Montana Department of Environmental Quality

Lead in School Lab Guidance Manual

Information Support Services
Information Management Bureau
Central Services Division

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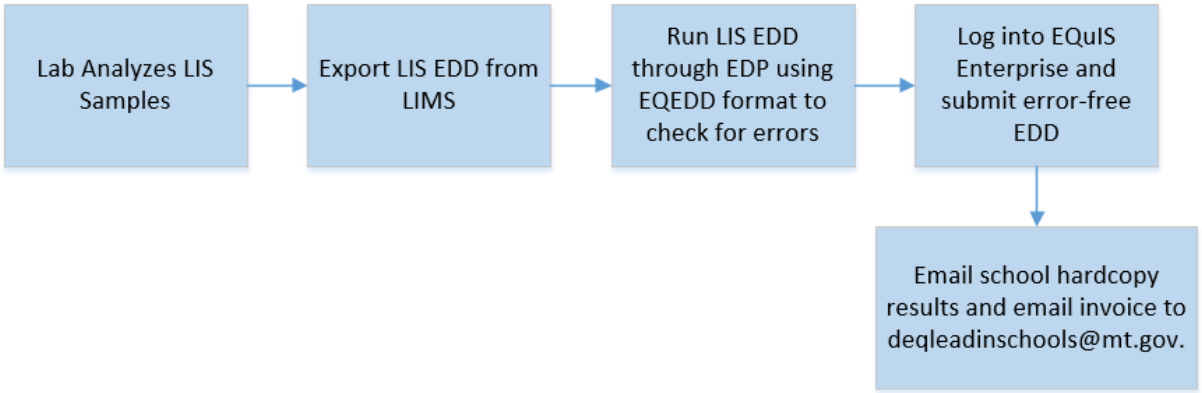
Document History			
Revision #	**Revision Date**	**Revised By**	**Notes**
1.0	4/12/2021	Jolene McQuillan	Initial document for LIS lab guidance

1.0 Lead in School Laboratory Overview

The purpose of this guidance manual is to provide labs instructions on submitting data directly to DEQ for the Lead Reduction in Schools Drinking Water Rule (LIS). The overall dataflow for LIS is as follows:



Many labs already submit electronic data deliverables (EDDs) to DEQ in one of our EQuIS EDD formats (MT-eWQX and MT-WMRD). The LIS dataflow is unique in that the lab will be submitting the data directly into the Montana EQuIS database. LIS will be the first program to submit data to DEQ this way, but they will not be the last. As more programs utilize Montana EQuIS, this type of dataflow will become more common.

If labs have questions specific to the EDD and the EDD submittal process, please contact DEQ's Sample Data Management Coordinator, Jolene McQuillan, at jmcquillan@mt.gov. If labs have questions that are specific to a LIS sample submittal or COC, please contact the DEQ Lead in School Team at deqleadinschools@mt.gov.

2.0 LIS EDD Format

The LIS program is using the EQuIS EQEDD Format. There are multiple worksheets within this EDD, but labs are only responsible for populating and submitting the LabSample_v1 and TestResults_v1 worksheets. A blank LIS EQEDD (EQEDD with just the two required worksheets included) and an example LIS EQEDD are available for download from DEQ's Lead in School website: http://deq.mt.gov/water/drinkingwater/LeadInSchools/LIS_Guidance

The following tables include descriptions of the fields in the two required EDD worksheets. Some of the fields are required by the EDD format and some additional fields are requested by DEQ. The final EDD should be in an Excel format ready for upload to EQuIS Enterprise.

