

DMP User Guide

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1. DMP Editor- General Information

1.1 What is the DMP Editor?

The DMP Editor is an application for viewing and editing SNOTEL and SCAN data. The key features of the DMP Editor are the following:

- View or edit SNOTEL data
- Select large amounts of data
- Graph the data and edit the data directly on the graph by dragging points
- Export data to your PC as delimited files (.csv or .txt)
- Filter the data to only a subset of the original data you requested
- Provide an easy way to edit multiple values at the same time (mass edit capability)
- Provide tools to identify data quality problems quickly and easily
- Print data and charts
- Export charts as an image

1.2 Overview of the Editing Process

The DMP editing process involves two steps:

1. Select the data to view/edit (using the Data Editor Setup screen).
2. View and/or edit the data that has been retrieved using the tools available on the window that contains the data.

The data is presented in a spreadsheet-like grid. The data for only a single station and group can be viewed at a given time, but you can easily switch to any of the stations and groups selected.

1.3 Requesting Data for Editing (Data Editor Setup screen)

The first step in using the DMP Editor is requesting the data to view or edit. There are four different criteria that must be specified.

1. A list of sites (station and aliases)
2. The sensors and/or groups
3. A range of dates for which to retrieve data
4. The number of values to retrieve for each day (the frequency)

Each of these criteria have lists to choose from. You can select an item from a list or you can select the **Custom** button below the list to change it into a text box where you can enter the selection criteria. To return to the lists, just press the button that begins with **Std**.

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For each section that has a **Custom** button, there is a **Help** button that appears after hitting the **Custom** button. Pressing the **Help** button displays a screen with information that can be specified for that criteria.

Specific information on each of the search criteria is detailed in the table below.

Criteria	Feature Details
Site List Configuration	<ul style="list-style-type: none">• A list of aliases that represent a group of sites to retrieve. This list is dependent on the lists that have been defined for the logged-in user. The list will be empty if you don't have any site aliases.• To view the sites within an alias, click the Contents button• Click Custom to specify a comma-separated list of station IDs, patterns to match, or .state or .dco codes to retrieve
Sensor/Group Selection	<ul style="list-style-type: none">• A list of sensors to display within the editor• You can configure this with the DMP Configuration Editor. Once the desired sensors are configured, click Download Config within the tool to generate a new dmp_settings.json file to place in your DMP folder.<ul style="list-style-type: none">○ NOTE: You must download the DMP settings file OR you must generate it to your local DMP folder to configure a custom list of sensors. If you skip this step, you will see a default list instead.• Click Reload to refresh the list to reflect changes from your DMP settings file during your session• Alternatively, click Custom to specify a comma-separated list of sensor labels, patterns to match, or groups to retrieve
Quick Date Selection	<ul style="list-style-type: none">• A list of date ranges for the data you wish to retrieve• Click Custom to specify a Beginning and Ending Date for a custom date range in YYYY-MM-DD format
Frequency	<ul style="list-style-type: none">• Indicates the frequency of sensor data to retrieve

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The screenshot below shows the Data Editor Setup Screen with each of the default lists. In this example, there are no site aliases defined, so the first list is blank.

DMP Data Editor Setup Screen

Please Choose Data To Edit:

Site List Configuration

ak_east

Contents Custom

Sensor/Group Selection

Common (Primary pill and prec)
Temperature
Soil Moisture and Incremental Precipitation
Soil Moisture and Soil Temperature
Soil Temperature and Observed (air) Temperature
All Sensors

Custom Reload

Quick Date Selection

Current - 1 day
Current - 3 days
Current - 5 days
Current - 7 days
Current - 10 days

Custom Date Range

Frequency

All available
Daily (1st reading of the day)

☐ Suppress bogus 00:01 readings

Retrieve Data

Mail comments about this page to: orportlan4-Information-Systems-Team@usda.gov

Sponsored by: NRCS Water and Climate Center Information Systems Team

Version: tag=3.11.0.56; branch=REL_3.11; revision=8ea3868 Build Date: 2023-12-21T17:49:00.817392200Z

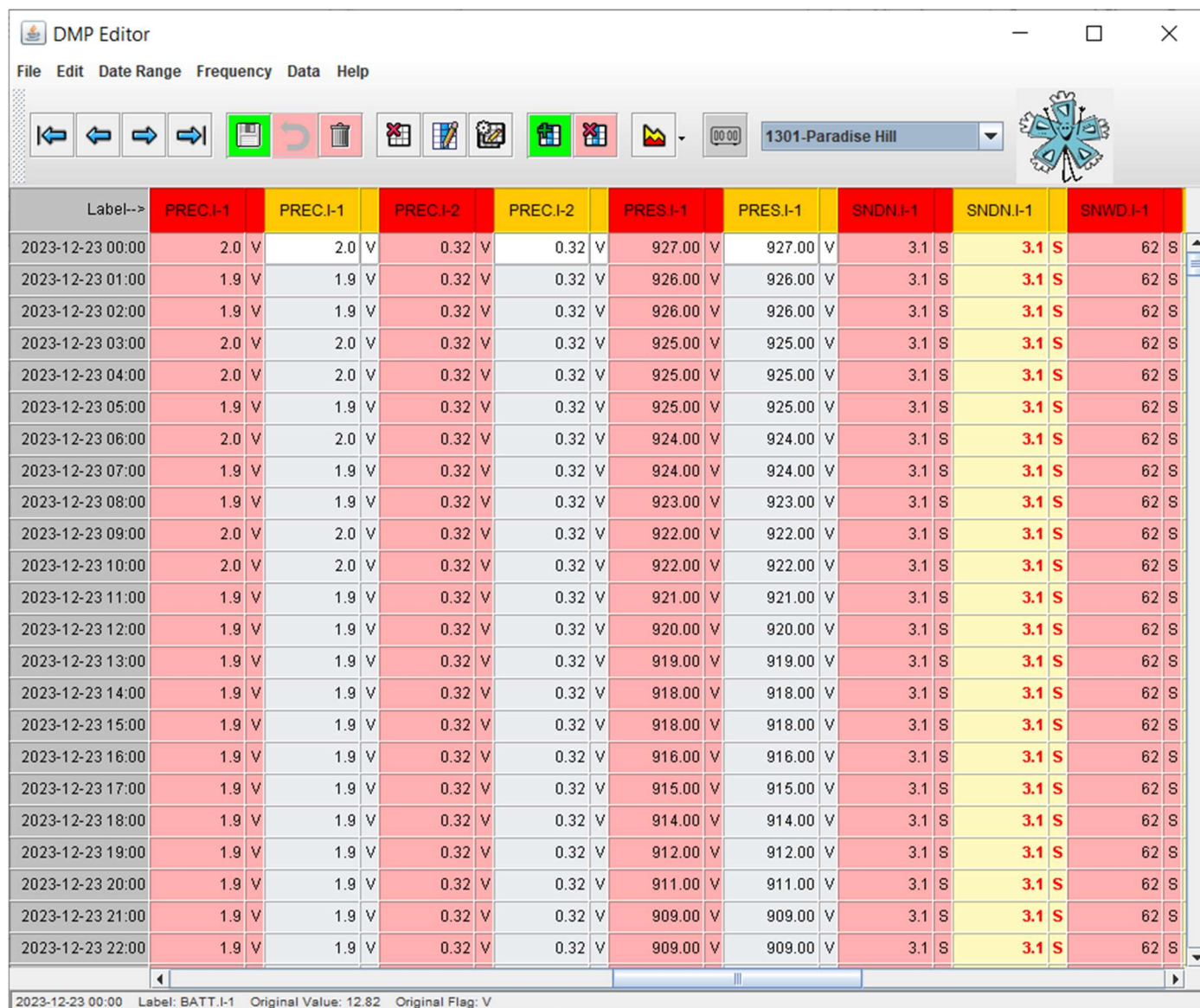
After you have entered all the selection criteria, press the **Retrieve Data** button to retrieve the data and display the DMP Editor screen.

