN limits.

Context/Procedure	Screens(s)Displayed
"Range Check Field Params" checks to see if the following parameters are within the minimum and maximum values that are listed in WIN. **Note:** The "Range Check Field Params" Button will check all Field IDs in the Upper Grid. *See Table 1- Range for Field Measurements*	 ***Figure 11 - "Range Check Field Params"***

	Analyte Name	Media	Result Unit	Low Threshold	High Threshold	Threshold Checked in
1	pH	Water	SU	0	14	DMT & WIN
2	Temperature, Water	Water	deg C	-2	50	DMT & WIN
3	Dissolved Oxygen	Water	mg/L	0	22	DMT & WIN
4	Dissolved oxygen saturation	Water	%	0	310	DMT & WIN
5	Salinity	Water	PSU	0	70	DMT & WIN
6	Specific Conductance	Water	umho/cm	0	110000	DMT & WIN
9	Depth, Secchi Disk Depth	Water	m	0	50	DMT & WIN
10	Gage height	Water	ft	-50	350	WIN
11	Depth to Water (from bottom of meter box)	Water	ft	-100	500	WIN
12	Depth to Water (from land surface elevation)	Water	ft	-100	500	WIN
13	Depth to Water (from shutoff valve)	Water	ft	-100	500	WIN
14	Depth to Water (from top of casing)	Water	ft	-100	500	WIN
15	Depth to Water (from measuring point)	Water	ft	-100	500	WIN
16	Water Level Elevation (Relative to NGVD29)	Water	ft	-100	500	WIN
17	Water Level Elevation (Relative to NGVD88)	Water	ft	-100	500	WIN
18	Water Level Elevation (Relative to MSL)	Water	ft	-100	500	WIN
19	Water Level Elevation (Relative to relative to unknown datum)	Water	ft	-100	500	WIN
20	Flow (Daily Mean)	Water	cfs	-250000	250000	DMT & WIN
21	Flow (Instantaneous)	Water	cfs	-250000	250000	DMT & WIN
22	Temperature, air	Air	deg C	-18	50	WIN
23	Velocity	Water	m/sec	-3	3	DMT & WIN
24	Stream width measure	Water	m	0	300	DMT & WIN
25	Purge Volume	Water	gal	0	55000000	DMT & WIN

Table 1 - Range for Field Measurements

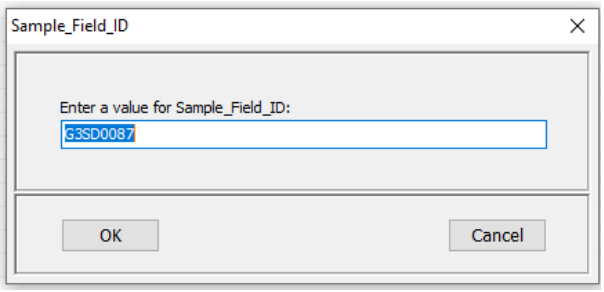
7.5 Step 5. Update Site Grid

Column widths on Site Grid can be resized and saved by clicking “Memorize Column Width”.

7.5.1 Upper Grid

Site Grid data are verified and updated as needed. Most of the data are pre-populated with data from Field Sheets and Laboratory Submittal Forms. Several items can be added or edited in the Upper Grid. This is accomplished by clicking on the row(s) to be changed and then the relevant column header. **Edits and additions made in the DMT do not alter the values in LIMS**. The new value(s) will be saved to a different table still managed by FDEP Laboratory and utilized by the DMT in the WIN EDD. The columns in Upper Grid are explained in this section.

7.5.1.1 Sample_Field_ID (Text Box)

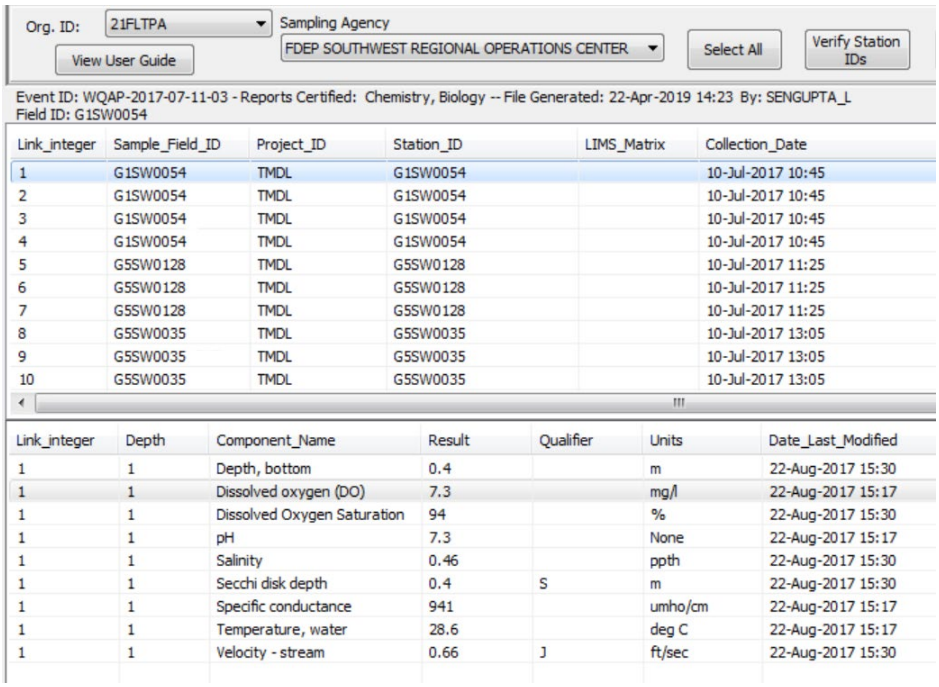
Context/Procedure	Screens(s)Displayed
Field IDs may be edited in the DMT (up to 22 characters) for storage in a table outside of the LIMS proper. That means that any changes made in the DMT will not be reflected in any other part of the LIMS. Also, the WIN EDD generator uses the Field ID to construct an Activity ID which appends the sample date. If the date sampled was part of the Field ID submitted to the FDEP Laboratory, this can be deleted to reduce redundancy.	 ***Figure 12 - Sample Field ID***

7.5.1.1.1 Appending DUP to Sample_Field_IDs for Field Replicates

To easily identify replicates in the DMT, "_DUP" should be appended to the end of the Sample_Field_ID for a replicate sample on the Lab Submittal Form. If more than one replicate is collected, append "_DUP2", "_DUP3", etc. When the Upper Grid shows the same Sample_Field_ID on multiple rows, this indicates multiple samples were taken at the same location and date without appending the "_DUP" nomenclature as needed. The Sample_Field_IDs should be edited to make them unique by appending "_DUP", "_DUP2", "_DUP3" as needed to the Sample_Field_ID. To do this, select the first Field Replicate row, beneath the Parent Sample. [NOTE: The Parent Sample is simply defined as the first sample taken for this event, at that same location. All subsequent replicate samples are defined as "Field Replicates".] Click the Sample_Field_ID header and append "_DUP" to the existing Sample_Field_ID. Repeat this process for all other Field Replicate Samples with _DUP2, _DUP3, etc.

Figure 13 shows the duplicated Sample_Field_IDs and Figure 14 shows the correction with the "DUP" nomenclature appended.

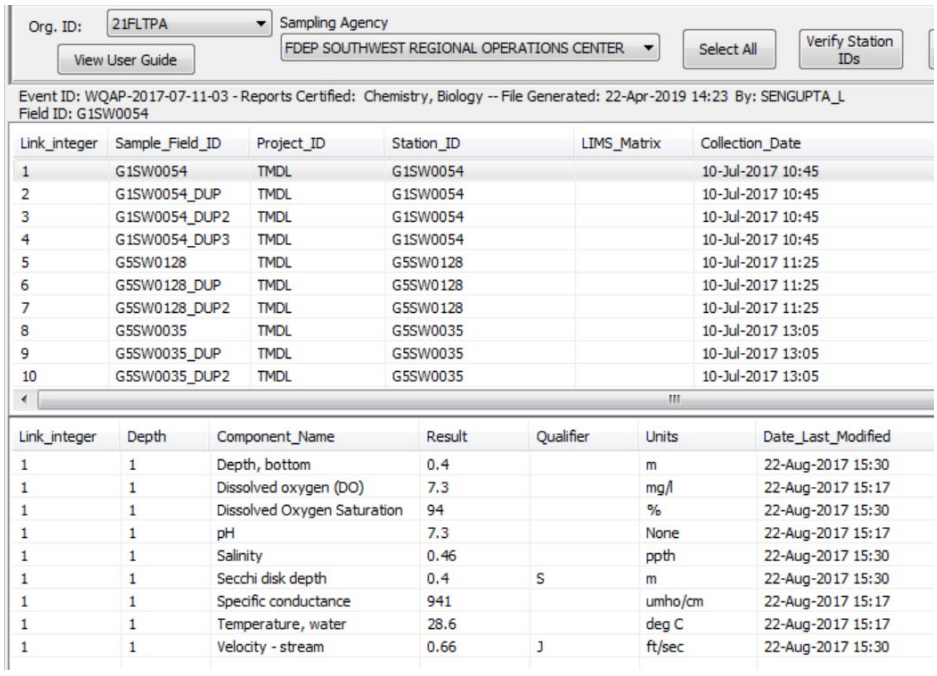
Additional steps need to be taken on the Result Grid to complete the associations between Samples and Field Replicates. Those steps are demonstrated in Section 7.8.1.



Link_integer	Sample_Field_ID	Project_ID	Station_ID	LIMS_Matrix	Collection_Date
1	G1SW0054	TMDL	G1SW0054		10-Jul-2017 10:45
2	G1SW0054	TMDL	G1SW0054		10-Jul-2017 10:45
3	G1SW0054	TMDL	G1SW0054		10-Jul-2017 10:45
4	G1SW0054	TMDL	G1SW0054		10-Jul-2017 10:45
5	G5SW0128	TMDL	G5SW0128		10-Jul-2017 11:25
6	G5SW0128	TMDL	G5SW0128		10-Jul-2017 11:25
7	G5SW0128	TMDL	G5SW0128		10-Jul-2017 11:25
8	G5SW0035	TMDL	G5SW0035		10-Jul-2017 13:05
9	G5SW0035	TMDL	G5SW0035		10-Jul-2017 13:05
10	G5SW0035	TMDL	G5SW0035		10-Jul-2017 13:05

Link_integer	Depth	Component_Name	Result	Qualifier	Units	Date_Last_Modified
1	1	Depth, bottom	0.4		m	22-Aug-2017 15:30
1	1	Dissolved oxygen (DO)	7.3		mg/l	22-Aug-2017 15:17
1	1	Dissolved Oxygen Saturation	94		%	22-Aug-2017 15:30
1	1	pH	7.3		None	22-Aug-2017 15:17
1	1	Salinity	0.46		ppth	22-Aug-2017 15:30
1	1	Secchi disk depth	0.4	S	m	22-Aug-2017 15:30
1	1	Specific conductance	941		umho/cm	22-Aug-2017 15:17
1	1	Temperature, water	28.6		deg C	22-Aug-2017 15:17
1	1	Velocity - stream	0.66	J	ft/sec	22-Aug-2017 15:30

Figure 13 - Multiple Field Replicates with the same Sample_Field_IDs



Link_integer	Sample_Field_ID	Project_ID	Station_ID	LIMS_Matrix	Collection_Date
1	G1SW0054	TMDL	G1SW0054		10-Jul-2017 10:45
2	G1SW0054_DUP	TMDL	G1SW0054		10-Jul-2017 10:45
3	G1SW0054_DUP2	TMDL	G1SW0054		10-Jul-2017 10:45
4	G1SW0054_DUP3	TMDL	G1SW0054		10-Jul-2017 10:45
5	G5SW0128	TMDL	G5SW0128		10-Jul-2017 11:25
6	G5SW0128_DUP	TMDL	G5SW0128		10-Jul-2017 11:25
7	G5SW0128_DUP2	TMDL	G5SW0128		10-Jul-2017 11:25
8	G5SW0035	TMDL	G5SW0035		10-Jul-2017 13:05
9	G5SW0035_DUP	TMDL	G5SW0035		10-Jul-2017 13:05
10	G5SW0035_DUP2	TMDL	G5SW0035		10-Jul-2017 13:05

Link_integer	Depth	Component_Name	Result	Qualifier	Units	Date_Last_Modified
1	1	Depth, bottom	0.4		m	22-Aug-2017 15:30
1	1	Dissolved oxygen (DO)	7.3		mg/l	22-Aug-2017 15:17
1	1	Dissolved Oxygen Saturation	94		%	22-Aug-2017 15:30
1	1	pH	7.3		None	22-Aug-2017 15:17
1	1	Salinity	0.46		ppth	22-Aug-2017 15:30
1	1	Secchi disk depth	0.4	S	m	22-Aug-2017 15:30
1	1	Specific conductance	941		umho/cm	22-Aug-2017 15:17
1	1	Temperature, water	28.6		deg C	22-Aug-2017 15:17
1	1	Velocity - stream	0.66	J	ft/sec	22-Aug-2017 15:30

Figure 14 - Multiple Field Replicates with different Sample_Field_IDs

7.5.1.1.2 Duplicate field measurements

To avoid the logging of duplicate observations taken in the field (e.g., Water Temperature, pH, DO, etc.), only associate field observations to the Parent Sample (Master Sample) on the FDEP Laboratory Submittal Form. Field measurements should not be associated with Field Replicates.

The form below shows a Duplicate Sample. Spaces are left BLANK for all field measurements such as Temp, pH, Sample Depth, Salinity, Dissolved Oxygen, etc.

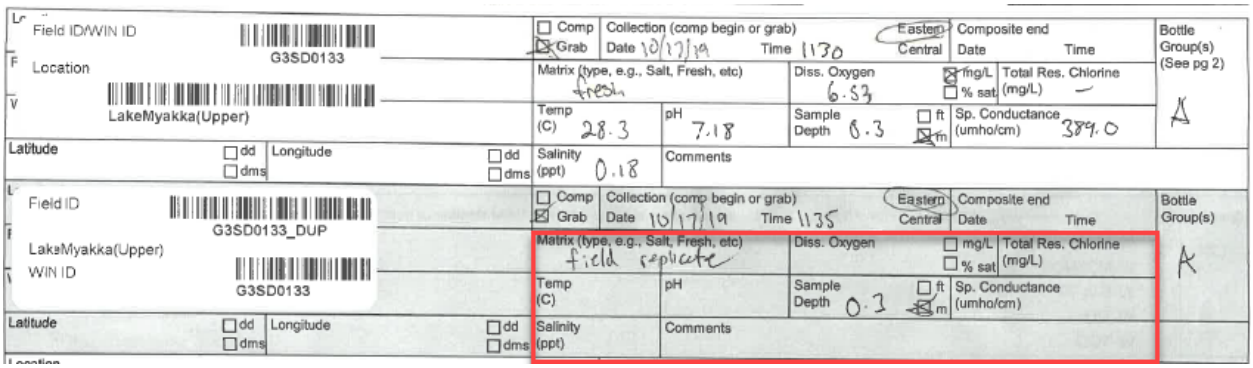
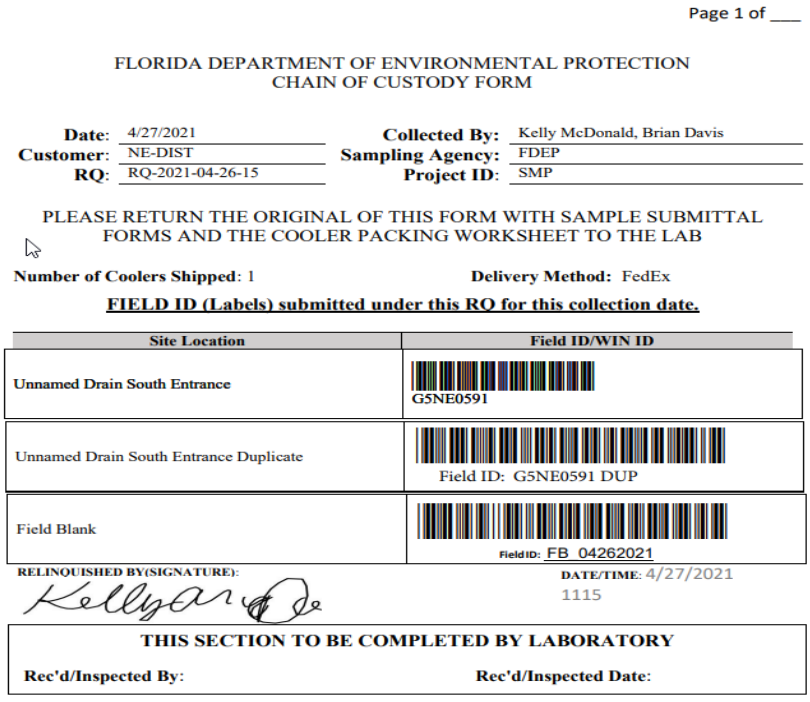


Figure 15 - Example Duplicate Observations logged in Paper Lab Submittal Form



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FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
CHAIN OF CUSTODY FORM

Date: 4/27/2021 **Collected By:** Kelly McDonald, Brian Davis
Customer: NE-DIST **Sampling Agency:** FDEP
RQ: RQ-2021-04-26-15 **Project ID:** SMP

PLEASE RETURN THE ORIGINAL OF THIS FORM WITH SAMPLE SUBMITTAL FORMS AND THE COOLER PACKING WORKSHEET TO THE LAB

Number of Coolers Shipped: 1 **Delivery Method:** FedEx

FIELD ID (Labels) submitted under this RQ for this collection date.