Table 2-1: LabSample_v1 Fields

Column Name	Data Type	Required by EDD?	Required by DEQ?	Description
sys_sample_code	Text(40)	Yes	Yes	From Sample ID on COC
sample_name	Text(50)			
sample_matrix_code	Text(10)	Yes	Yes	Lookup value = DW
sample_type_code	Text(20)	Yes	Yes	Lookup value = N
sample_source	Text(10)	Yes	Yes	Lookup value = Field
parent_sample_code	Text(40)			
sample_delivery_group	Text(20)			
sample_date	DateTime	Yes	Yes	From Sample Date/Time on COC
sys_loc_code	Text(20)			
start_depth	Numeric			
end_depth	Numeric			
depth_unit	Text(15)			
chain_of_custody	Text(40)			
sent_to_lab_date	DateTime			
sample_receipt_date	DateTime			
sampler	Text(50)			
sampling_company_code	Text(40)	Yes	Yes	Lookup value = School
sampling_reason	Text(30)			
sampling_method	Text(40)			
task_code	Text(40)			
collection_quarter	Text(6)			
composite_yn	Text(1)	Yes	Yes	Lookup value = N
composite_desc	Text(255)			
sample_class	Text(10)			
custom_field_1	Text(255)			
custom_field_2	Text(255)			
custom_field_3	Text(255)			
comment	Text(2000)			

Table 2-2 TestResults_v1 Description				
Column Name	**Data Type**	**Required by EDD?**	**Required by DEQ?**	**Description**
sys_sample_code	Text(40)	Yes	Yes	From Sample ID on COC
lab_anl_method_name	Text(20)	Yes	Yes	Lookup value for lead in DW: 200.8, 200.9, 3113-B, D3559(D)
analysis_date	DateTime	Yes	Yes	Date and time of lab analysis
total_or_dissolved	Text(10)	Yes	Yes	Lookup value = Total or Dissolved
column_number	Text(2)		Yes	Lookup value = NA
test_type	Text(10)	Yes	Yes	Lookup value = INITIAL
lab_matrix_code	Text(10)	Yes	Yes	Lookup value = DW
analysis_location	Text(2)	Yes	Yes	Lookup value = LB
basis	Text(10)	Yes	Yes	Lookup value = NA
container_id	Text(30)			
dilution_factor	Numeric	Yes	Yes	Defaults to '1.0'. Can leave null unless you want to specify different value.
prep_method	Text(20)			
prep_date	DateTime			
leachate_method	Text(15)			
leachate_date	DateTime			
lab_name_code	Text(40)	Yes	Yes	Lookup value for lab name (see Appendix A or available in EDP)
qc_level	Text(10)	Yes	Yes	Lookup value = QUANT
lab_sample_id	Text(40)	Yes	Yes	Lab's unique Sample ID
percent_moisture	Text(5)			
subsample_amount	Text(14)			
subsample_amount_unit	Text(15)			
analyst_name	Text(50)			
instrument_id	Text(60)			
comment	Text(2000)			
preservative	Text(20)			
final_volume	Numeric			
final_volume_unit	Text(15)			
cas_rn	Text(15)	Yes	Yes	Lookup value = 7439-92-1
chemical_name	Text(255)	Yes	Yes	Lookup value = Lead
result_value	Numeric	Conditional	Conditional	Result_value is required when detect_flag = 'Y'. Leave null for non-detects.
result_error_delta	Text(20)			
result_type_code	Text(10)	Yes	Yes	Lookup value = TRG
reportable_result	Text(10)	Yes	Yes	Lookup value = Yes
detect_flag	Text(2)	Yes	Yes	Use 'Y' for detected analytes or 'N' for non-detects. Use 'Y' for estimated values between the LRL and MDL.