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2. DMP Editor

When you click the **Retrieve** button on the DMP Data Editor Setup Screen, the DMP Editor window will display the first site selected. The DMP Editor screen can only show the data for a single station at a time, but you can navigate to the other sites that have been selected using the arrows on the toolbar or the drop-down list of sites.

Here is an example of what you will see in the DMP Editor window.



Label-->	PREC.I-1	PREC.I-1	PREC.I-2	PREC.I-2	PRES.I-1	PRES.I-1	SNDN.I-1	SNDN.I-1	SNWD.I-1
2023-12-23 00:00	2.0 V	2.0 V	0.32 V	0.32 V	927.00 V	927.00 V	3.1 S	3.1 S	62 S
2023-12-23 01:00	1.9 V	1.9 V	0.32 V	0.32 V	926.00 V	926.00 V	3.1 S	3.1 S	62 S
2023-12-23 02:00	1.9 V	1.9 V	0.32 V	0.32 V	926.00 V	926.00 V	3.1 S	3.1 S	62 S
2023-12-23 03:00	2.0 V	2.0 V	0.32 V	0.32 V	925.00 V	925.00 V	3.1 S	3.1 S	62 S
2023-12-23 04:00	2.0 V	2.0 V	0.32 V	0.32 V	925.00 V	925.00 V	3.1 S	3.1 S	62 S
2023-12-23 05:00	1.9 V	1.9 V	0.32 V	0.32 V	925.00 V	925.00 V	3.1 S	3.1 S	62 S
2023-12-23 06:00	2.0 V	2.0 V	0.32 V	0.32 V	924.00 V	924.00 V	3.1 S	3.1 S	62 S
2023-12-23 07:00	1.9 V	1.9 V	0.32 V	0.32 V	924.00 V	924.00 V	3.1 S	3.1 S	62 S
2023-12-23 08:00	1.9 V	1.9 V	0.32 V	0.32 V	923.00 V	923.00 V	3.1 S	3.1 S	62 S
2023-12-23 09:00	2.0 V	2.0 V	0.32 V	0.32 V	922.00 V	922.00 V	3.1 S	3.1 S	62 S
2023-12-23 10:00	2.0 V	2.0 V	0.32 V	0.32 V	922.00 V	922.00 V	3.1 S	3.1 S	62 S
2023-12-23 11:00	1.9 V	1.9 V	0.32 V	0.32 V	921.00 V	921.00 V	3.1 S	3.1 S	62 S
2023-12-23 12:00	1.9 V	1.9 V	0.32 V	0.32 V	920.00 V	920.00 V	3.1 S	3.1 S	62 S
2023-12-23 13:00	1.9 V	1.9 V	0.32 V	0.32 V	919.00 V	919.00 V	3.1 S	3.1 S	62 S
2023-12-23 14:00	1.9 V	1.9 V	0.32 V	0.32 V	918.00 V	918.00 V	3.1 S	3.1 S	62 S
2023-12-23 15:00	1.9 V	1.9 V	0.32 V	0.32 V	918.00 V	918.00 V	3.1 S	3.1 S	62 S
2023-12-23 16:00	1.9 V	1.9 V	0.32 V	0.32 V	916.00 V	916.00 V	3.1 S	3.1 S	62 S
2023-12-23 17:00	1.9 V	1.9 V	0.32 V	0.32 V	915.00 V	915.00 V	3.1 S	3.1 S	62 S
2023-12-23 18:00	1.9 V	1.9 V	0.32 V	0.32 V	914.00 V	914.00 V	3.1 S	3.1 S	62 S
2023-12-23 19:00	1.9 V	1.9 V	0.32 V	0.32 V	912.00 V	912.00 V	3.1 S	3.1 S	62 S
2023-12-23 20:00	1.9 V	1.9 V	0.32 V	0.32 V	911.00 V	911.00 V	3.1 S	3.1 S	62 S
2023-12-23 21:00	1.9 V	1.9 V	0.32 V	0.32 V	909.00 V	909.00 V	3.1 S	3.1 S	62 S
2023-12-23 22:00	1.9 V	1.9 V	0.32 V	0.32 V	909.00 V	909.00 V	3.1 S	3.1 S	62 S

2023-12-23 00:00 Label: BATT.I-1 Original Value: 12.82 Original Flag: V

The pink columns
contain the original
data

The white/gray columns
contain the current data. If
you have edit privileges, this
is the data you will edit.

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The main screen of the DMP Editor consists of three parts:

1. The table of data values
2. The DMP toolbar
3. The menu

2.1 The Table of Data Values

You can view and edit data in the table of data values. Editing data in this table is very similar to how you would edit data in a Microsoft Excel spreadsheet. Not all users have permission to edit data for all sites. If you do not have permission to edit data for a particular site, the text in the white columns will be italicized and will turn red. An annotated image of the table of data values is shown below and describes the layout of the table and other useful information.

The label (type of data). Format is Element.Duration-Ordinal. If the sensor has a height/depth, it is displayed below the label.

If you hover the mouse over a label for 1-2 seconds, a tooltip will popup with the units of the data and instrument name of the sensor.

Timestamps of the values	Label-->	PREC.I-1	PREC.I-2	PREC.I-2	PRES.I-1	PRES.I-1	SNDN.I-1	SNDN.I-1	SNWD.I-1	SNWD.I-1
2024-01-17 10:00		2.3 V	0.32 V	0.32 V	960.00 V	960.00 V	18.5 V	18.5 V	13 V	13 V
2024-01-17 11:00		2.3 V	0.32 V	0.32 V	961.00 V	961.00 V	18.5 V	18.5 V	13 V	13 V
2024-01-17 12:00		2.3 V	0.32 V	0.32 V	961.00 V	961.00 V	18.5 V	18.5 V	13 V	13 V
2024-01-17 13:00		2.3 V	0.32 V	0.32 V	961.00 V	961.00 V	18.5 V	18.5 V	13 V	13 V
2024-01-17 14:00		2.3 V	0.32 V	0.32 V	961.00 V	961.00 V	18.5 V	18.5 V	13 V	13 V
2024-01-17 15:00		2.3 V	0.32 V	0.32 V	962.00 V	962.00 V	18.5 V	18.5 V	13 V	13 V
2024-01-17 16:00		2.3 V	0.32 V	0.32 V	962.00 V	962.00 V	17.7 V	17.7 V	13 V	13 V
2024-01-17 17:00		2.3 V	0.32 V	0.32 V	962.00 V	962.00 V	18.5 V	18.5 V	13 V	13 V
2024-01-17 18:00		2.3 V	0.32 V	0.32 V	963.00 V	963.00 V	20.0 V	20.0 V	12 V	12 V
2024-01-17 19:00		2.3 V	0.32 V	0.32 V	963.00 V	963.00 V	4.1 S	4.1 S	58 S	58 S
2024-01-17 20:00		2.3 V	0.32 V	0.32 V	963.00 V	963.00 V	3.9 S	3.9 S	62 S	62 S
2024-01-17 21:00		2.3 V	0.32 V	0.32 V	963.00 V	963.00 V	3.9 S	3.9 S	62 S	62 S
2024-01-17 22:00		2.3 V	0.32 V	0.32 V	963.00 V	963.00 V	3.9 S	3.9 S	62 S	62 S
2024-01-17 23:00		2.3 V	0.32 V	0.32 V	964.00 V	964.00 V	3.9 S	3.9 S	62 S	62 S
2024-01-18 00:00		2.3 V	0.32 V	0.32 V	964.00 V	964.00 V	3.9 S	3.9 S	62 S	62 S
2024-01-18 01:00		2.3 V	0.32 V	0.32 V	964.00 V	964.00 V	3.9 S	3.9 S	62 S	62 S
2024-01-18 02:00		2.3 V	0.32 V	0.32 V	964.00 V	964.00 V	3.9 S	3.9 S	62 S	62 S
2024-01-18 03:00		2.3 V	0.32 V	0.32 V	964.00 V	964.00 V	3.9 S	3.9 S	62 S	62 S
2024-01-18 04:00		2.3 V	0.32 V	0.32 V	963.00 V	963.00 V	3.9 S	3.9 S	62 S	62 S
2024-01-18 05:00		2.3 V	0.32 V	0.32 V	963.00 V	963.00 V	3.9 S	3.9 S	62 S	62 S
2024-01-20 00:01										
2024-01-21 00:01										
2024-01-22 00:01										

The status bar shows details for the focused cell. This is useful if the original data column is hidden.