Site Location	Field ID/WIN ID
Unnamed Drain South Entrance	G5NE0591
Unnamed Drain South Entrance Duplicate	Field ID: G5NE0591 DUP
Field Blank	Field ID: FB_04262021

RELINQUISHED BY(SIGNATURE): Kellyan Mc
DATE/TIME: 4/27/2021 1115

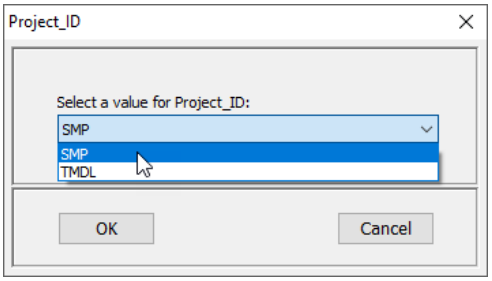
THIS SECTION TO BE COMPLETED BY LABORATORY

Rec'd/Inspected By: **Rec'd/Inspected Date:**

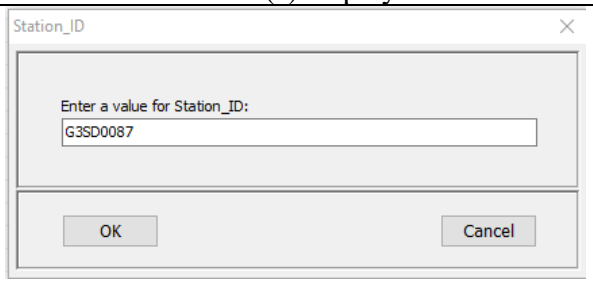
Figure 16 - Example Duplicate Observations logged in Tablet Submittal Form

If field observations were logged more than once either because this policy was not followed or because duplicates were logged by the laboratory, the duplicated field measurements need to be deleted. To remove duplicate field measurements, select the Sample_Field_ID for the Field Replicate. Highlight each row on Lower Grid and click “Remove Parm”. Repeat for all other rows in the Lower Grid. Once the values are cleared, click “Apply Updates”.

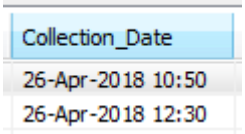
7.5.1.2 Project_ID (Pull-down List)

Context/Procedure	Screens(s)Displayed
If the LIMS project does not match a WIN standard value, it must be changed before the file is generated. Click the “*Select All*” button to highlight each of the Field ID rows, and then click the Project_ID column header. A form will be displayed with a pull-down List of Project IDs associated with the Org ID. If no Project IDs appear in the menu, make sure an Org ID has been selected. If the project needed for WIN upload is not present, contact the DMT Lead to request that it be added to LIMS.	 ***Figure 17 - Project ID***

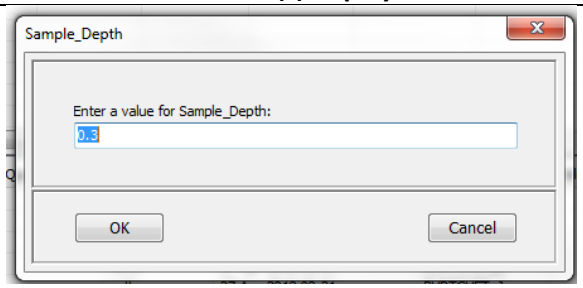
7.5.1.3 Station_ID (Text Box)

Context/Procedure	Screens(s)Displayed
If WIN Station IDs were provided on the Laboratory Submittal Form, they are also displayed in the Upper Grid. Review the IDs to make sure they were entered correctly. To add a new value or edit an existing value, highlight the row and click on the Station ID column header and enter the correct value in the edit box. Double-clicking the cell with the incorrect value also will bring up the edit box. Utilize field sheets and WIN Station list to verify that Station ID is assigned correctly. Edit as needed.	 ***Figure 18 - Station ID***

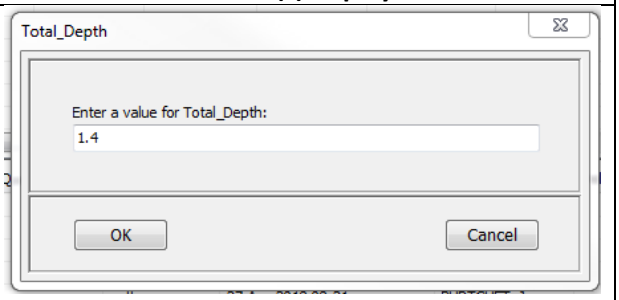
7.5.1.4 Collection_Date (Not Editable)

Context/Procedure	Screens(s)Displayed
This is the Date and Time when the sample was collected in the field. Samplers are **required** to record the start time of this activity on a Laboratory Submittal Form. Date and Time are entered into LIMS from the submittal form by Lab personnel when the event is checked in. Review information for accuracy. This is Not Editable in the DMT. **Note:** If the Date and Time were entered or submitted incorrectly, contact the DMT Lead to request a change.	 ***Figure 19 - Collection Date***

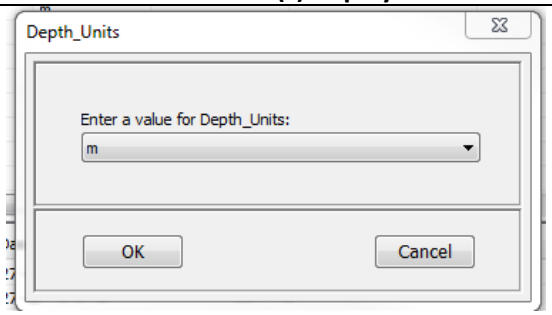
7.5.1.5 Sample_Depth (Text Box)

Context/Procedure	Screens(s)Displayed
Sample depth is entered into LIMS from the Laboratory Submittal Form when the event is checked in. The depth at which samples are collected depends on the total depth and/or parameter. Samples can be collected from different depths. This is Editable in the DMT. **Note:** If the Sample depth was entered or submitted incorrectly, edit it here. Edits are made by highlighting the Sample_Field_ID of interest in the Upper Grid and then selecting the Sample_Depth column header to edit the Sample Depth.	 ***Figure 20 - Sample Depth***

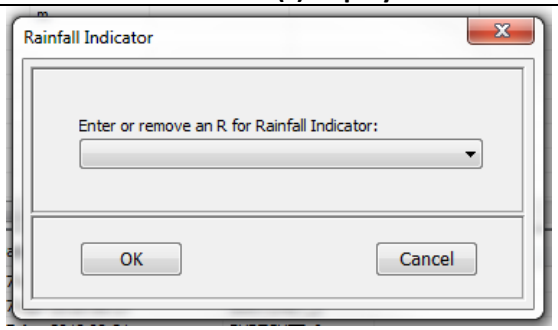
7.5.1.6 Total_Depth (Text Box)

Context/Procedure	Screens(s)Displayed
Total_Depth may be set on Field, Sample, Sample-Composite, and Field Replicate activity types. Total_Depth does not apply to Quality Control Samples or activity types where Media is Sediment. This value must be confirmed using the Field Sheets and can be added by the DMT User. To add a new value or edit an existing one, highlight the appropriate row in the Upper Grid and click on the Total_Depth column header and enter the correct value in the edit box. Notes: -It is possible that the Total depths are not the same for all rows. -Total depth is not a required measurement. There are instances when WQMP does not collect Total Depth.	 ***Figure 21 - Total Depth***

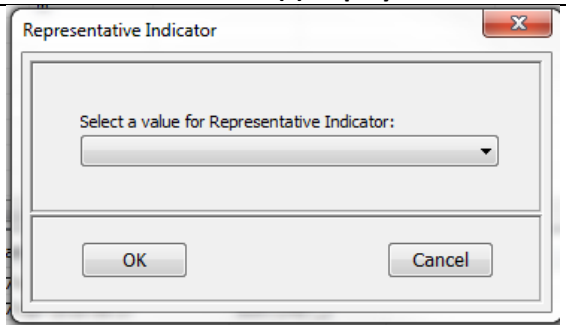
7.5.1.7 Depth_Units (Pull-down List)

Context/Procedure	Screens(s)Displayed
Depth Units must be set on every row. Depth_Units are entered into LIMS from the Laboratory Submittal Form when the event is checked in. If depth was entered or submitted incorrectly, edit by selecting all rows in the Upper Grid, clicking the Depth Units header, and selecting the units from the selection value list. Depth_Units can also be edited by selecting rows individually in the Upper Grid, clicking the Depth Units header, and selecting the units from the selection value list.	 ***Figure 22 - Depth Units***

7.5.1.8 Rainfall Indicator (Pull-down List)

Context/Procedure	Screens(s)Displayed
Rainfall Indicator: From the pull-down List, an "R" can be entered or removed to indicate a significant rain occurred before sampling. Significant rain is defined as rain in excess of ½ an inch within the past 48 hours in 62-160.700 Data Qualifier Codes. This addition will apply a qualifier to all associated lab and field results.	 ***Figure 23 - Rainfall Indicator***

7.5.1.9 Representative Indicator (Pull-down List)

Context/Procedure	Screens(s)Displayed
Representative Indicator: This indicator denotes whether the site conditions were typical or not. If abnormal conditions are encountered while sampling (e.g., a recent storm event or spill), this field can be updated to "Not Representative." Otherwise, the field can be updated as needed to "Representative" from the pull-down list or left blank. Algal Bloom samples are to be logged in as "Representative".	 ***Figure 24 - Representative Indicator***

7.5.2 Overview Blank QC

Field QC blank information is available on Laboratory Submittal Form and Sampling Field Sheet. Please make sure to include 'Field Blank', 'Equipment Blank', or 'Trip Blank' in the matrix field of the FDEP Laboratory Submittal Form for each respective Field QC sample. Field, Equipment, and Trip Blank Batch IDs are entered where appropriate according to syntax guidance provided by the WQMP.

Follow the below format when assigning a Field ID to Field QC. Notice, in the below example, two equipment blanks were taken on the same day. In this case, the Field ID should begin with EB1, EB2, etc.

Activity Type	Date blank was taken	Field ID
Field Blank	3/3/2021	FB_03032021
Equipment Blank	2/11/2021	EB1_02112021
Equipment Blank	2/11/2021	EB2_02112021
Trip Blank	3/15/2021	TB_03152021

Figure 25- Example Field/Equipment/Trip Blank

RQ-2021-03-01-56	**Collected By**: Nicole Reistad, Chris Hormuth
Customer: FDEP	**Field Report Prepared by**: Nicole Reistad, Chris Hormuth
Project ID: SMP	**Sampling Agency**: FDEP
WIN ID/Field ID:  **WIN ID/Field ID:** FB_03032021 **Location**: FB	**Comments**:
Matrix: DI Water	(Check One) ✓Grab ☐ Composite

Date and Time	DO (mg/L)	DO (%SAT)	Temp. ©	pH	Sample Depth (m)	Secchi Depth	Total Depth (m)	Sp COND (µmhos /cm)	Salinity (PPTh
3/3/2021 1105									
Central Lab please use top row for login purposes									

Parameter Suite	Parameter Methods	Preservation	pH Check	# Bottles sent to Lab	Bottle Group
Preserved Nutrients (P-500ML)	x W-NH3 / W-NO2NO3 / W-TKN / W-TOC / W-S-A-TP; Lot #; Exp:	x Ice x H2SO4*	<2	1	E
Metals (P-500ML)	W-ICPMS W-ICP W-HARD; Lot #; Exp:	Ice HNO3*	<2		
Filtered Nutrients (P125ML)	x W-PO4-F x Field Filtered 0.45 um Filter; Filter Lot # 17101170; Syringe Lot #	x Ice		1	E
Chlorophyll (BP-1L)	CHLSUITE-W	Ice			
Physical/Aggregate (Fresh) (P-1L)	x Alkalinity / W-F / W-TSS / TURBIDITY / W-Cl-IC / W-COLOR / W-SO4-IC / W- TDS	x Ice		1	C
Physical/Aggregate (Marine) (P-1L)	Alkalinity / W-BR-IC / W-F / W-TSS / TURBIDITY	Ice			
Macroinvertebrates (PJ-2L)	MI-FW-QLDC	Ice			
Periphyton (PT-50ML)	ALGAE-ID	Ice			
Microbiology (Contract Lab Bottle)	E Coli F Coli Enterococci; Contract Lab	Ice			
Molecular (QPCR-P-500ML)	PCR-HF183 PCR-BacR PCR-DG3; PCR-GULL2 PCR-GFD	Ice			
Tracers (BG-500ML)	W-E8321-DI W-E8321-MS	Ice			
Pesticides (BG-500ML) (BG-1L)	x W-E8321-DI x W-E8321-MS; x W-PSNP-TQ; W-DIELDRIN; x W-PCL-SQ-R x W-CARB-AA (5 ml of MCAA** Buffer Solution); x W-CT-CL-R	x Ice		8	E
Phytoplankton	DTY-QN-C PKD-QN-BV	Ice			

FB	 FB_03032021

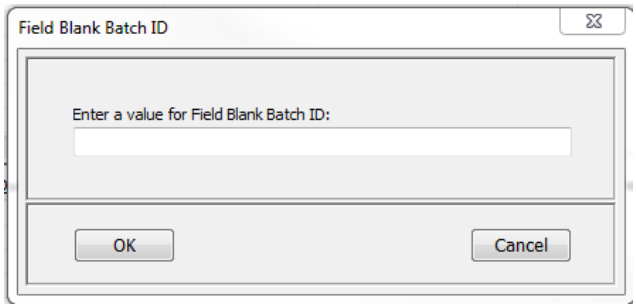
Figure 26 - Laboratory Submittal Form - Example Field Blank

When creating a Field Blank Batch ID, Equipment Blank Batch ID, or Trip Blank Batch ID in the DMT and assigning that same value to Samples or Field Replicates, the following format should be used.

Project	Activity Type	Date blank was taken	Field Blank Batch ID	Equipment Blank Batch ID	Trip Blank Batch ID
SMP	Field Blank	3/3/2021	SMP030321_FB		
SMP	Equipment Blank	2/11/2021		SMP021121_EB1	
SMP	Equipment Blank	2/11/2021		SMP021121_EB2	
SMP	Trip Blank	3/15/2021			SMP031521_TB
BMAP	Field Blank	4/22/2021	BMAP042221_FB		

Figure 27 - Example Adding Field/Equipment/Trip Blank to Upper Grid

7.5.2.1 Field Blank Batch IDs

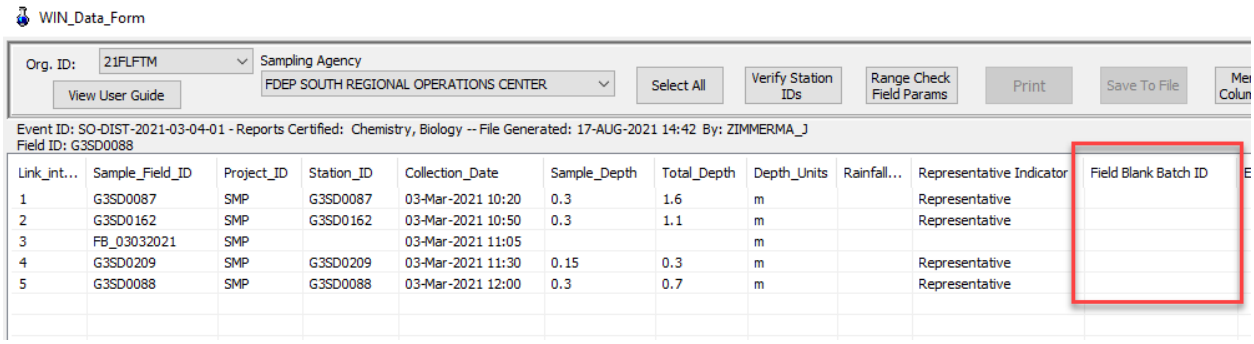
Context/Procedure	Screens(s)Displayed
According to guidance established by the Water Quality Monitoring Program, Field Blank Batch IDs shall be associated with the Field Blank as well as with **all sample results** that were collected for the same project on the same day of sampling by the same team. Field Blanks should not be associated to Field data, Trip Blanks, or Lab QC.	 ***Figure 28 - Field Blank Batch ID***

Examples are provided for the following: Associating Single Field Blank and Associating Multiple Equipment Blanks.

