

2.1.8 Addendum

Since the release of DUMPStat 2.1, we have implemented several new features that will increase your control over statistical settings and display options. These changes to DUMPStat are described below, with the appropriate page in the printed User's Guide referenced where applicable. 2.1 documentation omissions and corrections have also been listed.

If you have already have the User's Guide that came with DUMPStat 2.1, we encourage you to mark the information changes and to keep the addendum with the original document.

New Statistical Options

Refer to **Statistical Options** on page 59 of Chapter 6, The Settings Menu.

There are three new items found on Settings>Statistical Options.

Prediction limit alpha

Adjustable automatic outlier screening

Average dilutions option

Statistical Options

Sorting Order of Output: Order by Constituents

Verification Resampling Plan: Pass 1 of 1

Rare Event Statistics: Nonparametric

Background Samples (Minimum): 4

Control Chart Factors: 4.5 [< 12 samples]
4 [>= 12 samples]

Begin CUSUM calculation: During Background

Prediction Limit Alpha: Limit to .01

Confidence Limit Shown on Graphs: Upper Confidence Limit

Base Confidence Limits on up to 4 of the last samples

Outliers in Background:

Enable Manual Outliers:

Perform Automatic Screening: If > 25% detects

Enable Manual Reporting Limits:

Identify Historical Trends:

Average Dilutions:

OK Cancel Defaults Help

Prediction Limit Alpha

The alpha value represents the false positive rate or Type 1 error rate, and is used to calculate the prediction limits in the Intra-Well (and Sublist) Prediction Limits analyses. You may choose “Limit to 0.01” or “Use calculated value.”

- ▶ Select “Use calculated value” to have DUMPStat always use the calculated value for the Prediction Limit Alpha.
- ▶ Select “Limit to 0.01” if you would like the calculated value to be used only if it is lower than 0.01. If it is higher than 0.01, DUMPStat will use 0.01 as the alpha value. This is the default setting for this option.

Outlier Screening

This option affects the following analyses:

- ▶ Up vs. Down Prediction Limits
- ▶ Intra-Well Control Charts and Prediction Limits
- ▶ Intra-Well Sublist Control Charts and Prediction Limits
- ▶ Surface Water Monitoring
- ▶ Air Monitoring

By default, these analyses automatically check for outliers when the detection frequency is above 25%. Alternatively, you may choose whether to screen for outliers above 50%, always, or never. Click on the appropriate choice in the list box.

Average Dilutions

Labs typically have to re-analyze samples at different dilution levels when looking for very low concentrations of some constituents. This leads to multiple samples on the same day for the same constituent for a particular sample point. If the constituent is present in relatively small amounts, it may have several nondetect values that have relatively large detection limits due to a high dilution factor. In this situation, it is

unhelpful to average all of the reported values because the nondetects in the diluted samples do not give an accurate indication of the true concentration in the sample.

The Statistical Options dialog has a new setting called Average Dilutions. By default, this option is enabled. If it is disabled, DUMPStat will apply the following rules:

- If there are detects and nondetects on the same day, nondetects with reporting limits higher than the highest detected value will be ignored.
- If there are only nondetects, the lowest nondetect value will be used, and the higher ones will be discarded.

Click on the associated checkbox to have DUMPStat average same-day samples. To revoke this option, click again and the check mark will disappear.

The Average Dilutions setting will be displayed on Table 1 (Statistical Options) of Site>View Site Settings.