Original data column

Original flag column

Current data column

Current flag column

Suspect values can be highlighted to help these stand out for users

2.1.1 Navigating Between Cells

There are two ways to navigate between cells in the table of data values.

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1. Use the arrow keys to go left, right, up, or down. If you go left or right, the table will navigate to the next *current* data column and will skip over the *original* data columns.
2. Press *Enter* on the keyboard to go down to the next cell.

If you are at the end of a column and you press *Enter* or use the down arrow key, the table will navigate to the top of the next "current" data column. If you are at the end of the last column, the next cell that the table will navigate to will be the top of the first "current" data column.

2.1.2 Editing Data

Cells are editable if you have permission to edit data for that station. You can tell if the cells are editable if the text in the "current" columns is black and not italicized. If the text in the "current" columns is red and italicized, the data is not editable.

The flags for the data values cannot be edited directly. Here are the rules that determine how the flags are set based on how the data is edited.



- If a value is edited to a blank, the flag will be set to "S" (except if the original value and flag are blank in which case the flag will be set to blank also)
- If an existing value is edited to the same value as the original value, the flag will become valid or "V" if the original flag is "S". If the original flag was something other than "S", the flag will become the same as the original flag. The following are a few different ways for changing an "S" flag to a "V" flag:
 1. You can double-click on the cell for the value and then press [Enter].
 2. You can do a mass edit of one or more values by doing a "=+0.0" mass edit operation
 3. You can navigate to a cell (using arrow keys or by single-clicking on it) and type the letter 'v'. This is a shortcut for changing the value to "V" if the flag is "S" and then navigating to the next cell. If the flag is not "S", the value will not be edited, but the DMP Editor will still navigate to the next cell.
- For all other edits, the flag will become "E".

2.1.3 Selecting Data

You must select data in DMP Editor to execute the various operations that can be done on the data such as Mass Edits and graphing. These operations will be covered in other sections. In this section, we'll cover how to select cells. Selecting cells in DMP works like other applications you are probably familiar with such as Excel. The table below describes the various ways to select data in DMP.

Selection Operation	How to do it
Select a single cell	Click in the cell
Select an entire column	Click on the column header of the column to select
Select multiple columns	Click on the first column header and then CTRL+click the other columns
Select a range of cells in a column	Click on the first cell to select, then drag up or down to select the other cells in the range - OR - click in the first cell to select, then SHIFT+click in the last cell to select. Alternatively, click SHIFT+PageUp/Down to select a page of cells at a time.

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Selection Operation	How to do it
Add cells to current selection	Hold down CTRL and click on the cells to add to the selection.
Select cells from multiple sites	Select the cells on the first site, then click the Keep Currently Selected Cells button in the toolbar and navigate to the next site you want to select cells for. Next, select the desired cells and press the same button again. Continue the same steps for all the sites you want to select data from. 
Clear all selected cells	Click the Clear Selected and Keep Selected Cells button. 

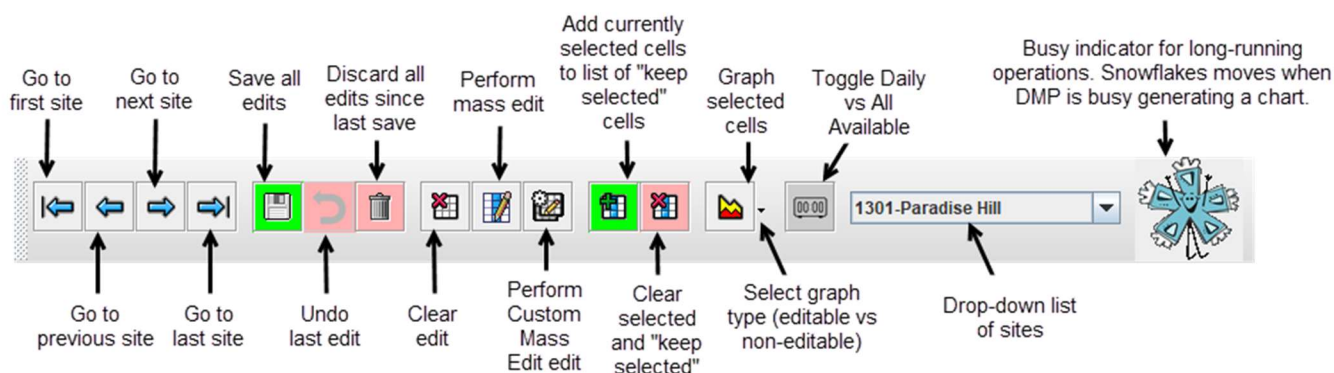
2.1.4 Copy & Paste Operations

You can copy the data in the DMP table of data values to the clipboard by selecting cells and then pressing CTRL+C. To paste cells, select the cells to paste into (or just select the cell where you want to start pasting data into) and then press CTRL+V.

Copy and paste support works best when selecting a contiguous set of cells for a single column to copy from or paste into. Copy and paste operations work within DMP and between Microsoft Excel and DMP.

2.2 The DMP Toolbar

The DMP Toolbar contains buttons that allow you to navigate between stations, save or discard edits, print, select cells, and graph data. The image below shows the toolbar with a description of each button.



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2.3 DMP Operations

2.3.1 Navigating between stations

Navigating between stations can be done in two ways.

1. Use one of the four navigation buttons on the toolbar
2. Use the drop-down list of sites in the toolbar. The drop-down list allows you to jump to a specific site immediately.

It is important to note that when the DMP Editor window is first displayed, only the first site that has been selected is guaranteed to be loaded. All the other sites are loaded in the background. The time to load the remaining sites will depend on the amount of data that has been selected for retrieval.

The navigation buttons and the drop-down list will not allow navigating to a site that has not been loaded yet. To determine if a site is loaded or not, hover the mouse over the name of the site in the drop-down list of sites. If the site name is grayed out, it has not been loaded yet and you will not be able to select it.

2.3.2 Saving and Discarding Edits

You can save all edits that have been made since the last save by clicking on the **Save all edits** button on the DMP toolbar or by using the keyboard shortcut key CTRL+S. You can undo all edits that have been made since the last save by pressing the **Discard all edits since last save** button (the trash can icon).

2.3.3 Mass Editing Data

The DMP Editor has a mass edit feature. This means you can edit multiple values at the same time. There are two ways to use the mass editing feature – the standard Mass Edit and a custom Mass Edit.

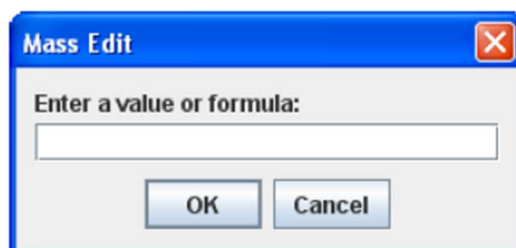
2.3.3.1 Mass Edit

The Mass Edit feature can set values to some fixed number or can perform simple calculations on the values such as adding, subtracting, multiplying, or dividing the values by some constant.

To use the Mass Edit feature, first select all the cells that you want to perform a Mass Edit on. Then click the **Mass Edit** button on the DMP toolbar.



When you click the **Mass Edit** button, you will see the following dialog:



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To set all the cells that were selected to a particular value, enter the value in the box and press **OK**. To apply an operation to the selected values, enter one of these accepted formulas:

Mass Edit Formula	Description
=n	Sets the values to the number n (this is the same as just entering a number).
=+n	Adds the number n to each value.
=-n	Subtracts the number n from each value.
=*n	Multiplies each value by the number n.
=/n	Divides each value by the number n.