7.5.2.1.1 Associating Single Field Blank (Example)

A Field Blank was taken on March 3, 2021 (3/3/2021) during the same day as samples collected at G3SD0087, G3SD0162, G3SD0209, and G3SD0088. If these were done for project SMP, then the Field Blank Batch ID for all environmental samples (Sample, Field Replicates) as well as the Field Blank must be populated with “SMP030321_FB”.

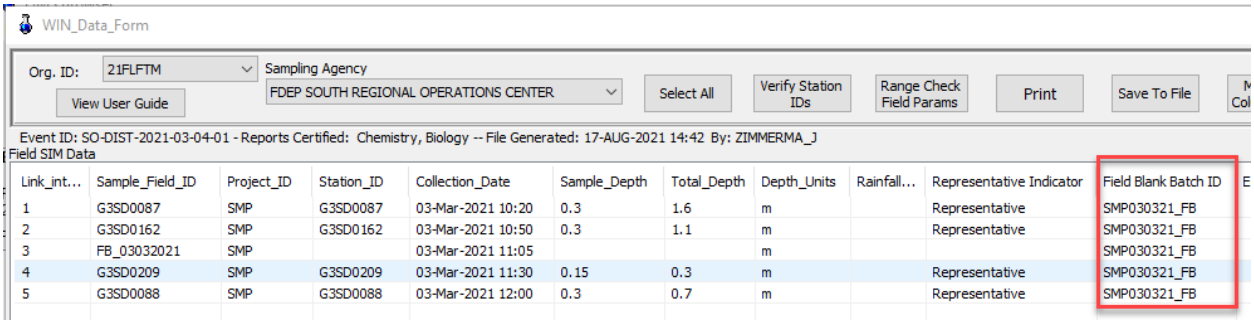
Example of a Field Blank and Environmental Samples **before** the association is made (Event SO-DIST-2021-03-04-01):



Link_int...	Sample_Field_ID	Project_ID	Station_ID	Collection_Date	Sample_Depth	Total_Depth	Depth_Units	Rainfall...	Representative Indicator	Field Blank Batch ID
1	G3SD0087	SMP	G3SD0087	03-Mar-2021 10:20	0.3	1.6	m		Representative	
2	G3SD0162	SMP	G3SD0162	03-Mar-2021 10:50	0.3	1.1	m		Representative	
3	FB_03032021	SMP		03-Mar-2021 11:05			m			
4	G3SD0209	SMP	G3SD0209	03-Mar-2021 11:30	0.15	0.3	m		Representative	
5	G3SD0088	SMP	G3SD0088	03-Mar-2021 12:00	0.3	0.7	m		Representative	

Figure 29 - Field Blank and Environmental Samples before association is made

Example of a Field Blank and Environmental Samples **after** the association is made (Event SO-DIST-2021-03-04-01):



Link_int...	Sample_Field_ID	Project_ID	Station_ID	Collection_Date	Sample_Depth	Total_Depth	Depth_Units	Rainfall...	Representative Indicator	Field Blank Batch ID
1	G3SD0087	SMP	G3SD0087	03-Mar-2021 10:20	0.3	1.6	m		Representative	SMP030321_FB
2	G3SD0162	SMP	G3SD0162	03-Mar-2021 10:50	0.3	1.1	m		Representative	SMP030321_FB
3	FB_03032021	SMP		03-Mar-2021 11:05			m			SMP030321_FB
4	G3SD0209	SMP	G3SD0209	03-Mar-2021 11:30	0.15	0.3	m		Representative	SMP030321_FB
5	G3SD0088	SMP	G3SD0088	03-Mar-2021 12:00	0.3	0.7	m		Representative	SMP030321_FB

Figure 30 - Field Blank and Environmental Samples after association is made

Associating Field Blank Batch ID

While holding the Shift button down, select the Field Blank row and all environmental samples (Samples and Field Replicates) collected on that day within the event. Click the Field Blank Batch ID header. Type “SMP030321_FB” into the text box and click “OK”.

7.5.2.2 Equipment Blank Batch ID

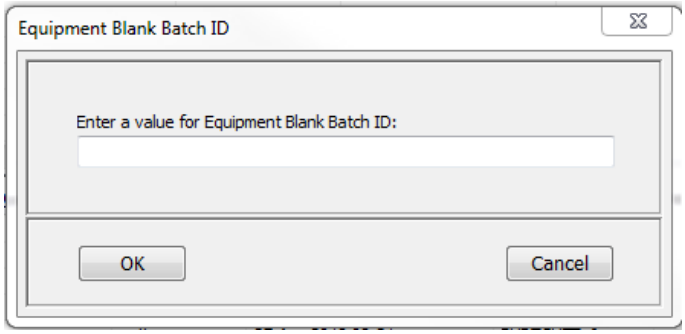
Context/Procedure	Screens(s)Displayed
According to guidance established by the Water Quality Monitoring Program, Equipment Blank Batch ID should be associated with the Equipment Blank as well as with **all sample results** that were collected using the same equipment for the same project by the same team on the day of sampling. Equipment Blanks should not be associated with Field data, Field Blanks, Trip Blanks, or Lab QC.	

Figure 31 - Equipment Blank Batch ID

7.5.2.2.1 Associating Multiple Equipment Blanks collected on the same day (Example)

Two Equipment Blanks were taken on 2/11/2021. Before associating the Equipment Blanks with environmental samples, each Equipment Blank must be assigned a unique Equipment Blank Batch ID. Then all environmental samples can be associated with both Equipment Blanks as noted in the following steps. Note that it is rare that two equipment blanks would be collected on the same day for the same project, but it could happen if there were two teams out on the same day working on the same project.

Mock Example of two Equipment Blanks and Environmental Samples **before** the association is made:

Sample_Field_ID	Project_ID	Station_ID	Collection_Date	Equipment Blank Batch ID
G2TLHR0005	SMP	G2TLHR0005	11-Feb-2021 11:45	
G2TLHR0004	SMP	G2TLHR0004	11-Feb-2021 12:35	
G2TLHR0004_DUP	SMP	G2TLHR0004	11-Feb-2021 12:40	
G2TLHR0006	SMP	G2TLHR0006	11-Feb-2021 12:45	
EB1_02112021	SMP		11-Feb-2021 12:50	
EB2_02112021	SMP		11-Feb-2021 12:55	

Mock Example of two Equipment Blanks and Environmental Samples **after** the association is made:

Sample_Field_ID	Project_ID	Station_ID	Collection_Date	Equipment Blank Batch ID
G2TLHR0005	SMP	G2TLHR0005	11-Feb-2021 11:45	SMP021121_EB1/SMP021121_EB2
G2TLHR0004	SMP	G2TLHR0004	11-Feb-2021 12:35	SMP021121_EB1/SMP021121_EB2
G2TLHR0004_DUP	SMP	G2TLHR0004	11-Feb-2021 12:45	SMP021121_EB1/SMP021121_EB2
G2TLHR0006	SMP	G2TLHR0006	11-Feb-2021 11:45	SMP021121_EB1/SMP021121_EB2
EB1_02112021	SMP		11-Feb-2021 12:50	SMP021121_EB1
EB2_02112021	SMP		11-Feb-2021 12:55	SMP021121_EB2

Steps - Associating Multiple Equipment Blank Batch ID

a. Select the first Equipment Blank and assign Equipment Blank Batch ID value "SMP021121_EB1" as per guidance.

Select the Equipment Blank row taken on 02/11/2021 at 12:50. Click the Equipment Blank Batch ID header. Type "SMP021121_EB1" into the text box and click "OK".

b. Select the second Equipment Blank and assign Equipment Blank Batch ID value "SMP021121_EB2" as per guidance.

Select the Equipment Blank row taken on 02/11/2021 at 12:55. Click the Equipment Blank Batch ID header. Type "SMP021121_EB2" into the text box and click "OK".

c. Associate Equipment Blanks to environmental samples.

Next, select the rows of all environmental samples (Samples, Field Replicates) within the same day that used that specific equipment as the two Equipment Blanks. Make sure the two equipment blank batch ids are not selected. Click the Equipment Blank Batch ID header. Type the first Equipment Blank Batch ID into the popup box, followed by a forward slash (/), then add the second Equipment Blank Batch ID. Using this example, the following should be entered: "SMP021121_EB1/SMP021121_EB2". Then click OK. WIN will use the forward slash (/) as a delimiter and will associate these environmental samples with each Equipment Blank.

Shown below are examples of typical Field Blank steps associating Equipment Blank with environmental samples:

Sample_Field_ID	Project_ID	Station_ID	Collection_Date	Step	Equipment Blank Batch ID
G2TLHR0005	SMP	G2TLHR0005	11-Feb-2021 11:45	Step c	SMP021121_EB1/SMP021121_EB2
G2TLHR0004	SMP	G2TLHR0004	11-Feb-2021 12:35	Step c	SMP021121_EB1/SMP021121_EB2
G2TLHR0004_DUP	SMP	G2TLHR0004	11-Feb-2021 12:45	Step c	SMP021121_EB1/SMP021121_EB2
G2TLHR0006	SMP	G2TLHR0006	11-Feb-2021 11:45	Step c	SMP021121_EB1/SMP021121_EB2
EB1_02112021	SMP		11-Feb-2021 12:50	Step a	SMP021121_EB1
EB2_02112021	SMP		11-Feb-2021 12:55	Step b	SMP021121_EB2

7.5.2.3 Trip Blank Batch IDs

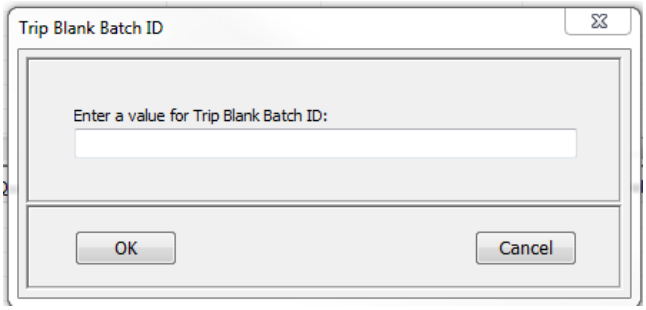
Context/Procedure	Screens(s)Displayed
Trip Blank(s) must be associated with samples (Samples, Field replicates) that were stored in the same cooler as the blank(s) during the sampling trip. Trip Blanks should not be associated with Field data, Field Blanks, Equipment Blanks, or Lab QC.	

Figure 32 - Trip Blank Batch ID

7.5.3 Lower Grid

Field measurement values are entered in LIMS from the Laboratory Submittal Form when the event is checked in and is displayed on the Lower Grid. Data providers add additional data from their field sheets in the "Lower Grid". Any data that were entered incorrectly can be edited by double-clicking the appropriate cell in the result column and typing the correct value. **This will not alter the value stored in LIMS**; the new value will be saved to a different table and propagated through to the WIN EDD. Lab data will be displayed on the Results Grid described later in the document.

Field measurements for each Field ID in the Upper Grid need only to be entered in the Lower Grid once. Field IDs in Upper Grid that do not have field measurements in Lower Grid are QC data as shown below.

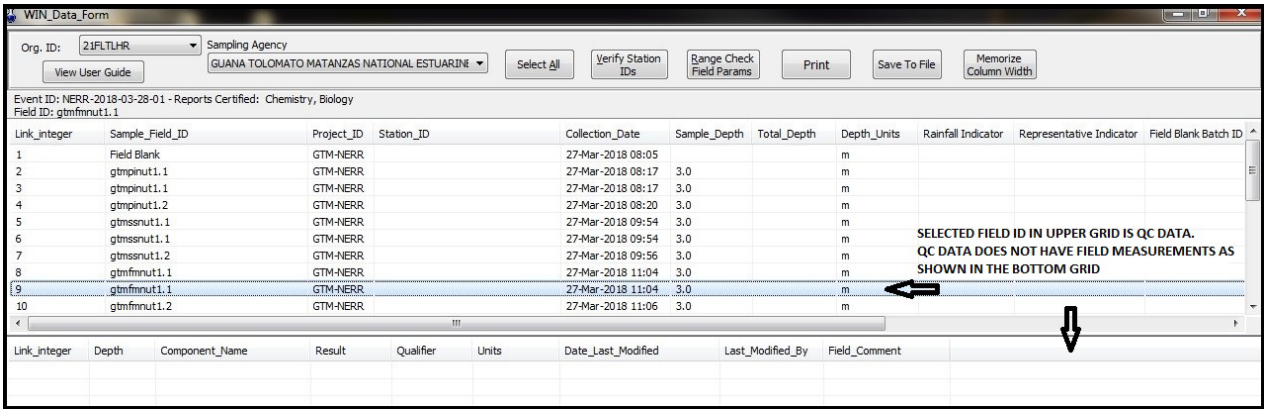


Figure 33 - Lower Grid does not have measurements for QC data

Field measurement data are displayed in the Lower Grid for the Field ID selected in the Upper Grid. The screen below shows Field data where the row in the Upper Grid has corresponding measurements from the field in Lower Grid.

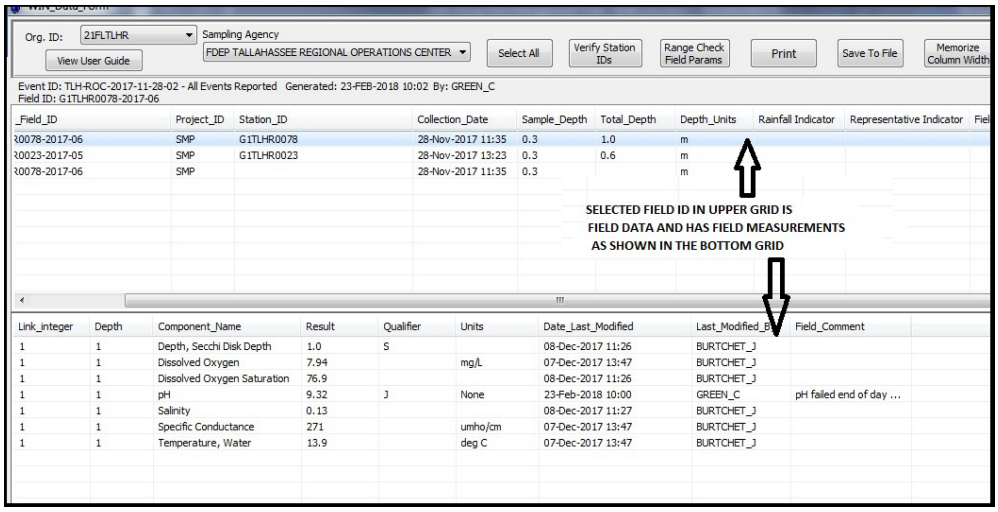


Figure 34 - Lower Grid showing Field Measurements

Additional field measurements (ex. Secchi) from field sheets that have not been recorded on the Lab Submittal Form may be added into the Lower Grid for any Field ID selected from the Top Grid.

7.5.3.1 Add Field Parameter(s)

To add a field parameter to a station, select the appropriate row or rows. Then click the "*Add Parm*" button in the lower left corner *as noted by the blue box below*. A form will display to allow the selection of one or more field parameters. Ctrl+click to select multiple parameters and then click the "*OK" button.* These additional field parameters will be associated with the sample depth included on the Laboratory Submittal Form (Depth 1). See the figure below.