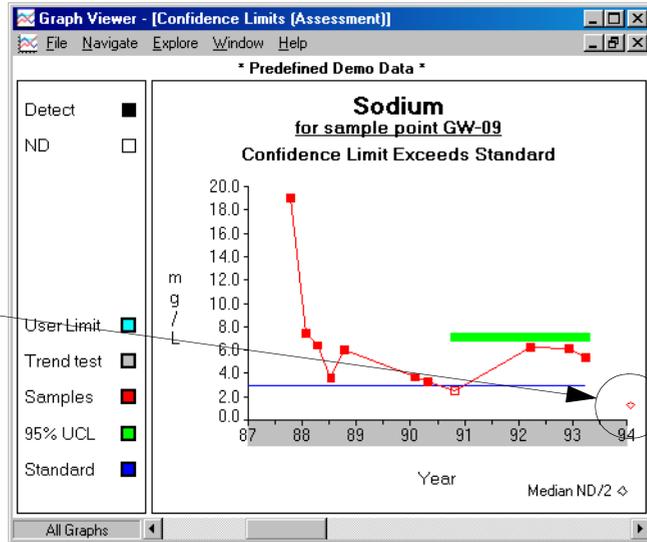
<**AverageDilutions**> can also be used as a field code to be placed in table titles and as a header for printing output. This field is replaced with one of two user-supplied phrases depending on whether this option has been enabled or not. The table title will display your first phrase if the box is checked, and your second phrase if it is unchecked.

Refer to Field Codes (Program Options>Table Titles) on page 68 of Chapter 6, The Settings Menu. Also see Field Codes (Perform Analyses>Change Header) on page 178 of Chapter 10, The Functions Menu.

Median Reporting Limit

This is a new feature of the Graph Viewer that allows you to see the median reporting limit used in certain calculations.

The median reporting limit is shown as a diamond. In this case it is divided by 2, as noted under the x-axis.



The median reporting limit is used in cases of low detection frequency where the 'nonparametric' option has been selected for Rare Event Statistics in Statistical Options. For prediction limits, time series, and control charts, the median value of the nondetects is displayed. For confidence limits, surface water, and air monitoring analyses, half the median value is displayed. The limit is indicated on the right-hand side of the graph by a small diamond, and labelled beneath the x-axis. Note that the nondetects are plotted on the graph at their lab values, but the median (or median/2) is used in the statistical calculations.

Manual Reporting Limits

Manual reporting limits can be set and/or enabled by going to Constituents > Set Manual Reporting limits. They can also be enabled on Settings > Statistical Options.

Enable Manual Reporting Limits:

If you are using manual reporting limits for your nondetects (Constituents > Set Manual Reporting Limits), DUMPStat uses the manual limits in the calculations and plots the points at their original lab values. The manual reporting limit is indicated with a diamond on the graph instead of the median reporting limit. For confidence limits, surface water and air analyses, the manual reporting limit is halved.

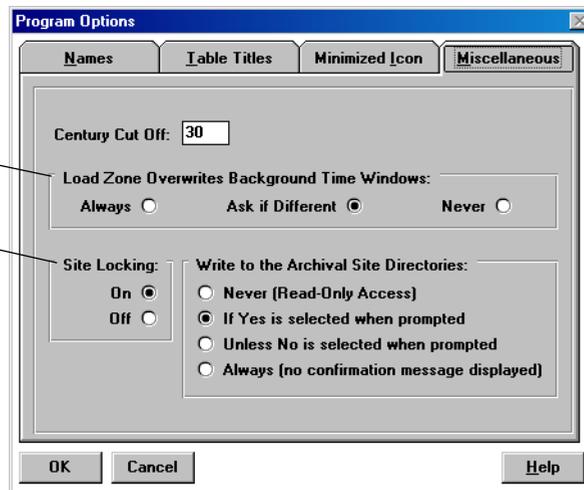
New Program Options

Refer to **Zone Files** on page 269 of **Appendix B, Technical Notes**.

There are two new items on the Miscellaneous tab of Settings > Program Options.

Load Zone Overwrites
Background Time Windows

Site Locking/Write to the
Archival Site Directories



Load Zone Overwrites Background Time Windows

Zone files now save all settings on the Set Time Windows and Statistical Options screens.

On the Miscellaneous tab of Settings>Program Options, you can choose to have your zone's Time Windows overwrite any current Time Windows when you load a new zone.

- ▶ Click on Always to have your zone time windows always override any current settings.
- ▶ Click on Ask if Different to have DUMPStat warn you when your current time windows are different than your zone time windows. This is the default setting.
- ▶ Click on Never to always keep your current time windows, even if they are different from the zone file's settings.

This option refers to the time windows (Start Display, Start Window, and End Window) set for individual wells, and for Up vs. Down.

All other settings on the Set Time Windows dialog are loaded with the new zone without the option to keep your current settings.