Table 2-2 TestResults_v1 Description				
Column Name	**Data Type**	**Required by EDD?**	**Required by DEQ?**	**Description**
lab_qualifiers	Text(20)			Populate with valid qualifiers assigned by lab
validator_qualifiers	Text(20)			
interpreted_qualifiers	Text(20)			
organic_yn	Text(1)			
method_detection_limit	Text(20)		Yes	Lab's Method Detection Limit
reporting_detection_limit	Numeric	Conditional	Yes	Lab's Lower Reporting Limit
quantitation_limit	Text(20)			
result_unit	Text(15)		Conditional	Lookup value for unit if result_value is populated.
detection_limit_unit	Text(15)	Conditional	Yes	Lookup value for detection limit unit
tic_retention_time	Text(8)			
result_comment	Text(2000)			
custom_field_2	Text(255)			
custom_field_3	Text(255)			
custom_field_4	Text(255)			
lab_sdg	Text(20)			
validated_yn	Text(1)			
stat_type	Text(20)			
value_type	Text(10)			
uncertainty	Text(10)			
minimum_detectable_conc	Text(19)			
critical_value	Text(19)			
counting_error	Text(19)			

3.0 EQuIS Data Processor

The EQuIS Data Processor (EDP) is a standalone application that must be used by data providers to check their EDD files prior to submission to the Montana EQuIS database. The EDP performs a series of formatting checks on the EDD and then identifies any records that have errors. The EDP checks data for the following:

- Required Fields
- Field Length
- Data Types
- Valid Reference Values
- Duplicate Rows
- Range Checking
- Record Parent-Child Relationships

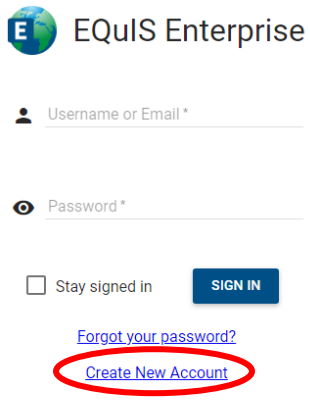
If errors are detected, the application allows the data provider to correct the errors directly in EDP. After all errors have been corrected, the EDP must be re-run to ensure that no errors remain. EDD files that pass through the EDP error-free should also result in an error-free import into the Montana EQuIS database. The EDP does not compare the data in the EDD to the data in the database, so it is possible to receive an error when submitting to Montana EQuIS if the data in your EDD conflicts with data in the database.

Information on downloading, installing, and using the EDP application can be found within the EDP Guidance Manual available from the Montana DEQ EDP and EQEDD download webpage: https://earthsoft.com/products/edp/edp-format-for-mtdeq-eqedd/.

4.0 EQuIS Enterprise

When an EDD has been ran through EDP and is error-free, it can be submitted to DEQ through EQuIS Enterprise. Labs must create an Enterprise account before they are able to submit any data. The account should be associated with a named user, not a generic lab email address. To create an EQuIS Enterprise account:

1. Go to https://mtdeq.equisonline.com/
    - Chrome and Firefox are recommended; Internet Explorer is not supported.
2. Select **Create New Account**.



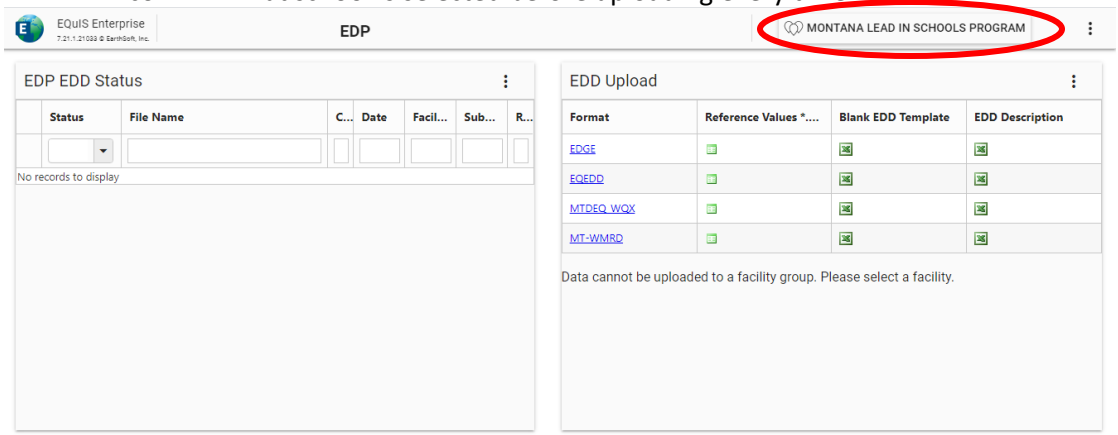
3. The first part of the New User Registration form opens. Enter a User Name and Email Address. Select **Continue**.
4. Check your inbox for an email from EQuIS with your confirmation code. Copy and paste the code into the New User Registration form. Populate the remaining fields as follows:
    - First and Last Name
    - Password: Must be at least 6 characters long and contain at least one uppercase letter, one lowercase letter, and one number.
    - Company Name
    - City and Zip Code
5. Select **Register** once all fields are populated.
6. Allow up to 2 business days for your account to be activated. Once activated, you will receive a confirmation email from DEQ. You cannot access Enterprise until your account has been activated.