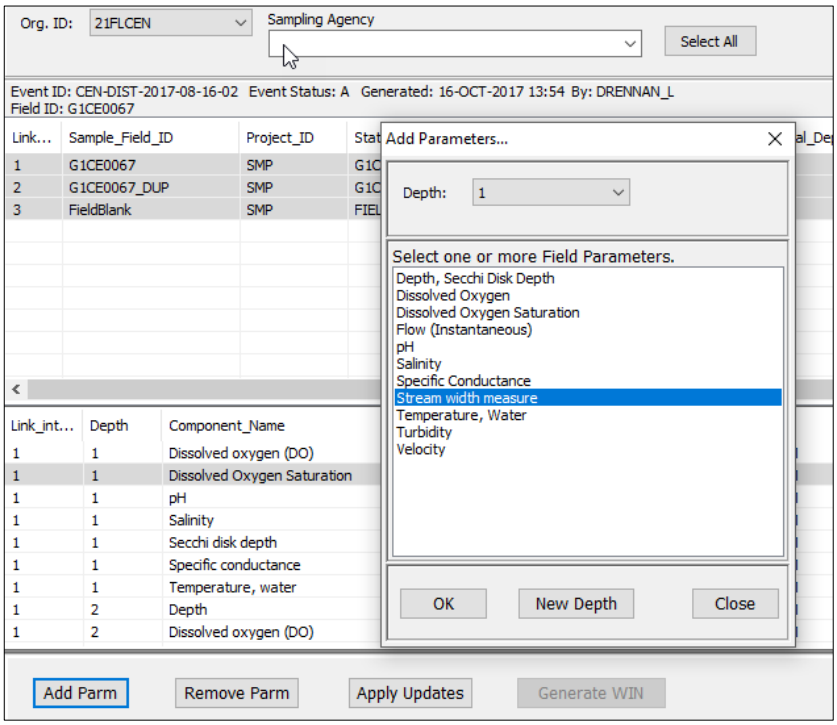


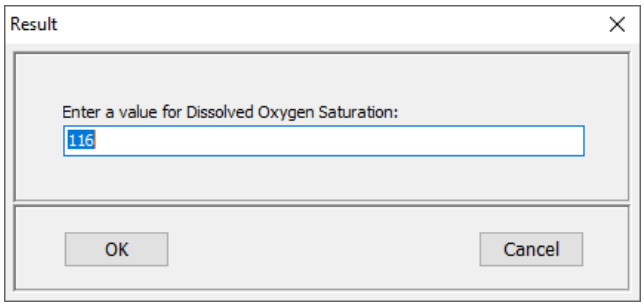
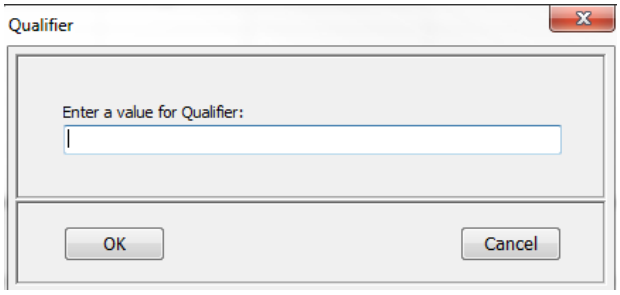
Figure 35 - Lower Grid Add Parameter

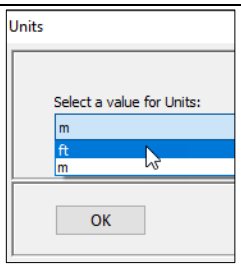
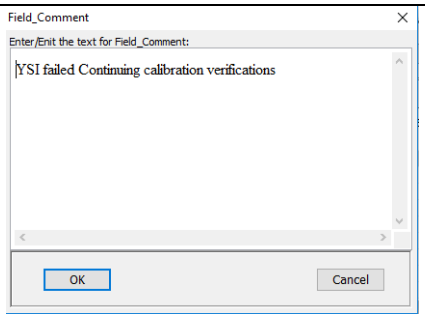
The parameter is inserted into the Lower Grid. See the figure below.

Link_int...	Depth	Component_Name	Result	Qualifier	Units
1	1	Dissolved oxygen (DO)	8.4		mg/l
1	1	Dissolved Oxygen Saturation	116		%
1	1	pH	8.6		None
1	1	Salinity	0.1		ppth
1	1	Secchi disk depth	1.6		m
1	1	Specific conductance	211		umho/cm
1	1	Stream width measure			m
1	1	Temperature, water	32.2		deg C
1	2	Depth	3.4		m
1	2	Dissolved oxygen (DO)	8.1		mg/l

Figure 36 - Lower Grid, showing parameter is inserted

7.5.3.2 Setting the Parameter

Context/Procedure	Screens(s)Displayed
Result (Value) Select the row in the Lower Grid for the parameter added. Double-click in the result cell to enter a value. Click OK.	 ***Figure 37 - Set the Parameter Value***
Qualifier A column has been included in the Lower Grid to enter qualifiers for the field measurements. To add a qualifier, highlight the appropriate row and click on the Qualifier column header to display the form for data entry. Add the qualifier and click OK. DMT does not check and constrain the Qualifiers. These checks are done in WIN. Value Qualifiers DMT Users can add are: (i) **"J" Qualifier** - is related to Field Measurement. When a "J" Qualifier	 ***Figure 38 - Set the Qualifier***

Context/Procedure	Screens(s)Displayed
is added, a Field Comment is mandatory. (ii) **"S" Qualifier** - Secchi disk visible to bottom of the waterbody. The value reported is the depth of the waterbody at the location of the Secchi disk measurement. A "total depth" is mandatory. No Field Comment is necessary for the "S" Qualifier. (iii) **"R" Qualifier** – Significant rain in the past 48 hours (iv) **"O" Qualifier** – Sampled but analysis lost or not performed (v) **"G" Qualifier** – Analyte was detected at or above the MDL All other Qualifiers can be added/edited only by DMT Lead.	
Units The DMT stores a default value for units for each field parameter, but in a few cases, there is an alternative unit. To edit the unit, select the field parameter row and click on the Units column header to display the choice list.	 ***Figure 39 - Add the Units***
Field_Comment Field comments can be added as needed. Click the row that is qualified, then click on the Field_Comment header to display the form for data entry. Add the comment and click Ok. Example: When Value Qualifier "J" is added, it is required to justify the reason(s) for designating the value as estimated.	 ***Figure 40 - Add Field_Comment***

7.5.3.3 Add Field Parameters at Existing Depth or New Depth

Values for field parameters measured at multiple depths may be added using the DMT interface. First, select all rows in the Upper Grid that represent stations for which depth profile data are relevant. Then, click the "Add Parm" button. The "Add Parameters" form will display, allowing the selection of field parameters. After choosing the parameters to add, click on the "New Depth" button as shown below.

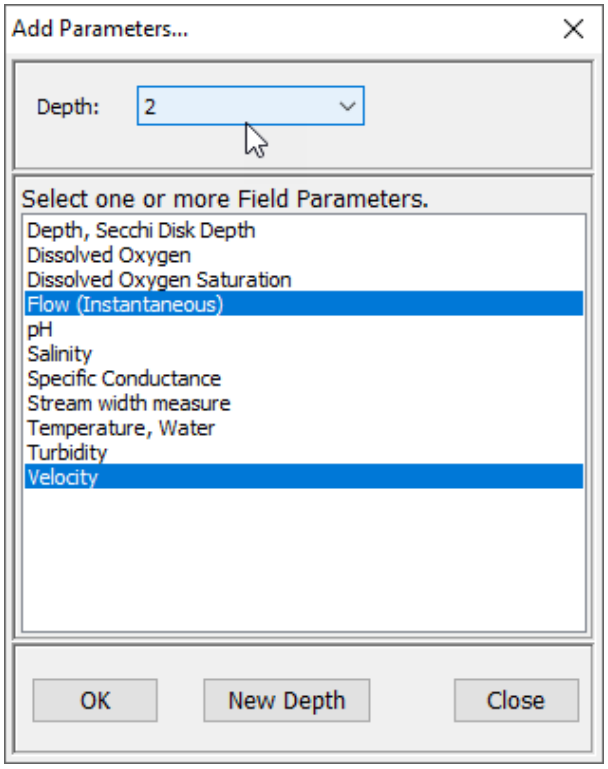


Figure 41 - Add Parameter at New Depth

The new list of field parameters is inserted at the bottom of the grid. Note that the *Depth* parameter is automatically inserted as well. Enter the relevant depth along with the rest of the field measurements, results, and appropriate units. Continue this process until all the depths for which field parameters were measured have been entered.

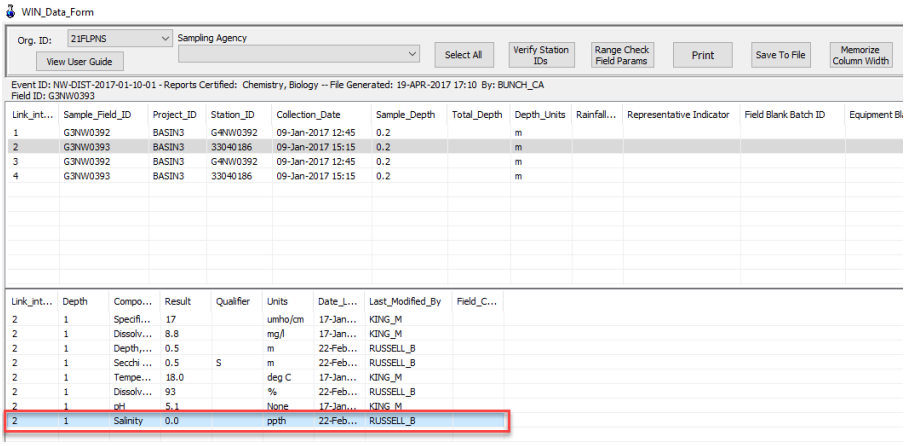
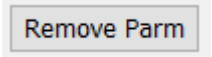
Li...	Depth	Component_Name	Result	Qualifier	Units
1	2	Depth	3.4		m
1	2	Dissolved oxygen (DO)	8.1		mg/l
1	2	Dissolved Oxygen Saturation	108		%
1	2	pH	8.3		None
1	2	Salinity	0.1		ppth
1	2	Specific conductance	211		umho/cm
1	2	Temperature, water	31.4		deg C
1	3	Depth			
1	3	Flow (Instantaneous)			
1	3	Velocity			

Figure 42 - Lower Grid, showing parameters inserted at different Depth

To add parameters to an existing depth other than the depth included on the submittal form (Depth 1), click the pull-down List at the top of the "Add Parameters" form and select the appropriate depth.

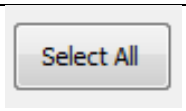
7.5.3.4 Removing Field Parameters at Existing Depth or New Depth

To remove a parameter, select the row in the lower grid that is to be removed and click the Remove Parm button.

Context/Procedure	Screens(s)Displayed
Select the row to be removed.	 ***Figure 43 - Select Field Measurement to remove***
Click the "Remove Parm" button	 ***Figure 44 – Remove Parm button***

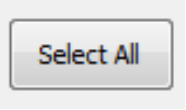
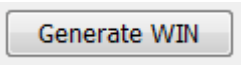
7.6 Step 6. Save to LIMS (Critical Step)

It is critical to save changes. These changes are saved to a separate set of tables and will not be reflected in LIMS outside of the DMT. The "Generate WIN" button will be enabled only after the changes are saved. Field ID, Station ID values added or changed in the Upper Grid and all Field measurements/data entered or changed in the Lower Grid in DMT will only be saved when the "Apply Updates" button is pushed.

Context/Procedure	Screens(s)Displayed
Click the "*Select All*" button to highlight all rows.	 ***Figure 45 - Selecting Field Measurements to All Rows***
To save these updated values, click on the "*Apply Updates*" button at the bottom of the form.	 ***Figure 46 - Update Field Measurements to Selected Rows***

7.7 Step 7. Generate Results Grid (Critical Step)

Generate the Results Grid, by clicking on rows in the Upper Grid that are to be included for uploading to WIN. The program will include ONLY those data associated with the highlighted field locations in the file, so **this is a critical step to select all rows**.

Context/Procedure	Screens(s)Displayed
Click the "*Select All*" button to highlight all rows. (and Ctrl-Click to deselect individual field locations.)	 ***Figure 47 - Select All before generating Results Grid***
The next step is to Click the "*Generate* WIN" button at the bottom of the form. The resulting grid contains all of the metadata necessary for entry to WIN, as long as the standard values are in place for the relevant Org ID. LIMS component names and methods have been translated to the WIN compliant names, as have expressions for units.	 ***Figure 48 - Generate Results Grid***

7.8 Step 8. Update Results Grid

There are a few items that need to be added to the Results Grid, or they can be added to WIN once the EDD has been imported to WIN. **IT IS IMPORTANT TO REMEMBER** that the edits made to this grid are not stored in the DMT. If additional changes need to be made to the Site Grid or the EDD needs to be regenerated, updates to the Results Grid will need to be done again.

Dataset attributes can be added/edited in the Results Grid as explained in the following section.

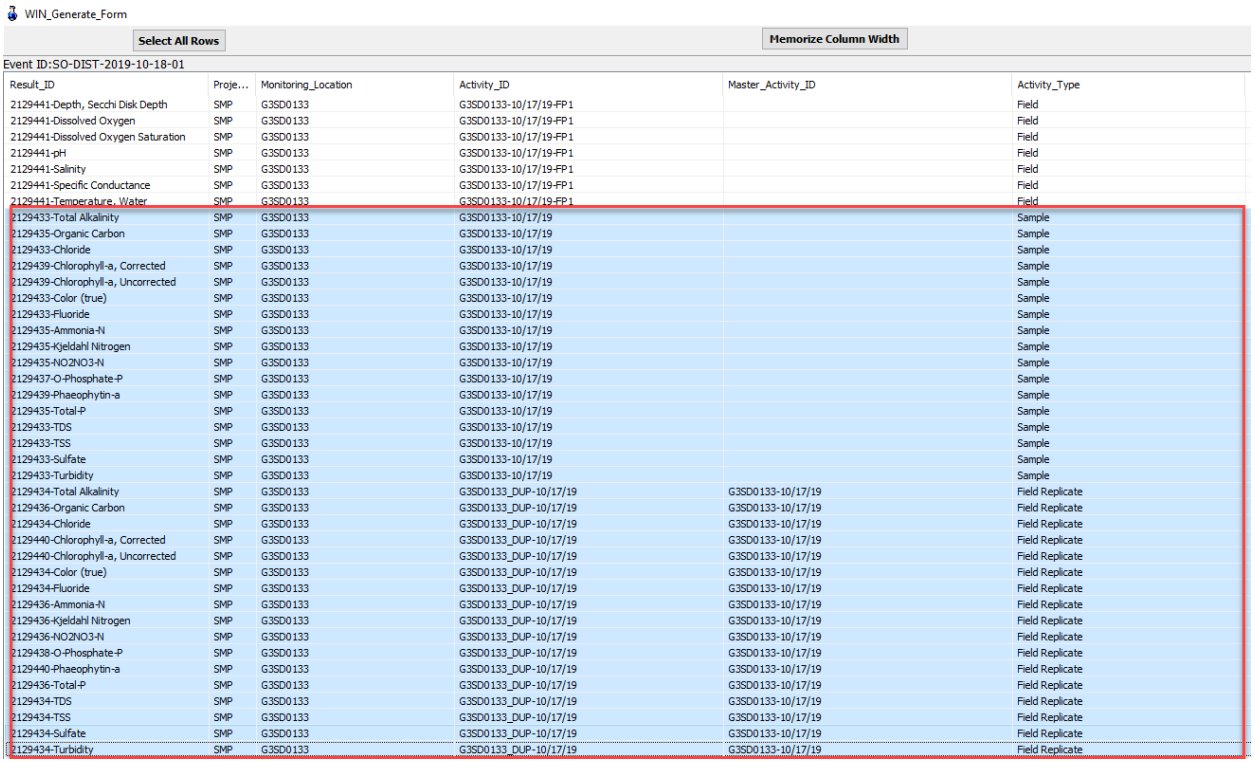
The following columns in Results Grid are editable in DMT.

- Activity_Type
- Master_Activity_ID
- Collection_Type
- Collection_Equipment
- Sampler_Name
- Value_Qualifier
- Target_Species
- Finfish_Size
- Finfish_Size_Unit

7.8.1 Associate Field Replicates (Activity_Type, Master_Activity_ID)

To associate all replicates to the parent sample (first sample taken), the Activity Type must be 'Field Replicate' for all replicate samples and the Master_Activity_ID must be updated to the Activity_ID of the parent sample.