NOTE: In the table above, n represents a floating-point number.

2.3.3.2 Custom Mass Edit

Another way to mass edit values is to use the Custom Mass Edit functionality of the DMP Editor. Custom Mass Edit allows you to edit values for one or more sites. You can also edit where the values are for certain labels and change values that meet some condition for the value and/or the flag.

You will see the Custom Mass Edit screen when you select the **Custom Mass Edit** button on the toolbar.



DMP ignores any cells that are selected when the button is clicked and instead uses the custom criteria defined within the modal to determine the data to update. If you'd like to make sure no cells are selected, simply click the **Clear Selected and Keep Selected Cells** button on the toolbar before you click the **Custom Mass Edit** button.

The "Custom Mass Edit" screen is shown on the following page:

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The screenshot shows the 'Custom Mass Edit' dialog box. It has two main columns: 'Site(s):' on the left and 'Sensor(s):' on the right. The 'Site(s):' column contains a list of seven sites: 1189-American Creek, 1093-Chisana, 963-Granite Crk, 2222-Gulkana River, 1275-Jack Wade Jct, 1096-May Creek, 1301-Paradise Hill, and 2080-Tok. Below this list are two buttons: 'Clear' and 'Select All'. The 'Sensor(s):' column has a text input field for 'Sensor(s):', followed by a text input field for 'Enter a value or formula:', a dropdown menu for 'Value Condition:' (currently set to 'None'), and a section for 'Flag Conditions:' with checkboxes for 'V', 'E', 'S', 'Null', and 'Other'. At the bottom of the dialog are 'Cancel' and 'Apply Edits' buttons. Annotations with arrows point to various fields: 'Sensor(s):' (Enter comma separated list of sensor labels...), 'Enter a value or formula:' (Enter mass edit value or formula...), 'Value Condition:' (Select the condition of the value or formula), 'Flag Conditions:' (Checks the flags the value or formula is applied for), 'Clear' (Unselect all sites above), 'Select All' (Select all sites in the list above), and 'Apply Edits' (Click this button to mass edit the selected sites and sensors). A red warning message is displayed in the center: 'WARNING: This operation will modify all values whose sensor label matches the pattern above for all the sites selected.'

Enter comma separated list of sensor labels to apply value/formula to. The sensor labels can include the "*" and "?" wildcard characters.

Enter mass edit value or formula. This field accepts the same format as the regular mass edit.

Select the condition of the value or formula

Checks the flags the value or formula is applied for

Unselect all sites above

Select all sites in the list above

Click this button to mass edit the selected sites and sensors

WARNING: This operation will modify all values whose sensor label matches the pattern above for all the sites selected.

The Custom Mass Edit window displays a list of all that stations that are viewable in the current session. You can select one or more of the sites by clicking on the site in the list. To select all sites, click the **Select All** button. Click the **Clear** button to de-select all sites.

The *Sensor(s)* field allows you to specify a comma separated list of sensor labels you'd like to apply to the mass edit. Any data value that is currently filtered in the DMP Editor and whose label matches any of the sensor label patterns entered will be edited using the Mass Edit formula or value given when you click **Apply Edits**.

Each sensor label pattern can contain the '*' or '?' wildcard characters and will match against the sensor label that is displayed in the column header for the data value. The '*' wildcard character matches 0 or more characters and the '?' wildcard character matches any single character.

In addition, the syntax for specifying a sensor with a given height/depth value is supported by specifying a colon ':' after the sensor label followed by the height/depth value.

For example, if you wanted to match all sensors at a depth of 2 inches, you would use the sensor label pattern '*:-2'. If you wanted to match all sensors that begin with 'SMO' and have a depth of 2 inches, you would use the pattern 'SMO*:-2'. If you wanted to select sensors that begin with 'SMO' for all depths, you would use the pattern 'SMO*'.

The *Value Condition* and *Flag Conditions* fields allows you to apply a "conditional" mass edit based on the value and/or the flag of the values. For example, if you only want to apply the Mass Edit to values that are less than 0 and have a "V" flag, select **Less Than** in the *Value Condition*, enter "0" in the textbox to the right of the dropdown list, and check the box for only the "V" flag in the *Flag Conditions* section.

The Custom Mass Edit feature works well when used in combination with the date range and or frequency filters. These filters hide values that do not match the filter from the table of data values as well as from operations such as the

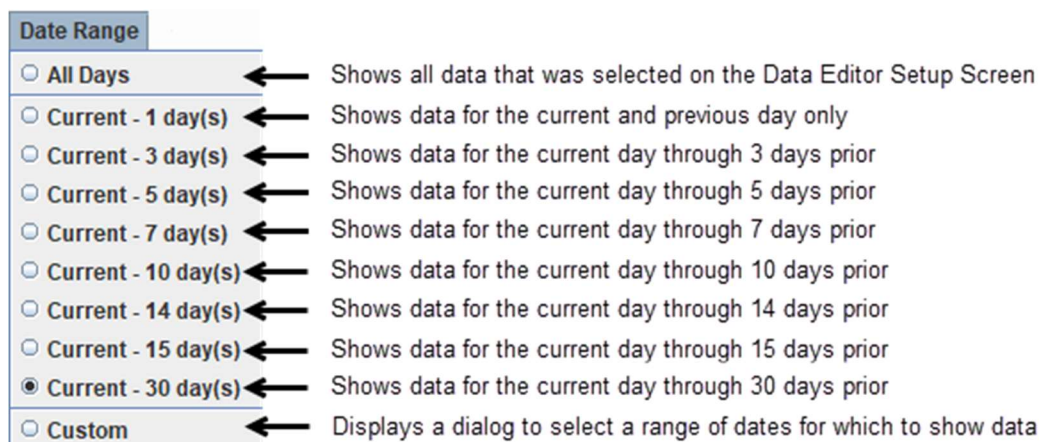
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Custom Mass Edit. You can filter the data that needs to be "mass" edited, then do a custom mass edit. This will ensure that only the data that is visible in the table of data values and matches the sensor label pattern will be edited.

2.3.4 Filtering Data by Date Range

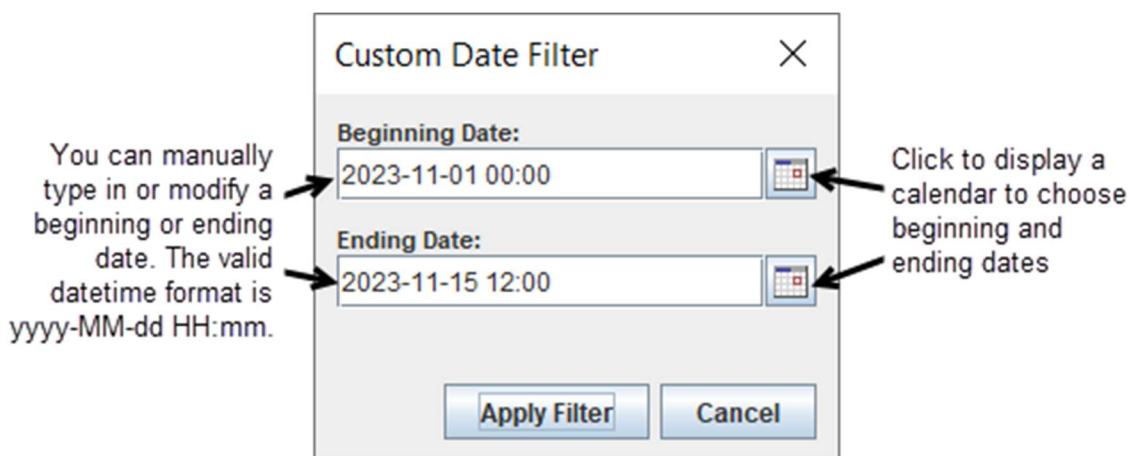
One of the menus of the DMP Editor is the *Date Range* filter menu. This menu has options for filtering the data in the table of data values for all stations by date range. You can filter data to a custom date range by either using a pre-defined date range or by creating as a custom date range.

