

The most important consideration of data management is how often do you need to collect data, how much data you are going to have to manage and how much is enough. In other words, how often is your Datasonde or Minisonde going to take a set of measurements?

Most projects require at least an hourly sampling frequency for the basic primary parameters but in very warm water this may not be often enough. This frequency may not be adequate where, during the summer, dissolved oxygen and temperature measurements could change 10° C during a twenty-four hour period (sometimes as much as 2° C in an hour). This makes it very difficult for the field crews to match the field Quality Control (QC) measurements to that of the remote or real time instrument. A thirty minute or less frequency ensures that field measurements are timed as closely as possible to the remote instrument and field crews don't spend a lot of time waiting. Quarter hour frequencies are also becoming more and more popular as well.

The large amounts of data generated can come in two different formats. The remote water quality instruments (Datasonde & Minisondes 4a's with internal memory) must be removed from the deployment structure and returned to the laboratory or at least some place where the temperature is controlled (i.e. motel room). There the data stored in the instrument's hard memory can be safely downloaded by computer to disk and is checked to ensure it is within the acceptance criteria for each parameter. If measurements from a particular parameter are outside the limits, every effort is made to correct the problem through post calibration, and then the corrected data is downloaded

again. These precautions ensure that the data presented is the best possible.

The data table is prepared with the field measurements inserted at the appropriate date and time and presented in both a tabular and graphic format for approval. Once approved, the data sets from each site are combined and loaded into your water quality database for long term storage. Both the data from the remote instrument and the quality control data (both field and laboratory) can be stored together so that the QC data will support the remote. Information from the real time water quality stations is handled differently. Both satellite telemetry and telephone station data may be received first by a central data management agency then passed on to various user groups for dissemination. Information can be downloaded automatically from each site, several times daily, into a central intermediate database. The field crews should be able to retrieve this data, prepared it in the same tabular and graphical formats as the remote data. Logged data from each station can be stored and retrieved at the site, as most data loggers will have some internal memory.

Data tables and charts can all be set up before hand and as data is collected you simply paste in any new data and the charts update automatically. A template is created with the date and time for the year in the left columns and a header for each of the parameters across the top. The header will also contain any field and laboratory QC parameter that has been collected. These QC data points are typed in by hand at the appropriate date and time of collection. The QC data will then appear on the chart and support the values of the meter at that time.

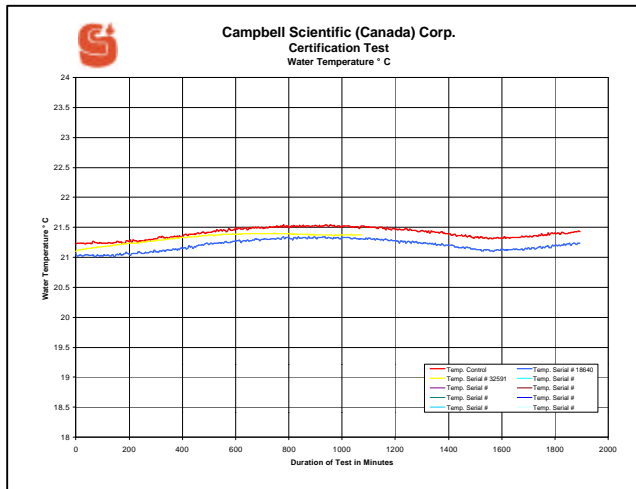


Figure 1

Charts can be customised as in the following Figure 1 or be left fairly plain, (it is all up to you).

For more information on this or any Hydrolab application please contact Campbell Scientific (Canada) Corp. at (780) 454-2505.