Shown below is an example of a typical Field Replicate after association with the parent sample using event SO-DIST-2019-10-18-01:


WIN_Generate_Form

Select All Rows | Memorize Column Width

Event ID:SO-DIST-2019-10-18-01

Result_ID	Proje...	Monitoring_Location	Activity_ID	Master_Activity_ID	Activity_Type
2129441-Depth, Secchi Disk Depth	SMP	G3SD0133	G3SD0133-10/17/19-FP1		Field
2129441-Dissolved Oxygen	SMP	G3SD0133	G3SD0133-10/17/19-FP1		Field
2129441-Dissolved Oxygen Saturation	SMP	G3SD0133	G3SD0133-10/17/19-FP1		Field
2129441-pH	SMP	G3SD0133	G3SD0133-10/17/19-FP1		Field
2129441-Salinity	SMP	G3SD0133	G3SD0133-10/17/19-FP1		Field
2129441-Specific Conductance	SMP	G3SD0133	G3SD0133-10/17/19-FP1		Field
2129441-Temperature, Water	SMP	G3SD0133	G3SD0133-10/17/19-FP1		Field
2129433-Total Alkalinity	SMP	G3SD0133	G3SD0133-10/17/19		Sample
2129435-Organic Carbon	SMP	G3SD0133	G3SD0133-10/17/19		Sample
2129433-Chloride	SMP	G3SD0133	G3SD0133-10/17/19		Sample
2129439-Chlorophyll-a, Corrected	SMP	G3SD0133	G3SD0133-10/17/19		Sample
2129439-Chlorophyll-a, Uncorrected	SMP	G3SD0133	G3SD0133-10/17/19		Sample
2129433-Color (true)	SMP	G3SD0133	G3SD0133-10/17/19		Sample
2129433-Fluoride	SMP	G3SD0133	G3SD0133-10/17/19		Sample
2129435-Ammonia-N	SMP	G3SD0133	G3SD0133-10/17/19		Sample
2129435-Kjeldahl Nitrogen	SMP	G3SD0133	G3SD0133-10/17/19		Sample
2129435-NO2NO3-N	SMP	G3SD0133	G3SD0133-10/17/19		Sample
2129437-O-Phosphate-P	SMP	G3SD0133	G3SD0133-10/17/19		Sample
2129439-Phaeophytin-a	SMP	G3SD0133	G3SD0133-10/17/19		Sample
2129435-Total-P	SMP	G3SD0133	G3SD0133-10/17/19		Sample
2129433-TDS	SMP	G3SD0133	G3SD0133-10/17/19		Sample
2129433-TSS	SMP	G3SD0133	G3SD0133-10/17/19		Sample
2129433-Sulfate	SMP	G3SD0133	G3SD0133-10/17/19		Sample
2129433-Turbidity	SMP	G3SD0133	G3SD0133-10/17/19		Sample
2129434-Total Alkalinity	SMP	G3SD0133	G3SD0133_DUP-10/17/19	G3SD0133-10/17/19	Field Replicate
2129436-Organic Carbon	SMP	G3SD0133	G3SD0133_DUP-10/17/19	G3SD0133-10/17/19	Field Replicate
2129434-Chloride	SMP	G3SD0133	G3SD0133_DUP-10/17/19	G3SD0133-10/17/19	Field Replicate
2129440-Chlorophyll-a, Corrected	SMP	G3SD0133	G3SD0133_DUP-10/17/19	G3SD0133-10/17/19	Field Replicate
2129440-Chlorophyll-a, Uncorrected	SMP	G3SD0133	G3SD0133_DUP-10/17/19	G3SD0133-10/17/19	Field Replicate
2129434-Color (true)	SMP	G3SD0133	G3SD0133_DUP-10/17/19	G3SD0133-10/17/19	Field Replicate
2129434-Fluoride	SMP	G3SD0133	G3SD0133_DUP-10/17/19	G3SD0133-10/17/19	Field Replicate
2129436-Ammonia-N	SMP	G3SD0133	G3SD0133_DUP-10/17/19	G3SD0133-10/17/19	Field Replicate
2129436-Kjeldahl Nitrogen	SMP	G3SD0133	G3SD0133_DUP-10/17/19	G3SD0133-10/17/19	Field Replicate
2129436-NO2NO3-N	SMP	G3SD0133	G3SD0133_DUP-10/17/19	G3SD0133-10/17/19	Field Replicate
2129438-O-Phosphate-P	SMP	G3SD0133	G3SD0133_DUP-10/17/19	G3SD0133-10/17/19	Field Replicate
2129440-Phaeophytin-a	SMP	G3SD0133	G3SD0133_DUP-10/17/19	G3SD0133-10/17/19	Field Replicate
2129436-Total-P	SMP	G3SD0133	G3SD0133_DUP-10/17/19	G3SD0133-10/17/19	Field Replicate
2129434-TDS	SMP	G3SD0133	G3SD0133_DUP-10/17/19	G3SD0133-10/17/19	Field Replicate
2129434-TSS	SMP	G3SD0133	G3SD0133_DUP-10/17/19	G3SD0133-10/17/19	Field Replicate
2129434-Sulfate	SMP	G3SD0133	G3SD0133_DUP-10/17/19	G3SD0133-10/17/19	Field Replicate
2129434-Turbidity	SMP	G3SD0133	G3SD0133_DUP-10/17/19	G3SD0133-10/17/19	Field Replicate

Figure 49 – Example: Proper Association of Field Replicate to Sample

Steps - Associating Field Replicates to Samples

a. Assign correct Activity Type:

If the Sample_Field_ID for the Field Replicate does not contain "_DUP", edits must be completed on the Site Grid before completing these steps. See instructions in Section 7.5.1.1.1 above.

Please make sure to include 'Field Replicate' in the matrix field of the FDEP Laboratory Submittal Form for all replicate samples. If this step is done correctly, no changes will be needed to the Activity_Type column for either the parent sample or the field replicate. Move to step b.

To update the Activity_Type for a 'Field Replicate', select all rows with "_DUP" in the Sample_Field_ID on the Results Grid. Click the Activity_Type header. A pull-down List will be presented. Select 'Field Replicate' and click OK.

b. Associate the Field Replicates to the parent sample by assigning Master Activity ID:

Next, select the result row of all field replicates in this batch. Make sure the associated Parent Sample (Activity Type = Sample) is not selected. Click the Master_Activity_ID header. Select the Activity ID that is associated with the Parent Sample from the pull-down List. Click OK.

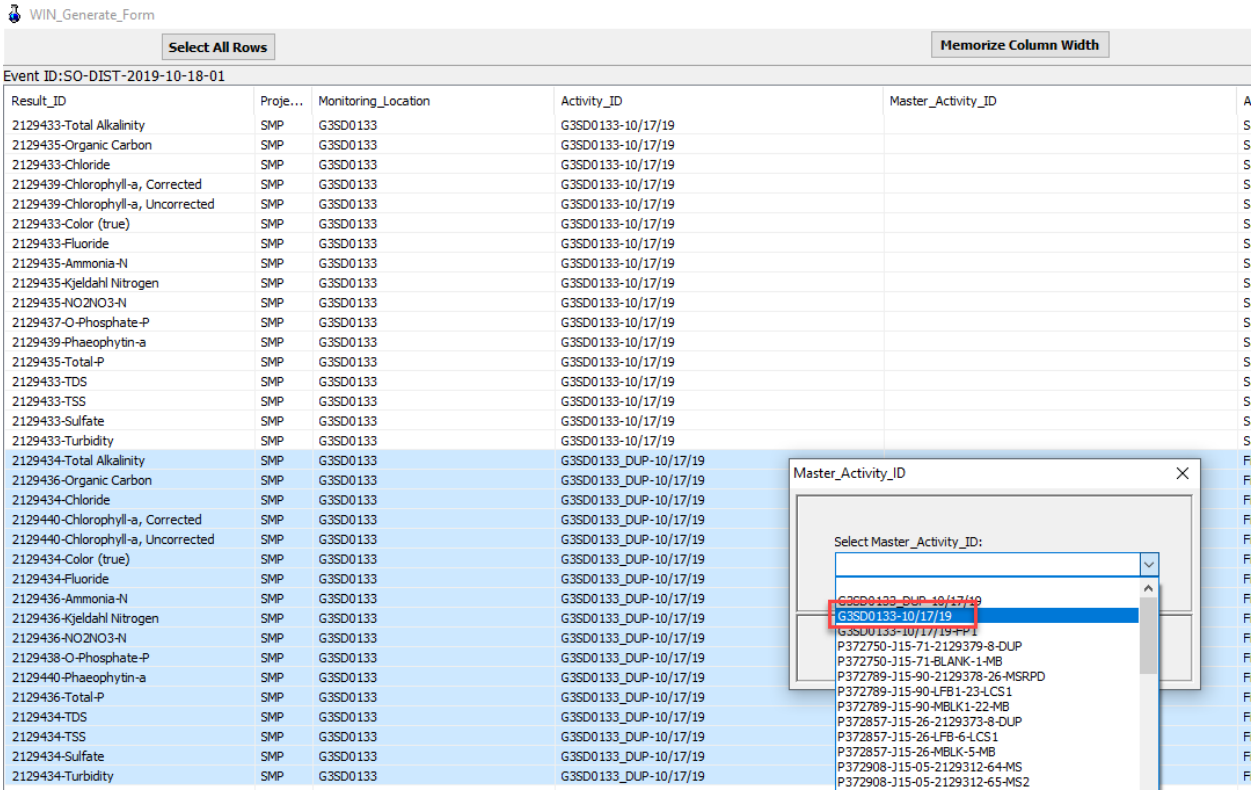


Figure 50 - Master Activity ID association

7.8.2 Collection_Type

Activity Type, Sample Collection Type, Equipment Name, and Media combination must be valid in WIN. To view allowed combinations, navigate to Manage Data > Administration > Code Tables menu and select the radio button associated with the Activity Type Codes table. Select the Adv Rules gavel icon directly above the table and then select the hyperlink for ID 232. This table can also be accessed through the MDQS – Activity and Results document on the "ActivityType_SCT_Equip_Media" tab.

Collection_Type must be assigned for the following Activity_Types:

- Field,
- Equipment Blank,
- Field Replicate,
- Sample,
- Sample Composite.

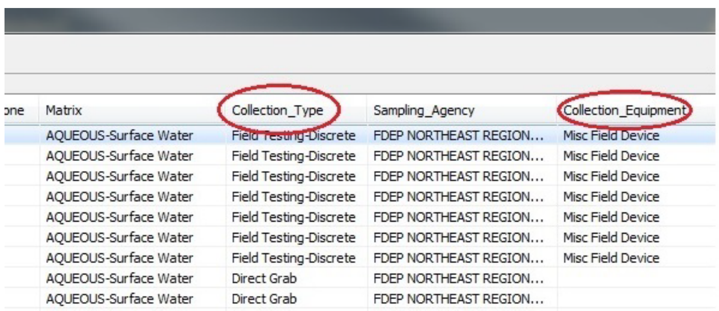


Figure 51 - Results Grid: Collection Type, Collection Equipment

If any equipment is used to collect the sample and then transferred to a water bottle, the Collection_Type should be Intermediate Grab (e.g., Van Dorn). Only the following equipment may be associated with a "Direct Grab" Sample Collection Type with Media = Water: Spigot/Tap, Water Bottle, Water Sampler (Other), Whirlpak Bag.

7.8.3 Collection_Equipment

This value must be assigned for Equipment Blanks, Field Replicates, and Samples only. **It must be left blank for Field Blank, Trip Blanks, and all Lab QC**. Highlight the rows to edit, click the Collection_Equipment header, and select the appropriate collection equipment name. For 'Field' activities, the DMT automatically populates this column with 'Misc Field Device'.

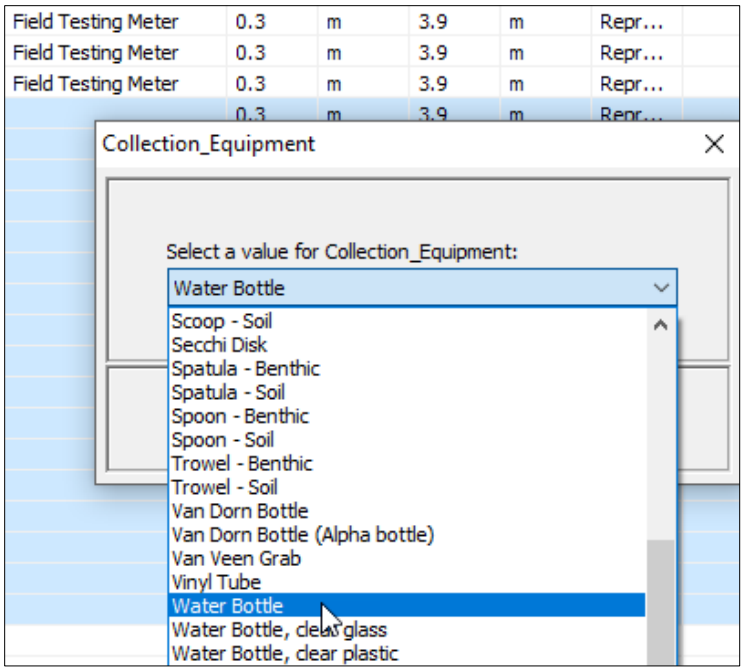
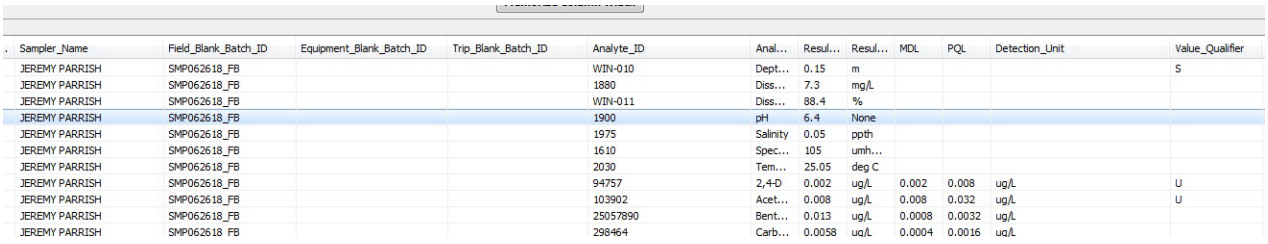


Figure 52 - Collection Equipment Name

7.8.4 Sampler_Name

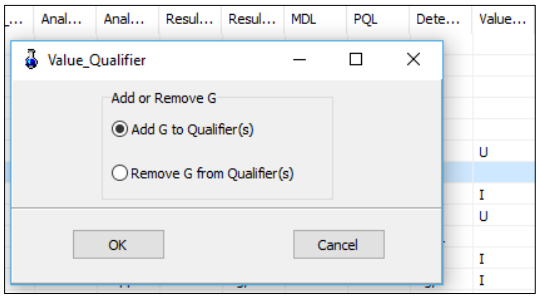
Sampler Name is entered from the Laboratory Submittal Form. It can be edited here by highlighting the rows of interest, clicking on the header, and entering the new information into the popup box.