A sample date range menu is shown below with descriptions of each of the option next to each menu item.



Note: The middle section of the menu (the items beginning with "Current - ") will be different depending on the data that you select on the Data Editor Setup Screen. There may be more "Current - " menu items, fewer, or none. If you selected a Custom date on the Data Editor Setup Screen, there will be no "Current - " menu items, and in its place will be a single menu item that has the custom date range that was selected.

If the Custom option is chosen, the dialog that will be displayed is shown below. The "Custom" option allows setting the starting and ending times also.

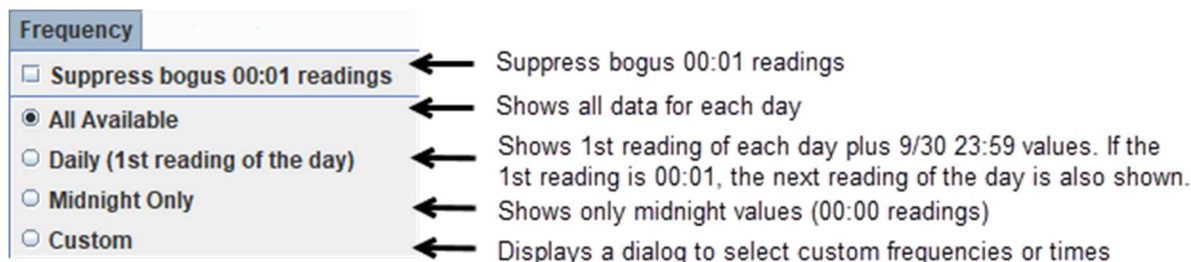


After the beginning and ending dates are set in the dialog, select the **Apply Filter** button to filter the data. To undo the date range filtering, select the **All Days** item in the *Date Range* menu.

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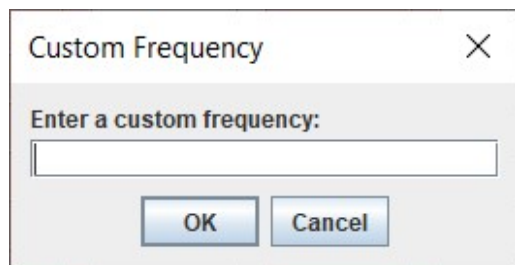
2.3.5 Filtering Data by Frequency

The Frequency filter menu has options for filtering the data in the table of data values for all stations by frequency or time. There are some pre-defined frequencies that can be selected as well as a custom frequency option that allows you to specify a custom frequency or list of times to filter to.



The setting for "Suppress bogus 00:01" readings can be toggled by clicking on that menu item. If you select that option, the rows with 00:01 timestamps will be hidden.

If you select the "Custom" frequency option, a dialog box will prompt you to enter a custom frequency. This dialog is shown below:



The table below lists possible frequencies that can be entered into the custom frequency dialog.

Frequency	Description
.1	First reading of the day.
.01	First reading of the day plus the next reading of the day if the first reading of the day is a 00:01 reading. Also, any values for 09/30 23:59 are also displayed.
.n	A dot followed by a number n will filter the values to show the first n readings per day where n is an integer between 1 and 23.
A time in the format HH:mm	Entering a time will show only the records whose time equals the time entered.
A comma separated list of times in the format HH:mm	This feature allows you to filter the records to show only selected times. For example, if you wanted to see only 00:00 and 23:59 records, you would use a frequency of "00:00,23:59".

2.3.6 Exporting Data

The DMP Editor allows you to export data to comma (.csv) or tab (.txt) delimited files. The data that is exported is the same data that is visible. This means that for any of the data that has been filtered using the date or frequency filters,

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only the data that matches those filters will be exported. You can export data for a single station or for all stations that are in the current session.

To export data for a single station, navigate to that station in the DMP Editor using the navigation buttons on the DMP toolbar or by selecting the site from the drop-down list of sites. Then go to the *File* menu and select **Export**. You will be prompted with an *Export File As* dialog to save the file. The dialog will have a default name for the file that will be the site number followed by the site name. At the bottom of the *Export File As* dialog, there will be a drop down where you can select the file type to export as. You can select from *Tab delimited file (.txt)* or *Comma separated file (.csv)*. Click **Save** to export the data to the file.

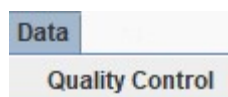
To export data for all sites that are loaded into the current DMP Editor session, go to the *File* menu, and select the *Export All* option. After selecting the option, you'll be prompted with the following dialog that asks whether you would like to export the data to .csv or .txt files:



After you click **Export Format**, you'll be prompted to select a directory where the files will be exported to. After you select a directory, click **Open** to export the data. There will be one file created for each site that is loaded into the current DMP Editor session. The files will be named with the site ID followed by the site name.

2.3.7 Quality Control Tools

The DMP Editor has tools for doing some basic quality control checks. These tools are available on the 'Quality Control' screen. Access this screen by clicking on the 'Quality Control' menu item of the 'Data' menu.



You can run several quality control checks. These checks include:

- Flag values that are null (blank values)
- Flag values that are less than a specified value
- Flag values that are greater than a specified value
- Flag decreases in values (a value is flagged if it is less than the previous value)
- Flag suspect values (values with a flag of "S")
- Flag if an Oct 1, 00:00 value is not 0.0 (this is primarily for ensuring that precipitation values for the beginning of the water year are 0.0).

The quality control checks can be applied to one or more of the stations that have been loaded into DMP and the user can specify the sensors to apply the checks to.

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The "Sensors" field allows you to specify a comma separated list of sensor labels to apply the quality control checks to. Each sensor label pattern can contain the '*' or '?' wildcard characters and will match against the sensor label that is displayed in the column header for the data value. The '*' wildcard character matches 0 or more characters and the '?' wildcard character matches any single character.

In addition, the syntax for specifying a sensor with a given height/depth value is supported by specifying a colon ':' after the sensor label followed by the height/depth value.

For example, if you wanted to match all sensors at a depth of 2 inches, you would use the sensor label pattern '*:-2'. If you wanted to match all sensors that begin with 'SMO' and have a depth of 2 inches, you would use the pattern 'SMO*:-2'. If you wanted to select sensors that begin with 'SMO' for all depths, you would use the pattern 'SMO*'.

The 'Quality Control' screen is shown below.

The screenshot shows the 'Quality Control' window with the following components:

- Sites:** A list of sites with '1189-American Creek' selected. Below the list are 'Clear All' and 'Select All' buttons.
- Sensors:** A text input field containing an asterisk (*), a 'Help' button, and several checked checkboxes: 'Flag NULL values', 'Flag values less than' (with input '0.0'), 'Flag values greater than' (with input '150.0'), 'Flag decreases in values', 'Flag suspect values', and 'Flag if Oct. 1 00:00 is not 0.0'.
- Results:** A table with 4 columns: SiteName, Date, Label, and Problem. It contains 4 rows of data for '1189-American Creek' showing 'Decreasing value' problems. Below the table are 'Print Results', 'Clear Results', and 'Search' buttons.

SiteName	Date	Label	Problem
1189-American Creek	2023-12-24 13:00	BATT.I-1	Decreasing value
1189-American Creek	2023-12-24 20:00	BATT.I-1	Decreasing value
1189-American Creek	2023-12-25 07:00	BATT.I-1	Decreasing value
1189-American Creek	2023-12-25 12:00	BATT.I-1	Decreasing value

To perform quality control checks, do the following:

1. Click on the sites to check
2. Enter the sensors to check
3. Select the quality control checks to perform and enter lower/upper bounds

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4. Click **Search** button to display the results
5. Once the results are displayed, you can click on a row in the results table to select that record in the DMP Editor
6. Use the "Print Results" button to print the entire table of results

The Quality Control feature operates on the data that is currently visible in the DMP Editor. To quality control all data, make sure that there aren't any date or frequency filters applied and that all the data are visible in the DMP Editor.