Site Locking and Access to the Archival Directories

Site Locking allows you to use a site in DUMPStat without having another user load it and use it at the same time. This protects against inadvertent loss of changes when two or more people try to save their work to the same location. If you are a single user, however, you may find site locking to be unnecessary.

- ▶ Site locking is on by default. To change the setting, select the desired radio button.

When you switch sites, or do a Site > Back Up Current Site, DUMPStat always saves your changes to the archival site

directory by default. You can now choose when to write your changes to the archival directory.

- ▶ Click on Never to have DUMPStat never overwrite the archival site files. This means that if you switch sites, any work you had done in the previous site will be lost.
- ▶ Click on 'If Yes is selected when prompted' to have DUMPStat request confirmation with a default No answer. That is, if you press ENTER, DUMPStat will not write to the archival directory.
- ▶ Click on 'Unless No is selected when prompted' to have DUMPStat request confirmation with a default Yes answer. That is, if you press ENTER, DUMPStat will write to the archival directory.
- ▶ Click on Always to have DUMPStat always overwrite the archival site files with your latest work.

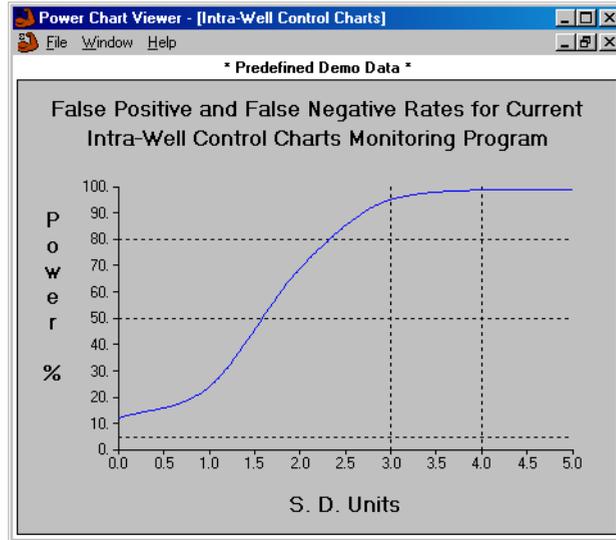
Trends and Outliers in Time Series

Refer to Time Series (Perform Analyses) on page 190 of Chapter 10, the Functions Menu.

If you have enabled Identify Historic Trends in Settings > Statistical Options, DUMPStat's Time Series analysis now tests for increasing and decreasing significant trends using Sen's test of trends. This test is applied to all data that fall within the background time window for the selected wells. A detected trend is reported in the subtitle of the graph.

Outliers are now automatically screened in Time Series when testing for trends. Outliers are indicated on the graph by a hollow circle.

Grid Display on Statistical Power Charts



Statistical Power Charts have a grid display that can be toggled on and off from the File Menu or File > Page Layouts dialog. If the lines are on, they will print on the graphs as well. The lines are either all shown or all hidden (all or nothing) and the positions are not adjustable.

The two vertical and three horizontal lines provide a visual reference for judging the position and steepness of the power curve. The vertical lines are at 3 and 4 SD's along the horizontal axis, and run from the top to the bottom of the area bounded by the axes. The horizontal lines are at 5%, 50%, and 80% likelihood on the vertical axis.

Changing the Number of Sites

Refer to **Changing the Number of Sites** on page 57 of Chapter 5, **The Site Menu**.

Important

Only named sites are exported to other computers and at no time will DUMPStat increase the number of sites for a computer beyond the maximum number of licensed sites between the two participating computers.

Some companies may have purchased software for a number of people within the same office. If each person must work with the same sites, it is important to maintain consistency among computers. That is, each computer should have the same number of correctly named sites.

When it is necessary to increase the number of sites for the company, one person must contact Discerning Systems to receive an authorization code. Then, the newly-increased computer can export its site table to other computers.

To export your site table:

The ‘target’ computer is the machine you are exporting the site table **to**. The ‘source’ computer is the machine you are exporting the site table **from**.