NOTE: If you already have an EQuIS Enterprise account, please email MontanaEQuIS@mt.gov to request updated permissions for the LIS program.

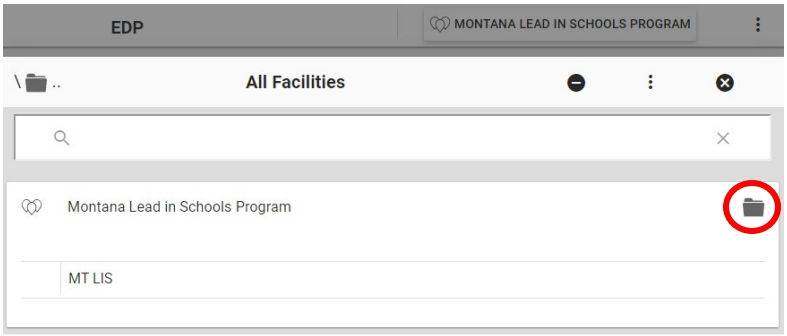
4.1 Submitting Data

For the LIS program, data is submitted directly to DEQ's Montana EQuIS database using EQuIS Enterprise. To submit an EDD:

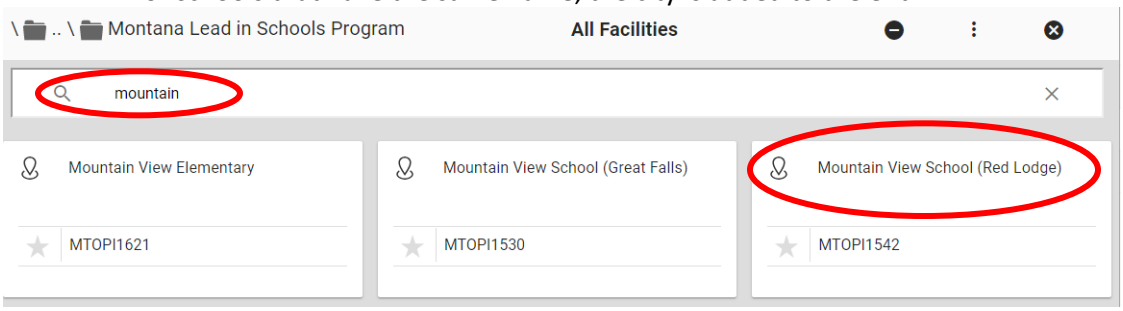
1. Go to https://mtdeq.equisonline.com/ and log-in.
2. **IMPORTANT:** Select the facility/school you are submitting data for by clicking the facility selector in the upper right corner.
    - Enterprise will remember the last school you submitted data for, so it's important to confirm what school is selected before uploading every time.