2.3.8 Changing the Appearance of the Data Table

The Data menu also provides a way to customize the appearance of the Data Table. These options are intended to allow the user to focus their attention on those data scenarios requiring review to stand out better. The options may also be used to remove unnecessary columns to fit more sensors within the view.

A description of each option is provided below:

Data		
Quality Control		
<input checked="" type="checkbox"/> Highlight Suspect Values	Ctrl+Shift-S	Toggle to highlight/unhighlight cells with Suspect values
<input checked="" type="checkbox"/> Highlight Non-Midnight Rows	Ctrl+Shift-M	Toggle to highlight/unhighlight the non-midnight rows. When highlighted, the midnight rows are white to improve readability.
<input type="checkbox"/> Hide Original Columns	Ctrl+Shift-C	Toggle to show/hide the Original data columns (flag and value)
<input type="checkbox"/> Hide Valid Flags	Ctrl+Shift-V	Toggle to show/hide the Valid flags (both Original and Current)
<input type="checkbox"/> Hide Unedited Original Values	Ctrl+Shift-O	Toggle to show/hide unedited Original Values

These options will retain their settings within the current DMP session when changed via the menu. When DMP is closed, the settings will revert to their default. The default settings for these options may be changed via the [DMP Configuration Editor](#).

2.3.9 Moving, Deleting, or Merging Bogus (00:01) Records

DMP generates 00:01 records when no midnight data is stored for a given day. Once you enter data into the 00:01 record and save it via DMP, the 00:01 record is stored into the database. This 00:01 record can be managed within DMP. DMP allows three operations for the 00:01 record. The record can be moved, deleted, or merged.

Moving a Bogus Record to Midnight

If a 00:01 record exists and no midnight record exists for the same day, you can right-click anywhere on the row of the 00:01 record and a popup menu will display as shown on the following page:

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The screenshot shows the DMP Editor interface with a table of data. A right-click context menu is open over the row for 2024-01-20 00:01. The menu options are: "Move 00:01 record to 00:00 record", "Delete Bogus Value (00:01 record)", and "Merge 00:01 record into 00:00 record".

Right-clicking on a row with a 00:01 time will display a popup menu with options

If there is a 00:01 reading and no corresponding 00:00 reading, the 00:01 reading can be moved to the 00:00 time by selecting this option

Label-->	PREC.I-1	PREC.I-1	PREC.I-2	PREC.I-2	PRES.I-1	PRES.I-1	SMS.I-1	SMS.I-1	SMS.I-1
2024-01-18 00:00	4.0 V	4.0 V	1.48 V	1.48 V	1005.00 V	1005.00 V	0.0 V	0.0 V	4.3 V
2024-01-20 00:01	3.9 E	3.9 E							
2024-01-21 00:01									
2024-01-22 00:01									

You can click the "Move 00:01 record to 00:00 record" to change the time of the 00:01 record to 00:00. You must still click **Save** to permanently save the changes to the database.

Deleting or Merging a Bogus Record

If a bogus record exists (a 00:01 record) and a 00:00 record also exists, the 00:01 record can be deleted or the contents of the 00:01 record can be merged into the 00:00 record. Right-click on a 00:01 record to display a popup menu that shows the actions you can perform. Merging means that all the values from the 00:01 record (except those that are empty) will be copied from the 00:01 reading into the 00:00 reading and the 00:01 records will be deleted. The diagram below shows the popup menu and the actions that are available when a 00:01 and a 00:00 reading exists for a given day. Just like a regular edit, the changes are not made in the database until you click **Save** in the DMP Editor toolbar.

The screenshot shows the DMP Editor interface with a table of data. A right-click context menu is open over the row for 2024-01-18 00:01. The menu options are: "Move 00:01 record to 00:00 record", "Delete Bogus Value (00:01 record)", and "Merge 00:01 record into 00:00 record".

If a user right-clicks on a 00:01 record and there exists a 00:00 record for the same day, a popup menu will display with two options enabled. The user can delete the 00:01 record, or the user can "merge" the 00:01 record into the 00:00 record. Merging copies all the values from the 00:01 record and deletes the

Label-->	PREC.I-1	PREC.I-1	PREC.I-2	PREC.I-2	PRES.I-1	PRES.I-1	SMS.I-1	SMS.I-1
2024-01-18 00:00	4.1 V	4.1 V						
2024-01-18 00:01	4.1 E							
2024-01-19 00:00	4.0 E							
2024-01-20 00:01								
2024-01-21 00:01								
2024-01-22 00:01								
2024-01-23 00:01								

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3. Graphing Data

The DMP Editor has a graphing capability that can be used for viewing and/or editing data. You can graph any data that can be selected in the DMP Editor. A single graph can contain data from one or more stations. The amount of data that can be graphed is only limited by the amount of memory available.

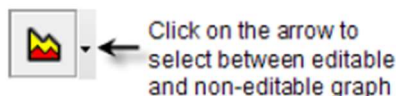
3.1 Selecting Data to Graph

Selecting data for graphing is no different than selected data for editing. See the [Selecting Data](#) section for the DMP Editor for information on selecting data.

Note: When selecting data for graphing if data is selected from more than one column (regardless if the column is from the same site or another site) the data must have at least one timestamp that is the same between all the columns selected. The graphing capabilities only graph data that have the same timestamps when multiple columns are selected.

3.2 Displaying the Graph

To create a graph, first select the data to be graphed, then click on the graph button. The graph button is on the DMP Toolbar and is displayed below.



There are two options for the graph:

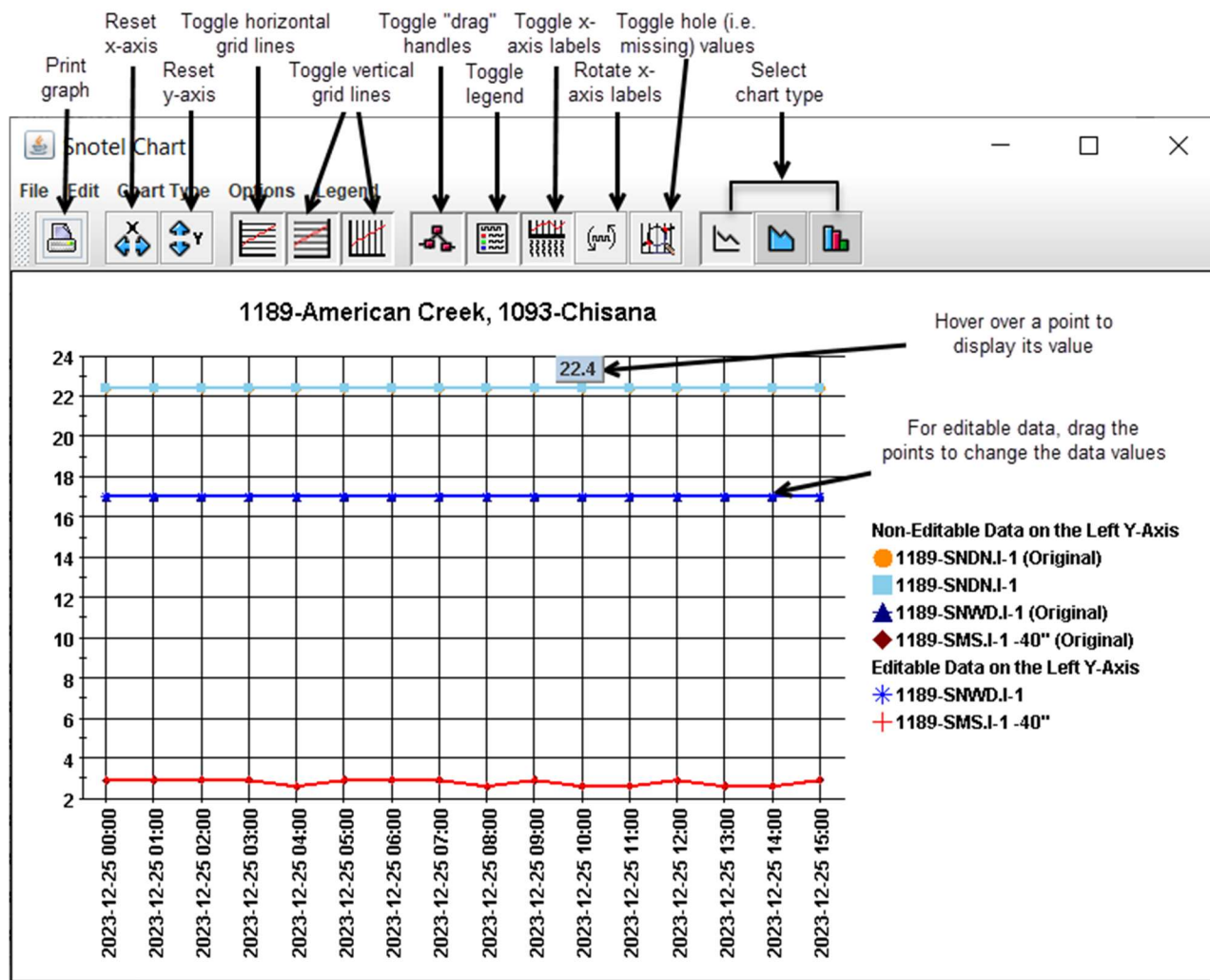
1. By default, the graph will be the editable graph, which allows editing by dragging points on the graph if the underlying data is editable.
2. There is also a non-editable graph that will not allow editing of data, even if the underlying data is editable. The purpose of the non-editable graph is to prevent accidental edits of data if you just want to view the data and have no intention of editing data on the graph.