Sampler_Name	Field_Blank_Batch_ID	Equipment_Blank_Batch_ID	Trip_Blank_Batch_ID	Analyte_ID	Anal...	Resul...	Resul...	MDL	PQL	Detection_Unit	Value_Qualifier
JEREMY PARRISH	SMP062618_FB			WIN-010	Dept...	0.15	m				S
JEREMY PARRISH	SMP062618_FB			1880	Diss...	7.3	mg/L				
JEREMY PARRISH	SMP062618_FB			WIN-011	Diss...	88.4	%				
JEREMY PARRISH	SMP062618_FB			1900	pH	6.4	None				
JEREMY PARRISH	SMP062618_FB			1975	Salinity	0.05	ppth				
JEREMY PARRISH	SMP062618_FB			1610	Spec...	105	umh...				
JEREMY PARRISH	SMP062618_FB			2030	Tem...	25.05	deg C				
JEREMY PARRISH	SMP062618_FB			94757	2,4-D	0.002	ug/L	0.002	0.008	ug/L	U
JEREMY PARRISH	SMP062618_FB			103902	Acet...	0.008	ug/L	0.008	0.032	ug/L	U
JEREMY PARRISH	SMP062618_FB			25057890	Bent...	0.013	ug/L	0.0008	0.0032	ug/L	
JEREMY PARRISH	SMP062618_FB			298464	Carb...	0.0058	ug/L	0.0004	0.0016	ug/L	

Figure 53 - Results Grid: Sampler_Name, Value_Qualifier

7.8.5 Value_Qualifier

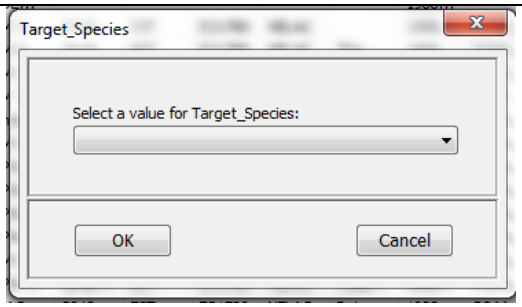
Context/Procedure	Screens(s)Displayed
The laboratory results qualifier field is editable, but only on a limited basis. Users may only add or remove a "G" to the current list of qualifiers. As with the other editable fields, highlight the row(s) that need to be edited then click the column header. Review data reported for any field, equipment, or trip blanks collected and add the "G" qualifier as needed to station and parameters via the Value Qualifier pull-down List in EDD. NOTE: A future enhancement to WIN will evaluate Field QC and associated samples and flag samples within the import file that require a "G". DMT Loaders may still apply the "G" outside of these circumstances if blank contamination is related to any given sample. See section 8.1.1.1.1 in this Manual for details on "G" value qualifier calculation and determination. To view the entire list of DEP Qualifier Codes, click here.	 ***Figure 54 - Lab Results Qualifier***

Lab_Sample_ID	Method_Batch_ID	Analytical_Batch_ID	Dilution	Percent_Moisture	Percent_Recovery	RPD	Error	Target_Species	Finfish_Size	Finfish_Size_Unit	Result_Value_Type
1978345	P342573	A82993	1								Actual
1978345	P342573	A82993	1								Actual
1978369	P342679	032818-1	1								Actual
1978472	P343157		1								Actual
1978472	P342334	A82903	1								Actual
1978471	P342769	A83041	1								Actual
1978473	P342401	A82965	1								Actual
1978471	P342655	A83012	1								Actual
1978472	P342343	A82908	1								Actual
1978345	P342573	A82993	1								Actual
1978473	P342502	A83000	1								Actual
1978474	P343098	A83141	1								Actual
1978476											Actual
1978476											Actual
1978476											Actual
1978476											Actual
1978395	P342877	A83069	2								Actual
1978325	P342571	A82992	1								Actual

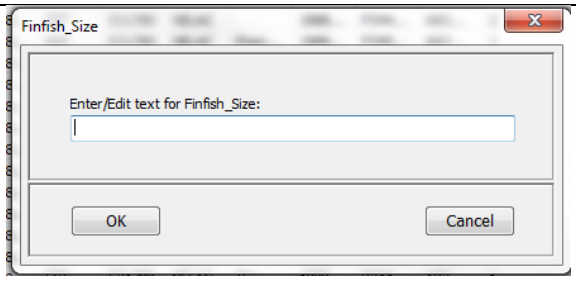
Figure 55 - Results Grid: Target_Species, Finfish_Size, Finfish_Size_Unit

When measurements are made for fish tissue, Target Species, Finfish Size, and Finfish Size Units need to be entered.

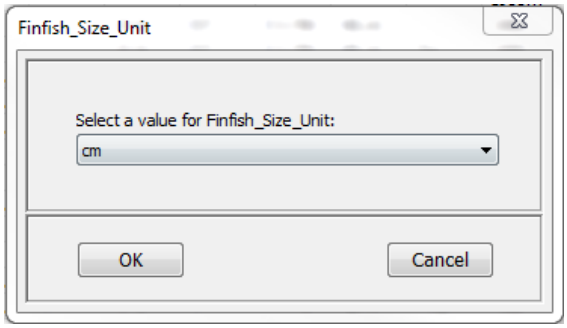
7.8.6 Target_Species

Context/Procedure	Screens(s)Displayed
Finfish Target Species Finfish Target_Species type needs to be assigned from the list in DMT.	 ***Figure 56 - Finfish Target Species***

7.8.7 Finfish_Size

Context/Procedure	Screens(s)Displayed
Finfish Size Finfish Finfish_Size need to be assigned.	 ***Figure 57 - Finfish Size***

7.8.8 Finfish_Size_Units

Context/Procedure	Screens(s)Displayed
Finfish Size Units Finfish Size Units needs to be assigned from the list in DMT.	 ***Figure 58 - Finfish Size Units***

7.9 Step 9. Save EDD

Context/Procedure	Screens(s)Displayed
When all the field measurements and WIN metadata have been entered, verified, and saved, the EDD can be generated. Click on the "*Save WIN EDD*" button at the bottom of the Results Grid. A dialog box will be displayed, allowing the user to select a directory for file storage. A default file name is provided, which represents the LIMS event and the file generation date (e.g., *SO-DIST-2021-03-04-01_02-04-2022.TXT).* The file is now ready to be imported to WIN. Default File Name Format: [EVENT ID]_[Report Run Date MM-DD-YYYY] Example SO-DIST-2021-03-04-01_02-04-2022.TXT.	 ***Figure 59 - Saving WIN EDD***

The subsequent steps are performed in WIN.

7.10 Step 10. Upload file to WIN Staging

This section provides a brief description of the steps for uploading and migrating files. For more information, see Reference WIN User Manual.

7.10.1 Internet Browser Setting for WIN

It is recommended Google Chrome be used as the primary internet browser. To modify or confirm this setting: Open Chrome and Click the three-dot icon in the upper right-hand corner. Click Settings. This action will redirect to a new webpage. In the left corner of this webpage, navigate down to “Default Brower”. Select the “Make default” button toward the top of the webpage. This action will redirect to the Settings of the PC. Here the detailed apps can be verified. Make sure the default web browser is Google Chrome. If not, select “Web Browser” and select Google Chrome.

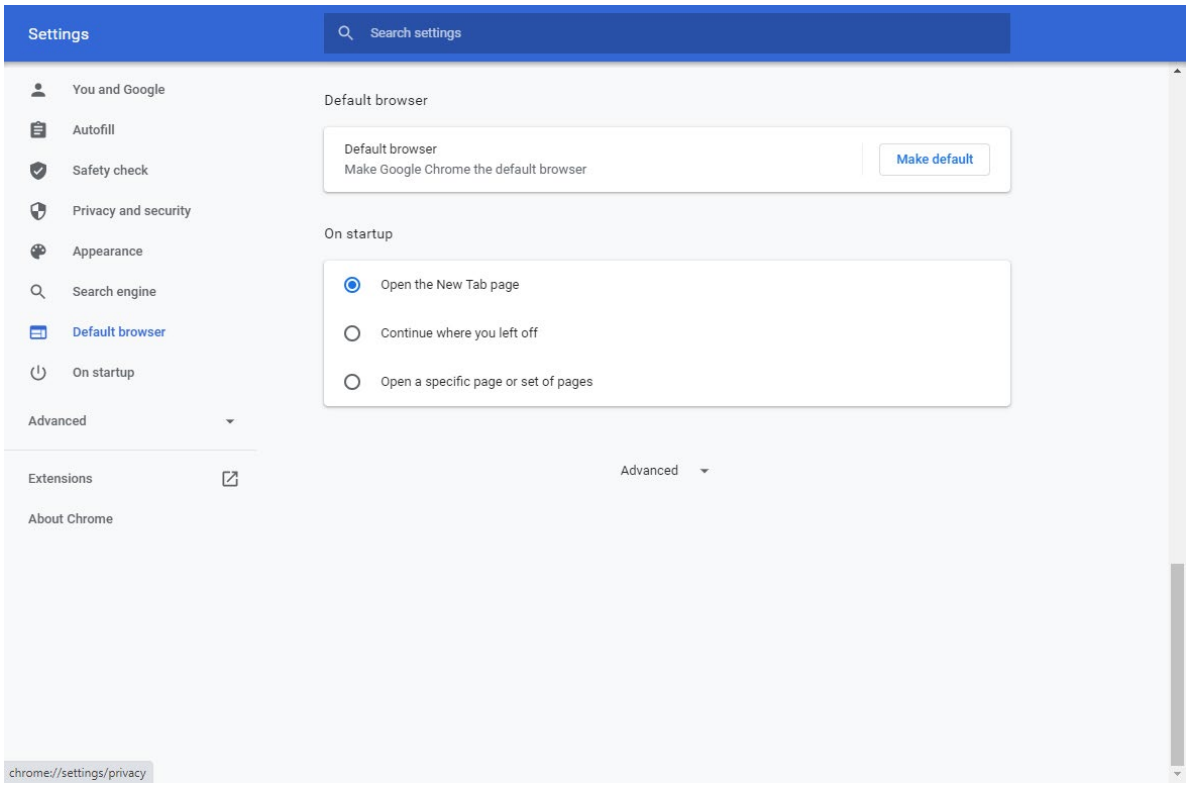


Figure 60 - Internet Browser Setting for WIN

Follow the steps to launch WIN. Navigate to the WIN homepage https://prodenv.dep.state.fl.us/DearWin. If not already logged in, click the Login button towards the bottom of the Welcome Page and populate the “Business Portal” screen with DEP credentials. From WIN Menus, select “Manage Data” -> “Staged Data”->”Upload Data”. Select the Organization ID, “Activity and Results” in the Type pull-down List, and the corresponding Config Name. Details are available in Reference WIN User Manual.

Browse to file location and select EDD file to upload.

EDD files created by DMT by default have column names on the top row. Be sure to check the box to "Ignore Leading Header Row in Upload File" and then Click "Submit and View File Status".

WIN will return an error in case the Config does not match EDD. Once there is a match, the EDD will be loaded. The Status will change to Uploading as shown below.

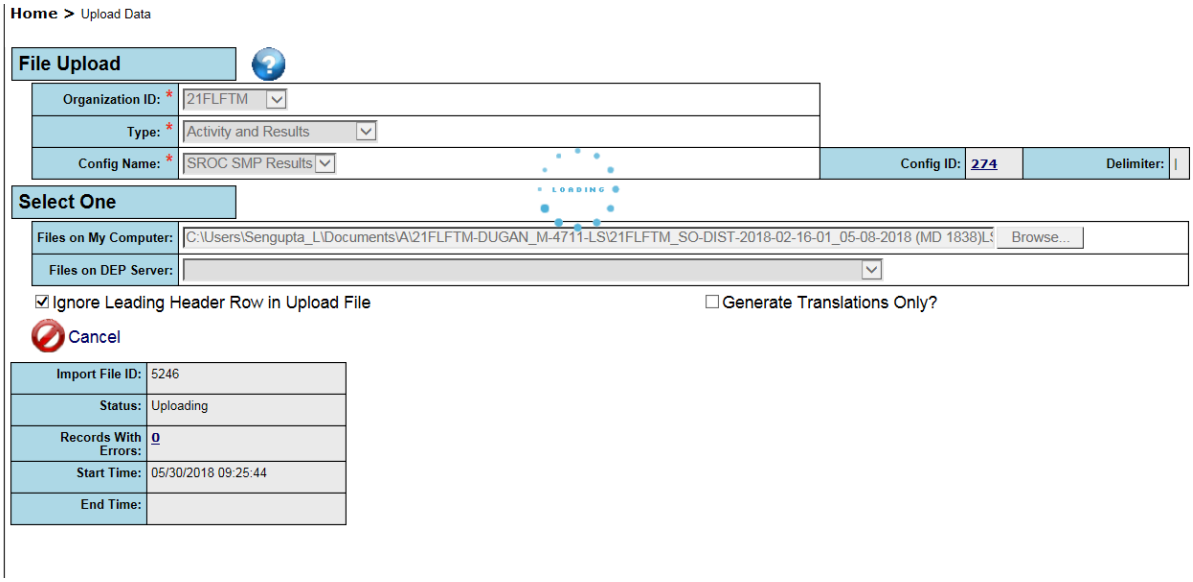


Figure 61 - Uploading Import File

As soon as the "Status" changes from "Uploading" to any other status, the user is redirected to the Dataset List screen. If there are errors, the user will be able to view them by clicking the link on Import File ID to be transferred to the Staged Data Status screen. See Reference WIN User Manual.

7.11 Step 11. Review and Correct Errors

DMT users **should not migrate** rows until all errors are handled appropriately. This will ensure the historical status for each Import File is “Migrated” (not “Partially Migrated”). Some errors cannot be resolved as noted in the below sections. These unresolvable errors must be exported or deleted before migrating clean records. To do this, either select the “Extract and Delete errors” option on the Staged Data Status Screen or delete the remaining errors directly from the Advanced Validation screen by switching the “Screen Mode” to Edit, selecting all rows to be deleted, and clicking the Delete Icon at the bottom of the screen.

The figure below shows the overview of error corrections. Error corrections are described with screenshots under the following sections:

- Errors to correct
- Errors to ignore
- Errors to follow-up

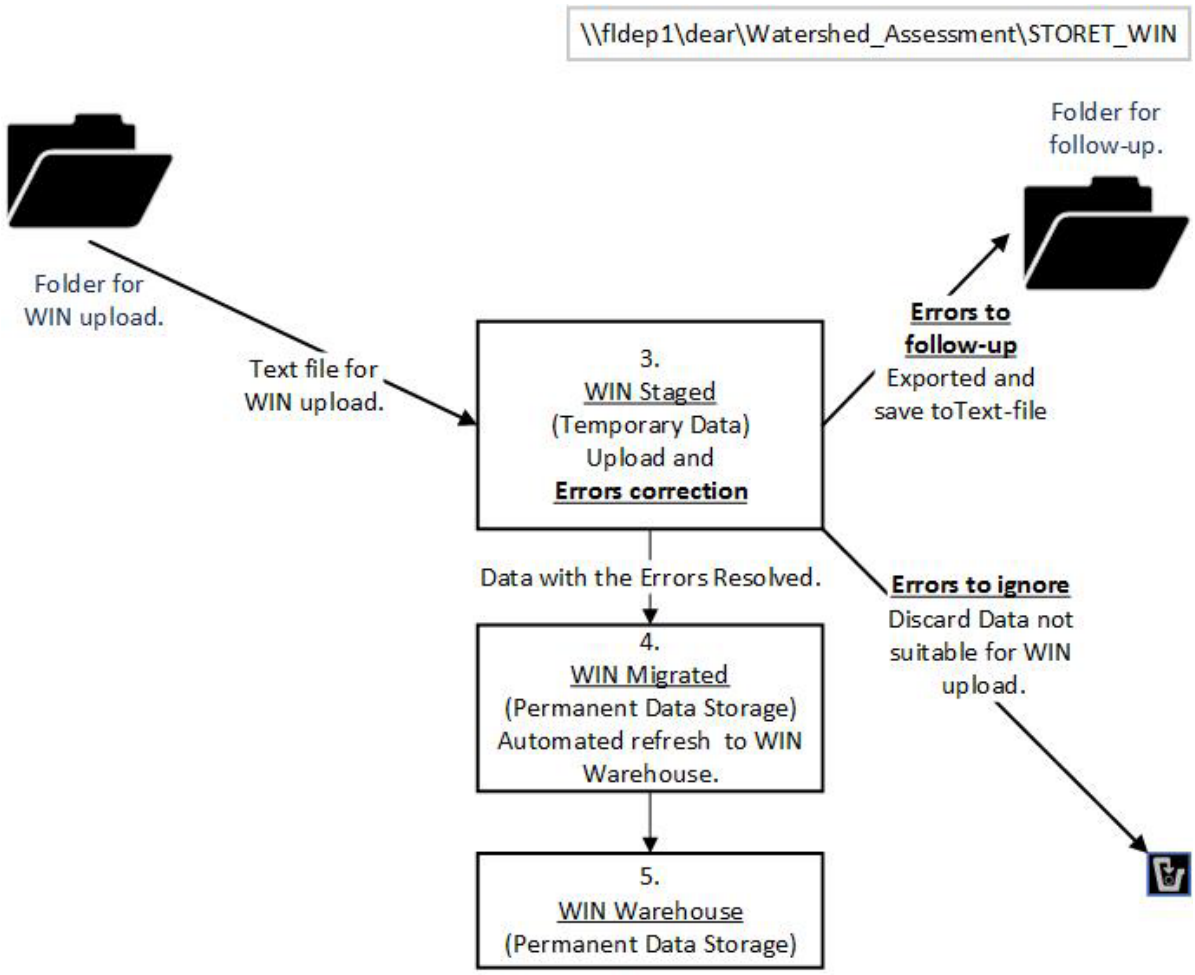


Figure 62 – Step 11. Review and Correct Errors

7.11.1 Error correction

WIN Coordinators are available to help clarify any questions. Some **typical examples** of errors that can be corrected by a WIN Loader are located at the following hyperlink:

\\Fldep1\dear\WSP\WIN\WIN Training\DMT\mdqs_advanced_rule_codes_DMT_LAB_Consult.xlsx

The linked spreadsheet contains a list that defines the error and rule violated in WIN. Yes (Y), No (N), and Depends define who would need to be contacted before WIN alterations. A Yes (Y) indicates that the DMT Lead (LIMS) needs to be contacted before alterations in WIN. A No (N) indicates that adjustments WIN would be allowed without contacting the DMT Lead (LIMS). Rows denoted as Depends require further investigation by both the DMT Lead (LIMS) and the WIN Coordinator (WC).