1. At the source computer, select Register Features from the Functions Menu.
2. Select ‘Export named sites to another licensed computer via diskette’ from the Request list box and click on OK.
3. DUMPStat will ask you to insert a blank, formatted diskette into the computer.
4. Take the prepared diskette to your target computer.
5. At the source computer, select Register Features from the Functions Menu.
6. Select ‘Increase site count by importing named sites from diskette’ from the Request list box and click on OK.

If the two computers used the same site names for the original number of sites, the new site name will simply be added to the target computer. However, if there are discrepancies between the names, DUMPStat will ask you to match them up.

The Incoming Names list will not sort the names; any item which returns to it is placed at the bottom of the list.

To match sites between computers:

1. Click on a site name in the Incoming Names list (the left-most column) and drag it to the New Names list (the middle column), adjacent to the Existing Site Name that it matches with. Release the mouse button to anchor the site name.
2. If you accidentally place the site name in the wrong position, simply click and drag it to where you want. If you place it on top of another site name, that name will return to the Incoming Names list.
3. When all the incoming sites have been matched, click on OK.

OR

If you do not wish to continue matching sites, click on Cancel.

Table Numbering

Refer to Table Titles (Program Options) on page 66 of Chapter 6, The Settings Menu.

When setting custom numbers for your tables, you may use numbers that are up to 3 digits long. For example, you may use 100, 101, 102, etc. You may also use negative numbers if you wish.

The Analytical Data Summary tables may also be custom numbered with numbers up to 3 digits long:

- Enter the number you'd like for the first table, and subsequent summary tables will be numbered incrementally. **OR**
- Enter a *negative* table number to force all tables to the same number (for example, setting a number to -5 means that all tables will have the number 5).

Documentation Omissions

User Name

Refer to **Names (Program Options)** on page 65 of **Chapter 6, The Settings Menu**.

If any conflicts occur between people wishing to use the same site(s), DUMPStat will notify each user as necessary and describe what actions they may take. In order to provide such notification, DUMPStat needs to know who is working at each installation of the software.

Enter your user name on the Names card of Program Options from the Settings Menu. You can reset it as often as you wish. If no name is entered and DUMPStat needs to know who you are, you will be prompted to enter one.

Margins

Refer to **Margins (Page Layouts)** on page 79 of **Chapter 6, The Settings Menu**.

Margins may range from 0.5 to 3 inches wide.

Selecting Page Layout for margins allows you to set the amount of white space that will border your output on printed pages. Simply enter the number (in inches) that you wish to have at the top, bottom, left and right sides of either a portrait or landscape page. The headers, including the site name, client name, and page number, are not drawn in the margin area. Thus, if you choose a 1" margin, you are guaranteed 1" of white space around the outside of the paper.

Effective Backup Strategy

Refer to "When you receive new data" (**Effective Backup Strategy**) on page 21 of **Chapter 2, The First Time You Use DUMPStat**.

An 8th point is missing in the list of steps to be followed when you receive new data. This point is:

8. Choose Restore Current Site from the Site Menu. This will allow you to re-establish the site lock.

Documentation Corrections

Surface Water and Air Trend Tests

Refer to **Select Pairs for Surface Water, and Select Pairs for Air Monitoring**, on pages 164 and 167 respectively, of Chapter 9, the **Sample Points Menu**.

When choosing sample points for surface water and air monitoring analyses, note that all data from the start of the time window are used for the trend test, and not just the data within the time window, as indicated in the User's Guide.

Statistical Guide Corrections

Compounds Quantified in all Background Samples

Refer to page 24 of Chapter 3, **Technical Details**, in the **Statistical Guide**.

In the second point, there is a correction in the equation for s ; the n in the denominator should be corrected to ' $n-1$ ':

$$s = \sqrt{\sum_{i=1}^n \frac{(x_i - \bar{x})^2}{n-1}}$$

An Alternative based on Prediction Limits

Refer to page 37 of Chapter 3, **Technical Details**, in the **Statistical Guide**.

The second point should read as follows:

2. As an alternative to combined Shewhart-CUSUM control charts, DUMPStat can compute normal prediction limits for detection frequencies > 25%, or rare-event prediction limits otherwise, as described in the previous section on inter-well comparisons.