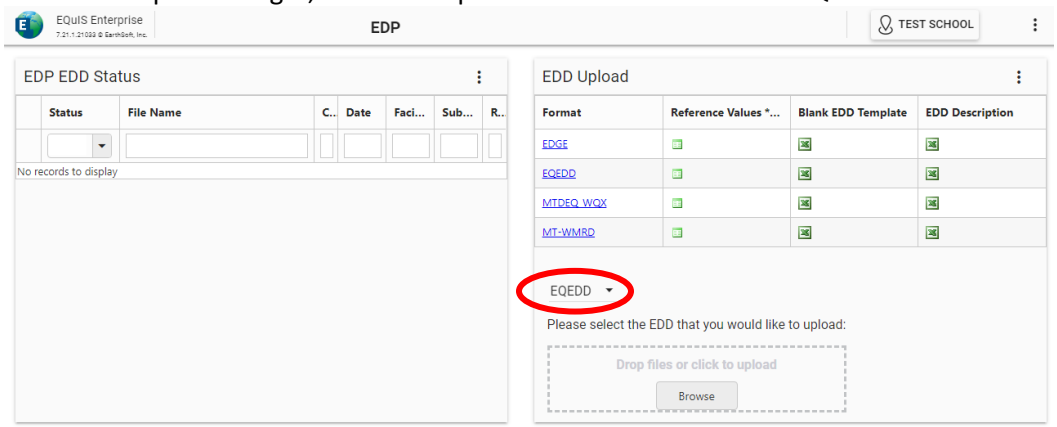
3. Click the folder icon.



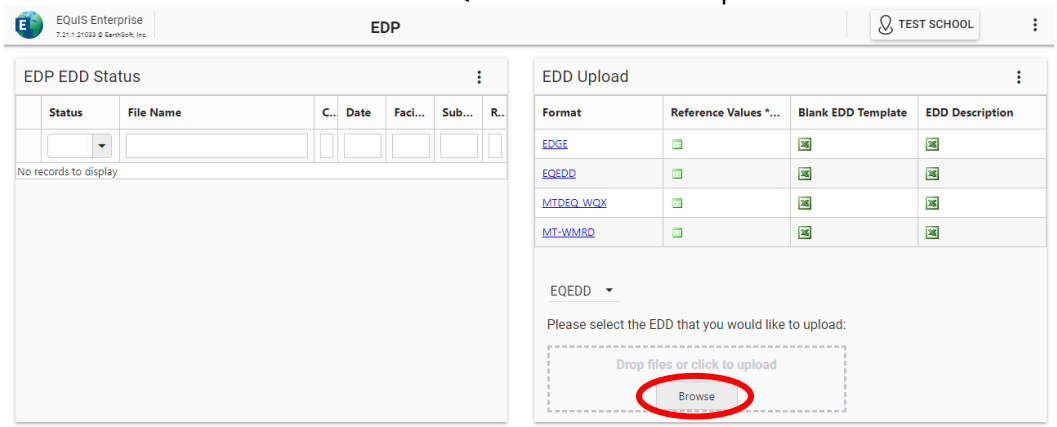
4. Use the search bar to search for the school's name. Click the school name to select it.
    - For schools that have the same name, the city is added to the end.



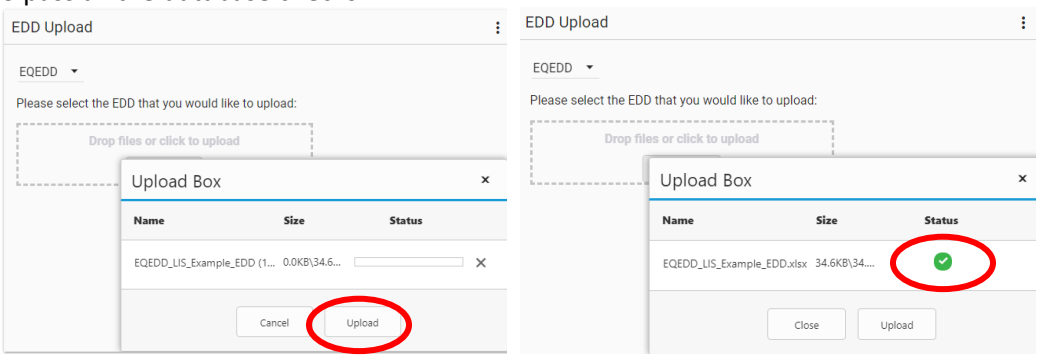
5. In the EDD Upload widget, use the drop-down menu to select the 'EQEDD' format.