7.11.1.1 Correcting by Process - Basic Error - Translation Error

Error: Translation Error
Error resolution by: DMT User

Reason: Example shows the column names as errors when the user forgot to click "Ignore Leading Header Row in Upload File" button before uploading the file.

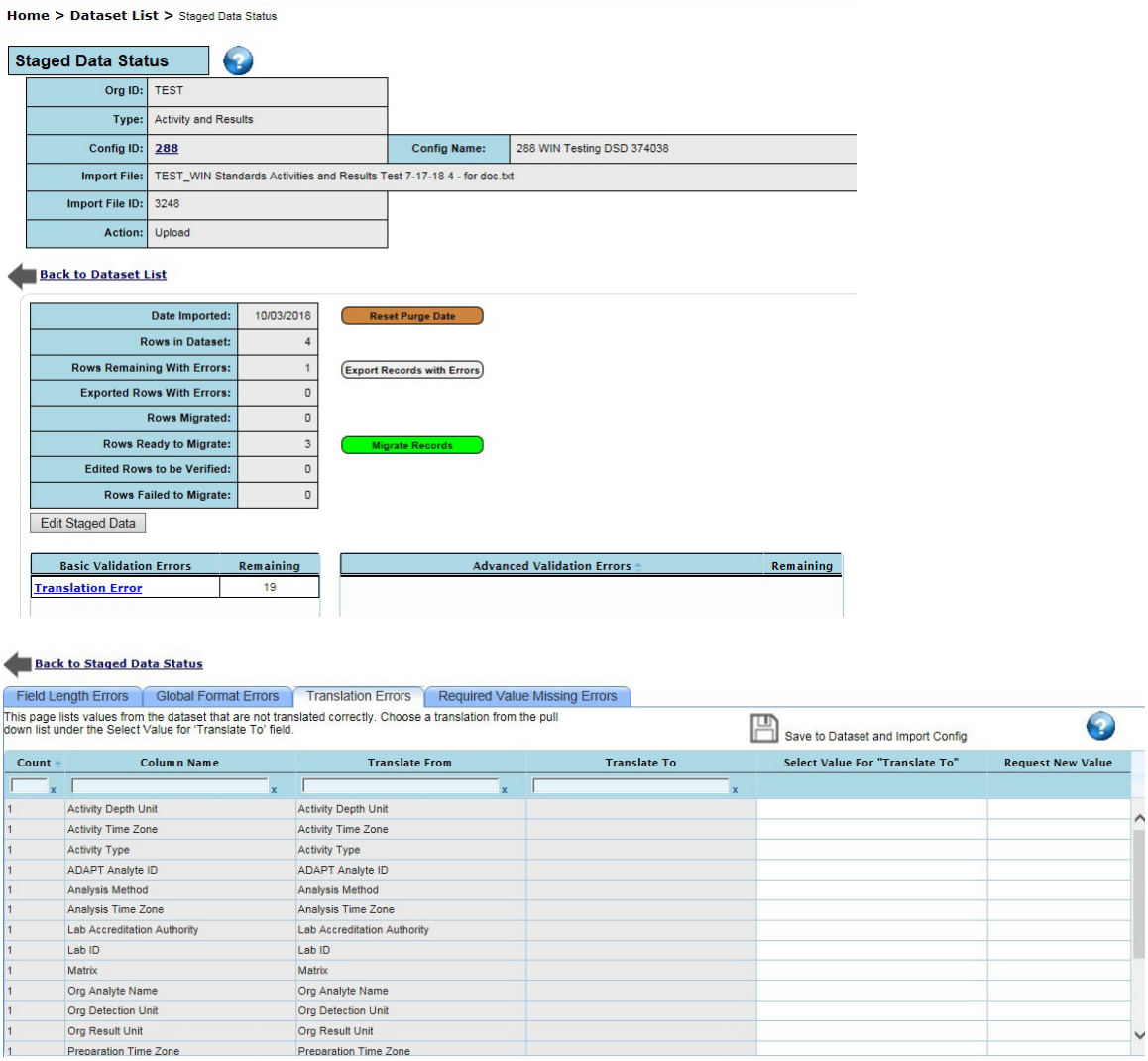


Figure 63 - Translation Error - Column Headings Imported

Action: Delete and reload the import. Make sure to click the "Ignore Leading Header Row in Upload File" before uploading the file.

7.11.1.2 Correcting by Resolving - Basic Error - Translation Error

Error: Translation Error

Error resolution by: WIN Coordinator/DMT Lead. Both need to be notified for resolution.

Reason: As an example, a new analysis has been added in LIMS and did not have the translator added.

Action: The issue will be reviewed and resolved as directed by WC and DMT Lead.

7.11.1.3 Correcting Advanced Error – Duplicate within Import File (Sample, Field Replicate)

Error: Analyte/Sample Fraction must be unique within an Activity in the import file

Error resolution by: DMT User should fix the issue if the issue is due to Reason (1) below. DMT Lead should be notified if the issue is due to Reason (2) or other scenarios.
Reasons:

(1) This error will occur if there are duplicate Field IDs on the upper portion of the site grid in the DMT. This can occur if more than one sample is taken and the indicator "_DUP", "_DUP2", "_DUP3" are not added to the Sample_Field_ID for the Field Replicates per guidance in Section 7.8.1. If the Sample_Field_IDs were duplicated for reasons other than collecting Field Replicates (e.g., typo on Field Sheet), the Sample_Field_IDs can be modified by the DMT User such that they are unique.

(2) If Sample_Field_ID in the upper portion of the site grid is NOT duplicated, then there may be more than one sample fraction-analyte combination contained within the same Activity_ID. On Results Tab in WIN, review the DEP Analyte Name and Sample Fraction column within that Activity ID. If there are two rows on the Results Tab with the same Analyte/Fraction, WIN will generate this error. This can occur because the analyte was scheduled twice, or the analyte is in two different tests, and both tests are scheduled.

Action:

(1) Confirm Activity Type = Sample. If the error is caused by Reason (1), the DMT User should review the field sheets to confirm duplicate samples were taken and then follow the guidance in 7.8.1 to make changes in the DMT and regenerate and reload the file. Users may also fix this error in WIN without returning to the DMT.
(2) Confirm Activity Type = Sample. If the error is caused by Reason (2), contact the DMT Lead and WIN Coordinator. The DMT Lead will advise the team on how to proceed with resolution, which usually involves removing one of the samples from the WIN screen and migrating the rest of the Import File ID.

7.11.1.4 Correcting Advanced Error in WIN - Extra Master Activity ID

Error: Master Activity ID must be null
Error resolution by: DMT User
Reason: As noted in Section 7.8.1, the Activity Type field for duplicate samples must be 'Field Replicate'. If the Activity Type was not updated to 'Field Replicate', but the Master Activity ID field was assigned to the parent sample, this error will be flagged.
Action: This error can be resolved by updating the Activity Type field to 'Field Replicate' in the Advanced Validation Errors screen. Once the edit is made, click "Save" and then the 'Check Adv Errors' to verify that error was resolved.

7.11.1.5 Correction Advanced Error in WIN - Missing Field Blank Batch ID

Error: Field Blank Batch ID is conditionally required
Error resolution by: DMT User

Reason: As noted in Section Field Blank Batch IDs, Field Blanks are required to have a Field Blank Batch ID. This Field Blank Batch ID should also be assigned to associated Samples taken on that same day. An example of this scenario is a file uploaded to staging where Activity_Type had "Field_Blank" and the Field_Blank_Batch_ID was not populated.

Action: This error can be resolved by updating the Field Blank Batch ID field for the Field Blank and any associated Sample data (i.e., Samples or Field Replicates) using the guidance provided in Section Field Blank Batch IDs to make changes in the DMT and regenerate and reload the file. Users may also fix this error in WIN without returning to the DMT. Once the edit is made, click "Save" and then the 'Check Adv Errors' to verify that error was resolved.

7.11.1.6 Correcting Advanced Error in WIN – Duplicates found in Migrated (Some Rows)

Error: Analyte/Sample Fraction combination already exists for this Activity ID in Migrated

Error resolution by: DMT User

Reason: This scenario can occur for several reasons. Often the original RQ is split into multiple events, possibly because coolers arrived at different times either intentionally due to sending bottles with short hold times ahead of others or inadvertently by the shipping carrier. This error may also occur if an event was partially loaded and the DMT User attempted to reload the entire event. DMT Users should avoid loading partial events by making sure to select all rows in the DMT and uploading the entire EDD in a single migration. The example below shows errors due to imported field data which already existed in WIN under a different event.

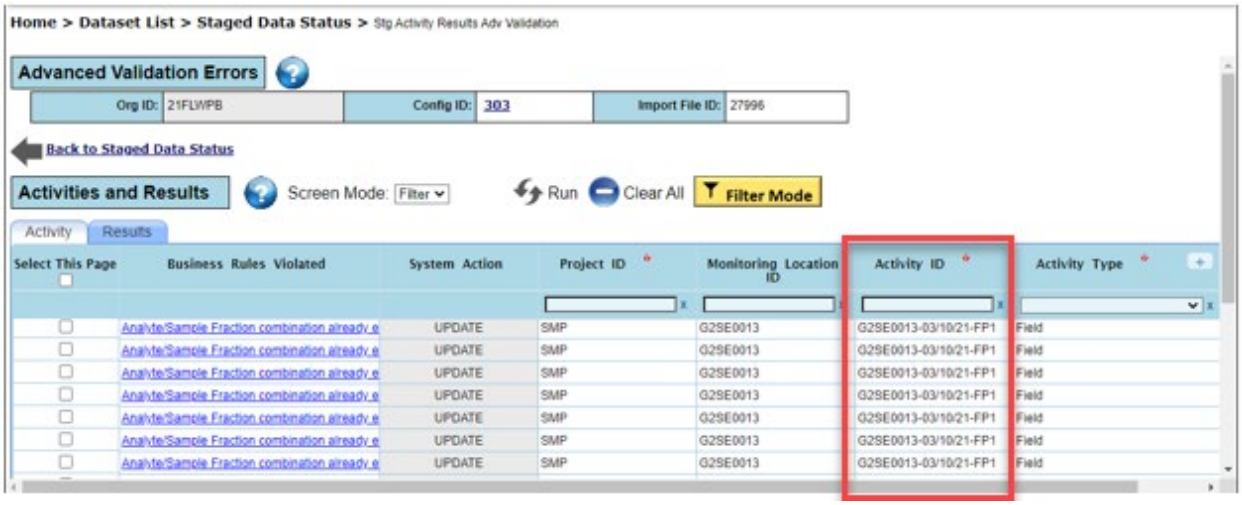
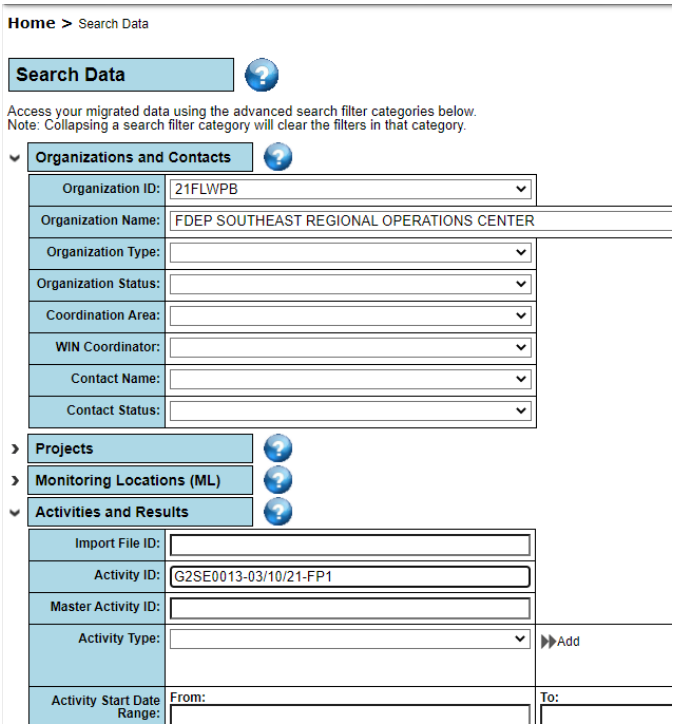


Figure 64 - Adv. Error, Data already in Migrated

Action: Confirm Activity Type = Field. Ensure at least one Activity ID already exists in migrated using the Search Data screen. To do this, navigate to the "Manage Data"-> "Migrated Data" -> "Search Data" menus. Open the "Organizations and Contacts" filters and select the proper "Organization ID". Open the "Activities and Results" filters and enter one of the Activity IDs that failed this check in the Activity ID field. Click "List Results". The DMT Users must verify at least one activity already exists in migrated before assuming all field data flagged with this error are duplicated. Once confirmed, field data flagged

with this error in staging can be removed from the Advanced Validation Screen by switching the "Screen Mode" to Edit, selecting all rows to be deleted, and clicking the Delete Icon at the bottom of the screen. Alternatively, if these are the only errors that remain, users can select the "Extract and Delete errors" option on the Staged Data Status Screen to remove all remaining errors within the Import File ID.



Result List will be displayed

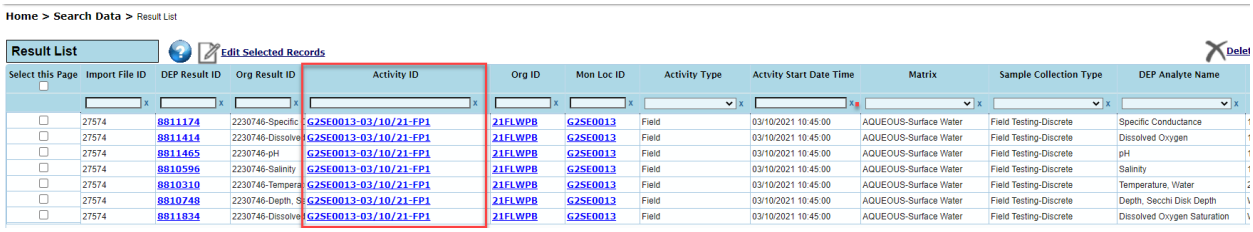


Figure 65 - Verifying Data Exists in WIN Migrated

7.11.1.7 Correcting Advanced Error in WIN – Duplicates found in Migrated (All Rows)

Error: Analyte/Sample Fraction combination already exists for this Activity ID in Migrated

Error resolution by: DMT User

Reason: If all rows within the Import File are flagged with this error, the event was already migrated.

Action: Navigate to the "History Dataset Screen" by navigating through the following menus: "Manage Data" -> "Staged Data" -> "Dataset List" -> click the "H" icon in the upper righthand corner. Search for the event by typing %***EVENTNAME***% into the Import File Name field, where the percent sign (%) is

interpreted by the WIN system as a wildcard. Click Enter to view older attempts to load this event. Confirm the event was migrated by viewing the count displayed in the "Rows Migrated" column. If no previous Import Files are shown, repeat this process on the Dataset List screen to search for recently loaded files. If no rows are shown or if no rows were migrated, contact a WIN Coordinator. (Note: The event name is embedded into the Import File Name as noted in bold font in the following example: 21FLTLHR_**TLH-ROC-2021-07-08-01**_08-10-2021.TXT. By searching for "%**TLH-ROC-2021-07-08-01%"** in the Import File Name field, all historical attempts to load this event will be displayed on the screen.)