Clicking the graph button will display a new window with the graph containing the data you selected. More than one graph can be displayed at the same time. To display another graph, select another set of data and press the graph button.

Note: Do not edit the same data on multiple graphs as the data between the graphs will not be synchronized.

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Here is an example of the graph table:



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3.3 Graph Operations

The graph toolbar contains many options for determining how the graph will look. It also contains a button for printing the graph. All the options are also available from the menus. This section covers several graph operations that cannot be done from the toolbar.

3.3.1 Editing

The graph can contain editable and non-editable data. The legend for the graph will indicate which of the data series are editable, and which are not. You can edit series by dragging the points on the graph up or down. As you drag the point, you will see the value of the point at the current position. When you edit a value on a graph, the change is immediately reflected in the DMP Editor's table of values.

(Note: If a value is edited in the DMP Editor table of values while a graph is displayed, the graph will not update to reflect the edit, but changes in the graph will be updated in the table of values).

3.3.2 Zooming and Scrolling

If you have a lot of data on the graph, you may want to zoom into a particular region or scroll the graph up, down, or to either side. To zoom into a region, hold down the Shift key and drag a box around the area you want to zoom into, then release the mouse. When you release the mouse button, the graph will zoom into the selected region. You can repeat the process to achieve the desired zoom level. To scroll the graph, hold down the CTRL key and drag the graph in the direction that you want to scroll it. To reset the graph, press the letter R key.

3.3.3 Resizing the Graph

You can resize the graph by dragging any of the corners of the graph window. You can resize the graph to fit the entire screen by hitting the maximize button on the top-right of the title bar.

3.3.4 Changing the Title of the Graph

If you are printing or saving a graph, you may want to change the title of the graph. You can do this by selecting "Set Chart Title..." from the "Edit" menu. You will then be prompted for a new title.

3.3.5 Exporting a Graph as a JPEG Image

You can export a graph to a JPEG image by selecting "Save As JPEG" from the File menu. The size of the image will be based on the size of the graph window when the "Save As JPEG" menu item is selected.

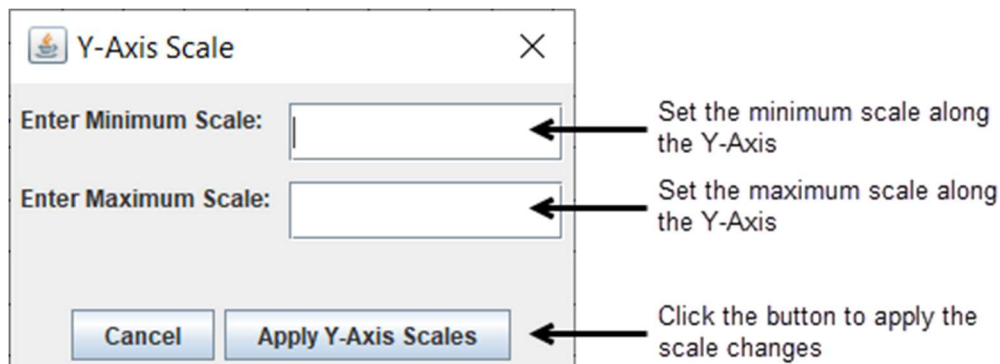
3.3.6 Printing a Graph

You can print a graph by clicking the button on the graph toolbar that has the icon of a printer or by selecting the "Print" menu item from the File menu. You can preview the graph before it is printed. The preview screen will allow the user to specify margins and other page format options.

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3.3.7 Set Y-Axis Scale

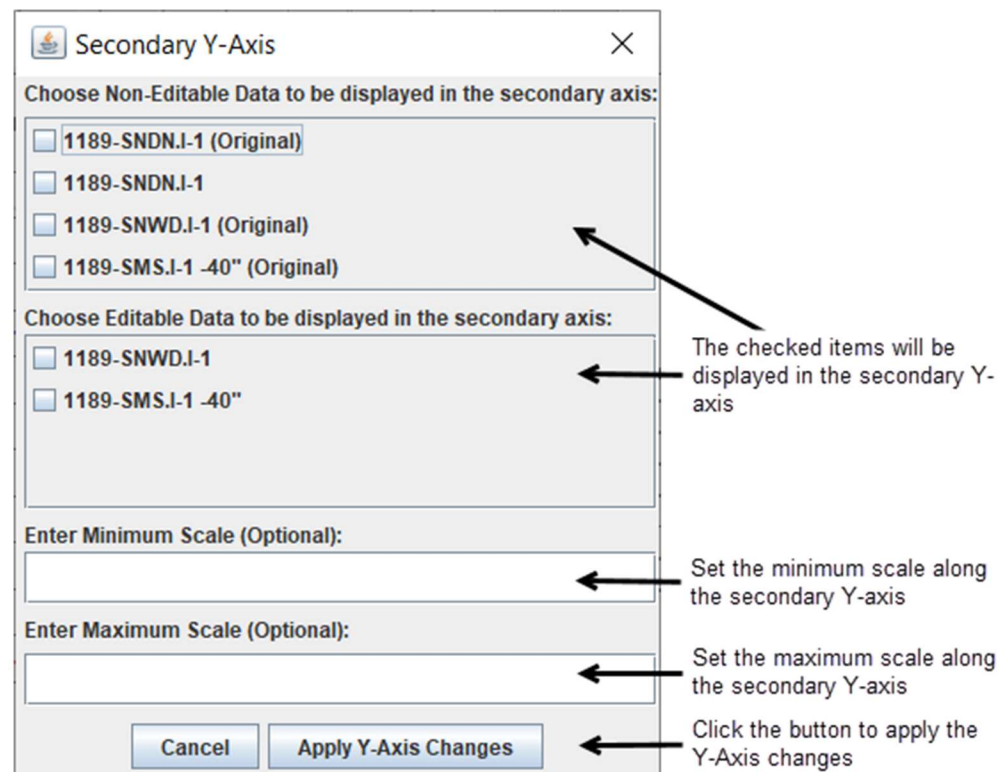
You can set the Y-Axis scale by selecting the **Set Y-Axis Scale** menu item from the *Options* menu. After you select Set Y-Axis Scale, this window is displayed:



To change the Y-Axis scale, enter the minimum and maximum Y values for the scale in the dialog and click the **Apply Y-Axis Scales** button.