6. Select 'Browse' to browse to the LIS EQEDD Excel file to be uploaded to the selected facility.



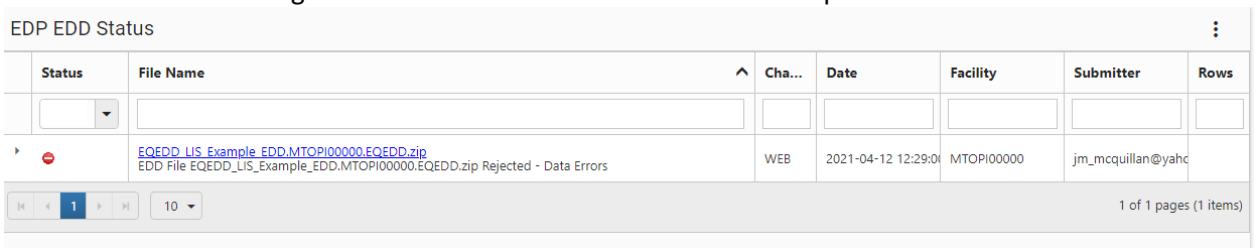
7. An Upload Box will appear after selecting the EDD file. Select 'Upload' to continue. The Upload Box will display a green check mark icon if the file was uploaded. This does not indicate the data has loaded with no errors, is only indicates the file has been submitted to Enterprise, it still has to pass all the database checks.



8. The time it takes an EDD to process will vary, but the data submitter will generally receive an email within an hour after uploading an EDD. The email will indicate if the EDD was successfully loaded into EQuIS or if there were errors. <u>If it was successful, nothing else is needed. If there were errors, the EDD will need to be updated and resubmitted.</u>

4.2 EDP EDD Status Widget

The EDP EDD Status widget can be used to confirm the status of an uploaded EDD.



Status: The status of an EDD is defined as:

- Blue Icon: EDD processing is not complete
- Green Icon: EDD successfully committed to database
- Red Icon: EDD had errors that prevented the data from being committed to database
- Yellow Icon: EDD was rolled back after commit (data removed by admin user) or if the status cannot be determined

To refresh the widget, click the three dots in the upper right corner and select “Refresh”. The widget will display all EDDs processed by Enterprise, including EDDs submitted by other users. The list of EDDs can be sorted and filtered based on status, file name, channel, date, facility, and submitter. The bottom of the widget contains paging controls for displaying a limited number of EDDs at a time and moving between pages of records.

Each EDD record can be expanded by clicking the triangle to the left of the Status column. Details about all tasks and notices associated with the EDD process will be displayed. Any reports or commit logs generated by the EDD can be downloaded by clicking the hyperlinked file name.

Appendix A: Lab Name Valid Values

The table below contains valid values for the lab_name_code field in the TestResults_v1 EDD worksheet. If your lab is not listed, please email DEQ's Sample Data Management Coordinator, Jolene McQuillan, at jmcquillan@mt.gov.

Lab Name Code	Lab Name
ALPINE	Alpine Analytical
ANATEK	Anatek Labs
BRIDGER	Bridger Analytical Labs
ENERGY	Energy Laboratories
ENERGY-BIL	Energy Laboratories - Billings Lab
ENERGY-HLN	Energy Laboratories - Helena Lab
EUROFINS-EATON	Eurofins Eaton Analytical, Inc.
IML-LAB	Intermountain Laboratories
MELAB	Montana Environmental Laboratory
STATELAB	Dept of Public Health and Human Services Environmental Lab