7.11.1.8 Correcting Advanced Error in WIN – Incomplete set of data

Error: Lab QC result must be associated with at least one sampled result for the same DEP Analyte Name
Error resolution by: DMT User
Reason: This error will occur when a Lab QC record does not have a corresponding Environmental Sample ('Sample', 'Sample-Composite', 'Field Replicate', 'Trip Blank', 'Equipment Blank', OR 'Field Blank') in the Import File or WIN Migrated with the same DEP Analyte Name and Method Batch ID. This error may occur if a partial event was loaded because not all rows were selected in the DMT before generating the file. It is also possible that not all analyses were run at all sites.

Action: Using the DMT, DMT users should double-check that all rows from the event are selected and regenerate the file. If the number of rows in the regenerated DMT file does not match the number of rows loaded into WIN, then data are missing. The original file should be discarded, and the regenerated file should be loaded in its place. If this does not resolve the error, contact the DMT Lead and WIN Coordinator.

7.11.1.9 Correcting Advanced Error by Lab - Missing Prep Date/Time

Error: Prep Date Time is conditionally required
Error resolution by: WIN Coordinator/DMT Lead needs to be notified for resolution.
Reason: Prep Date/Time is not provided by an overflow lab for microbiological data.
Action: The error will be flagged Preparation Date Time is conditionally required.

For microbiological data collected on or after July 1, 2017, please contact the DMT Lead and WIN Coordinator. The event (entire upload file) should remain in WIN staging until the issue is resolved. When the issue is resolved, the complete event should be migrated. Microbiological data with Missing Prep Date/Time collected before July 1, 2017, cannot be loaded to WIN.

7.11.2 Errors to ignore

Error: Translation Error
Error resolution by: DMT User can resolve this error.
Reason: Analyte "Chlorophyll/Phaeophytin Ratio" and associated "FL-BIO-005" ADAPT Analyte ID are not supported by WIN. The FDEP Laboratory discontinued this analyte, but older events may still contain it. If this issue exists in the upload file, it will be identified as a translation error as shown below.

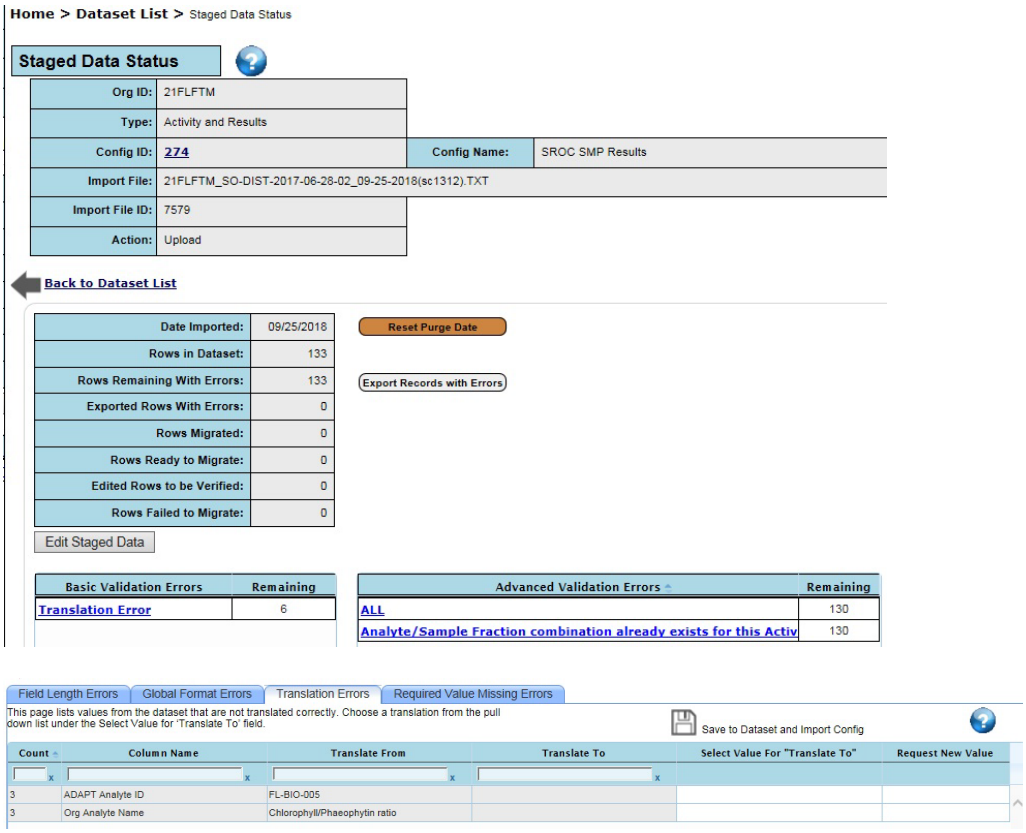


Figure 66 - Translation Error - Discontinued Analyte

Action: Resolve all other errors that can be corrected. If this is the only error that remains, users can select the “Extract and Delete errors” option on the Staged Data Status Screen to remove all remaining errors within the Import File ID.

7.11.3 Errors to follow-up

This section will be expanded if there are scenarios that require extensive research to resolve errors. Currently, no such scenarios exist.

7.12 Step 12. Promote staged data to WIN Migrated

To migrate records, click the green button next to “Rows Ready to Migrate”. Note: all remaining rows should be ready to migrate at this time. If errors remain, please resolve/remove the remaining issues as described above.

The example below shows that **9 rows with errors were already exported** and the **remaining 1130 rows are error-free.**

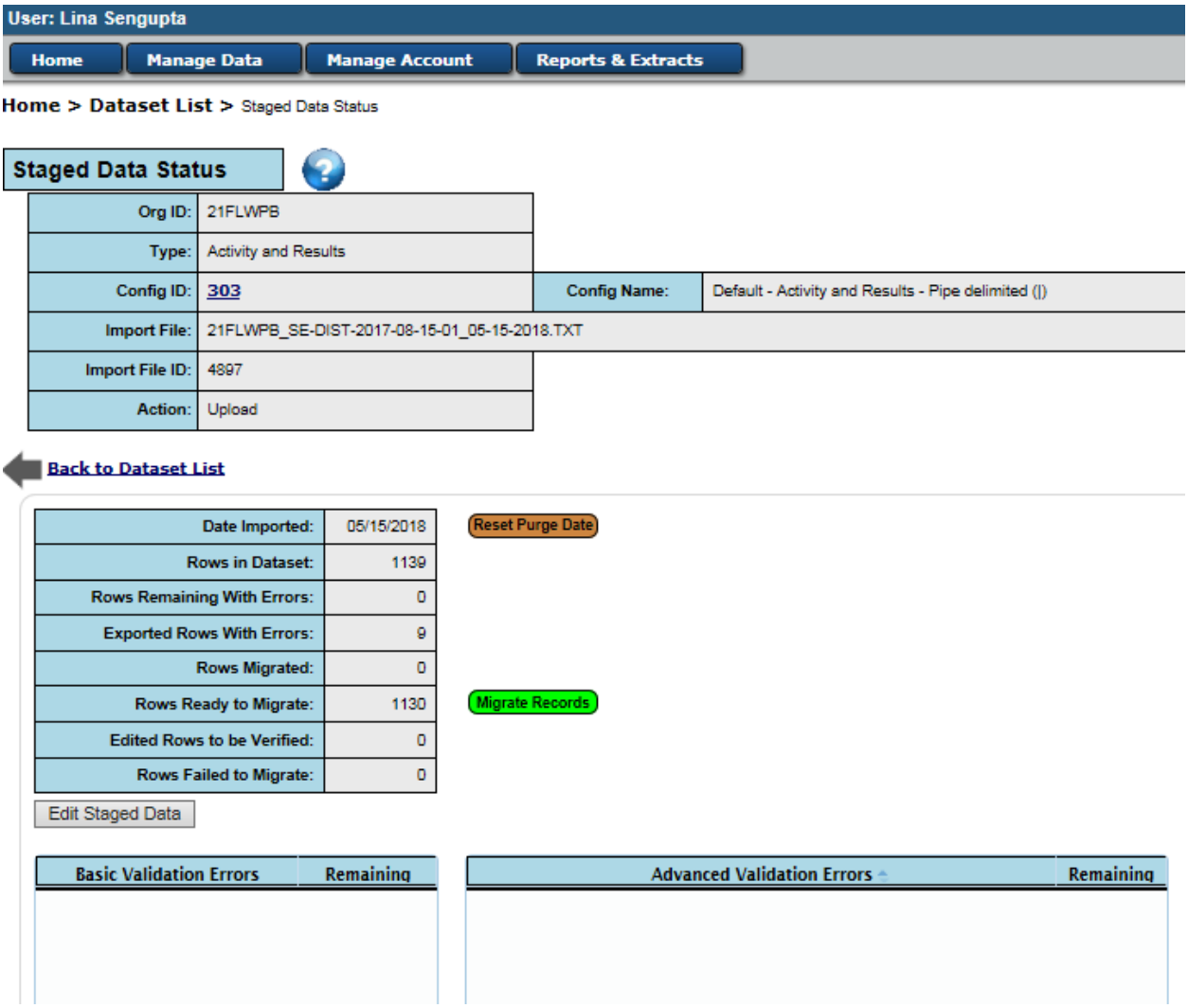


Figure 67 - Migrating Rows with no errors

7.12.1 "Migrate and Export" vs "Migrate Only"

When the "Migrate Records" option is selected, the following options are available: "Migrate and Export", "Migrate Only", or "Cancel".

Note: It is recommended that the "Migrate and Export" option be used. There are occasions when there is a need to check if some specific data was already uploaded. It serves as a check for the number of rows migrated. Receiving the emails with the Migrated data information is a built-in logging mechanism for the DMT User, but these files need to be saved by clicking the link provided in the email. Files are purged from the temporary storage location regularly, causing the link to fail if the file is not downloaded in a timely manner.

7.13 Step 13. Migrated data automatic refresh to WIN Warehouse

After an import file is uploaded and migrated to WIN, it resides in WIN Migrated. Once data are migrated, they can be retrieved from WIN Warehouse in one to two days.

7.14 Step 14. Anomalies

Often an error is found in WIN by users of the WIN data. If there is a further explanation of the data or site information needed in WIN an "Anomaly" may be recorded for the data. The anomaly report will be emailed to the data collector and a warning symbol will be highlighted on the WIN welcome screen for the data loader. Documented steps can be taken to address the concerns of the data user using the Anomaly process.

8 Guidance-DMT/WIN by Policy Managers

This section captures the guidance from Policy Managers.

8.1 Field QC Collection, Batching, and Evaluation

8.1.1.1 Equipment Blanks

Collection: these should be collected any time samples are collected using equipment or an intermediate device, at a minimum frequency of 5% for the project. The analytes collected for the blank should be the same as the samples collected using that equipment with the exception of chlorophyll-a. If more than one type of equipment is used, the blank should be collected using the same equipment as the samples (e.g. VanDorn used and sample filtered).

Batching: See Section Equipment Blank Batch ID.

Data Evaluation: Avoid contamination when collecting Equipment Blanks. Samplers are to keep an eye out for possible causes of contamination.

For evaluating equipment blanks relative to samples in the same batch, DEP requires the use of the "10% rule" as described in the qualifier table of the QA Rule (62-160.700, F.A.C.) for all lab analytes other than microbiology and BOD. If there are detections of an analyte in both the sample(s) and the associated equipment blank, WIN will evaluate whether the detection in the equipment blank is >10% of the detection in the sample(s). If the blank result is >10% of the sample result for a given sample/analyte, that sample should be "G"-qualified. To add the "G" qualifier to the flagged sample, the DMT User will select the sample row that was flagged for the "Value Qualifier "G" is conditionally required" rule. Then select "Append" in Screen Mode on the Advanced Validation Error Screen (Result Tab), type "G" in the text box associated with the Value Qualifier column, and click "Save Selected". The DMT User may also remove the Equipment Blank Batch ID on the flagged sample if the source of contamination is not associated with that particular sample(s). WIN data loaders may calculate and verify the addition of the "G" qualifier manually. Below are detailed instructions.

Example 1:

- NO2+NO3 results – Equipment Blank = 0.008 mg/L, so any sample in the same batch with detection < 0.08 mg/L must be G-qualified.
- Sample 1 = 0.02 mg/L, add G qualifier; Sample 2 = 0.10 mg/L, do not add G qualifier.

Example 2:

- The Equipment Blank value and the associated sample value are both detects (neither are "U" qualified).
- Result Value associated with the Sample = 100 mg/L

- A “G” qualifier would need to be applied to that sample if the associated blank value is > 10 mg/L.

Example 3:

- The Equipment Blank value and the associated sample value are both detects (neither are “U” qualified).
  blank value = 10 mg/L
- A “G” qualifier would need to be applied to any samples associated with this Equipment Blank where the sample value is < 100 mg/L.

8.1.1.2 Field Blanks

Collection: Field blanks are collected at a minimum of 5% of a project. Most ROC staff are collecting at least one field blank per sampling run for SMP. Collect additional blanks associated with other projects, as necessary. Exceptions to field blank collection are chlorophyll-a, bacteria, and q-PCR. Field blanks are not required for these parameters.

Batching: Field Blank Batch IDs.

Data Evaluation: Care should be taken to minimize contamination when collecting Field Blanks. Samplers are to keep an eye out for possible causes of contamination.

For evaluating field blanks relative to samples in the same batch, DEP requires the use of the “10% rule” as described in the qualifier table of the QA Rule (62-160.700, F.A.C.) for all lab analytes other than microbiology and BOD. If there are detections of an analyte in both the sample(s) and the associated field blank, WIN will evaluate whether the detection in the field blank is >10% of the detection in the sample(s). If the blank result is >10% of the sample result for a given sample/analyte, that sample should be “G”-qualified. To add the “G” qualifier to the flagged sample, the DMT User will select the sample row that was flagged for the “Value Qualifier “G” is conditionally required” rule. Then select “Append” in Screen Mode on the Advanced Validation Error Screen (Result Tab), type “G” in the text box associated with the Value Qualifier column, and click “Save Selected”. The DMT User may also remove the Field Blank Batch ID on the flagged sample if the source of contamination is not associated with that particular sample(s). WIN data loaders may calculate and verify the addition of the “G” qualifier manually. Below are detailed instructions.

Example 1:

- NO2+NO3 results – Field Blank = 0.008 mg/L, so any sample in the same batch with detection < 0.08 mg/L must be G-qualified.
- Sample 1 = 0.02 mg/L, add G qualifier; Sample 2 = 0.10 mg/L, do not add G qualifier.

Example 2:

- The Field Blank value and the associated sample value are both detects (neither are "U" qualified).
- Result Value associated with the Sample = 100 mg/L
- A "G" qualifier would need to be applied to that sample if the associated blank value is > 10 mg/L.

Example 3:

- The Field Blank value and the associated sample value are both detects (neither are "U" qualified).
  Field Blank value = 10 mg/L
- A "G" qualifier would need to be applied to any samples associated with this Field Blank where the sample value is < 100 mg/L.

8.2 Field Replicates

Collection: Collect Field replicates (dups) at a minimum of 5% of samples for a project. Most ROC staff are collecting at least one field replicate per week for SMP sampling. Field replicates are to be collected for all analytes, including chlorophyll-a and bacteria.

Batching: See Section Associate Replicates (Activity_ID, Activity_Type, Master_Activity_ID).

Data Evaluation: For evaluating replicates, a relative percent difference (% RPD) is needed. The excerpt from the DEP Lab QA Manual is provided just below. The %RPD should be calculated for each analyte and it should be compared to those percentages in Table 5.1, also in the DEP Lab QA Manual found at this link: http://publicfiles.dep.state.fl.us/dear/labs/lab_qualitymanual_18.pdf
If both results are U or I-qualified, do not need to calculate RPD, and the samples are considered to pass QA/QC. The RPD% is not required by DEP SOPs and is collected by ROC staff as part of the internal quality control. If RPD% is higher than expected it is recommended that field procedures are reviewed.

Replicate analyses are used to evaluate precision. Precision is expressed by the relative percent difference (RPD) to compare duplicate samples/spikes A and B and is based on the formula:

$$\text{RPD (\%)} = \frac{|A-B|}{(A+B)} \times 200$$

Figure 68 - Relative Percent Difference

If the calculated RPD values exceed the limits, then field methods should be reviewed. Data do not need to be qualified.