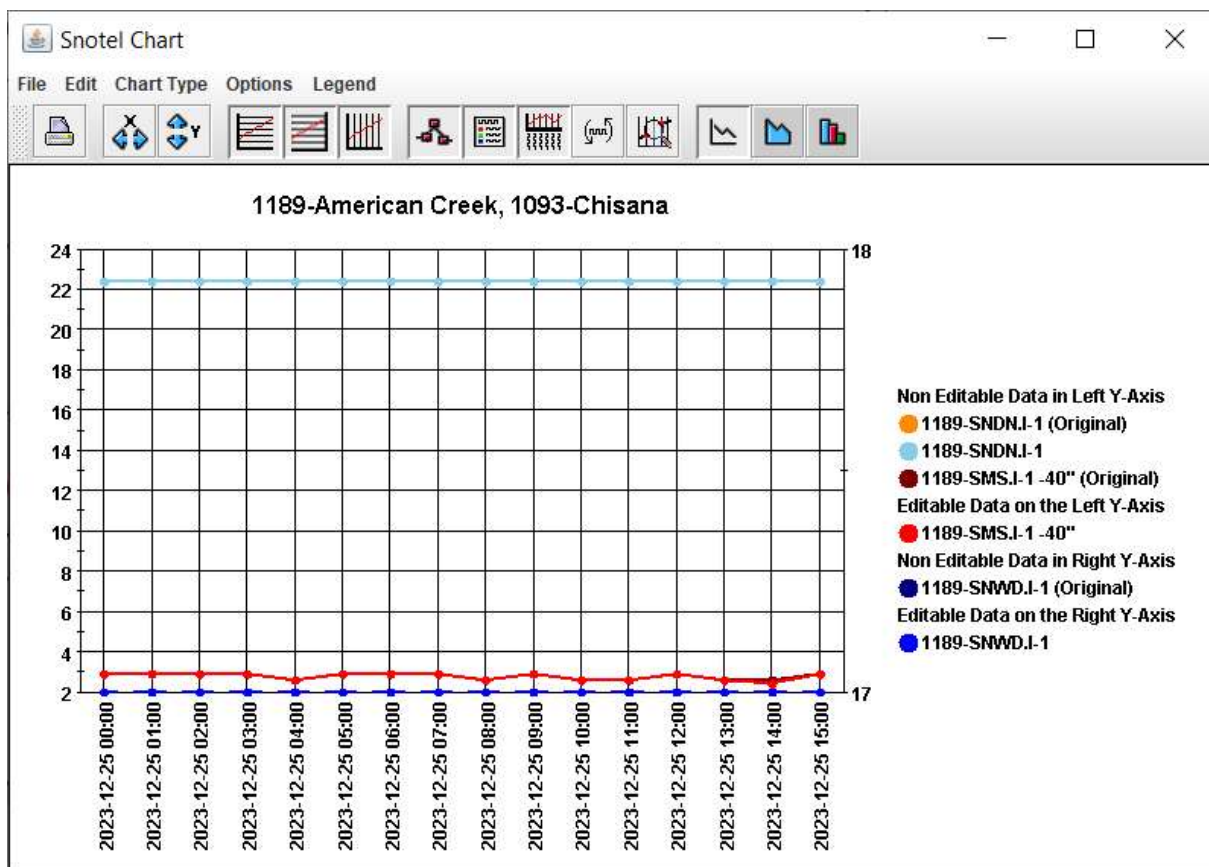
3.3.8 Add a Secondary Y-Axis

If the graph is plotting multiple series of data and the units and/or magnitudes of the values for each series differ significantly, you may want to add a secondary Y-Axis to plot data in a meaningful way. To set a secondary Y-Axis, click on the "Options" menu and then select the "Set Secondary Y-Axis" menu item. After clicking on the menu item, the following dialog will pop up to allow you to choose which series to plot on the secondary Y-axis.



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The following graph is an example where there is a secondary Y-Axis defined. The series on the secondary Y-axis grid are the series that have the dashed lines.

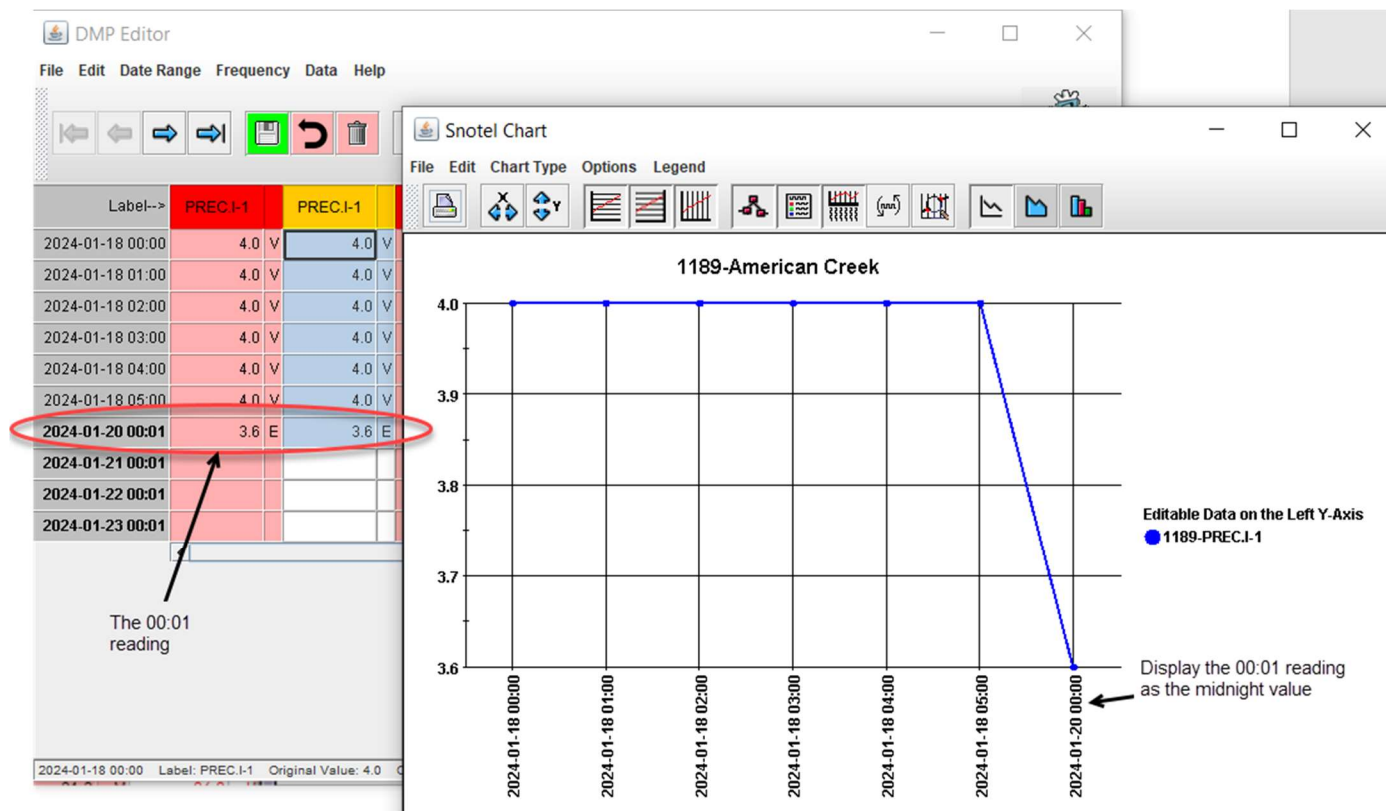


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3.4 Graph Data Rules

3.4.1 Graphing of 00:01 Values

Values with timestamps of 00:01 are always plotted as midnight values (00:00). See the example below:



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If both the 00:00 and the 00:01 readings exist for the same day for the same station and element, then only the 00:00 value will be displayed in the chart and the value at 00:01 will be ignored. See the example below:

