

Guide for Viewing Water Quality Data How to Interpret Processed Data Output Files



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Quality

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<https://www.oregon.gov/deq/wq/Pages/WQ-Monitoring-Volunteer.aspx>

DEQ is a leader in restoring, maintaining and enhancing the quality of Oregon's air, land and water.

Purpose Statement

This document provides instructions for viewing continuous water quality data output files processed by DEQ. Continuous datasets submitted by volunteer program partners undergo data review and are uploaded into a local VolWQdb database. The intent of this database is to stage the data for transfer to a publically accessible database.

To open the provided zipped folder you will need to manually rename to files to end in “.zip”.

Naming convention for the files within the zipped folder begins with a four digit tracking number used by the DEQ to group a data submission together. The remainder of the file name describes the information within the file. Data are broken down by data logger and parameter. To be consistent with the STORET database, parameter is referred to as characteristic or ‘charid’ in the data files.

Continuous Data

Summary Data

- *DeployStats.csv* – File provides summary statistics for each sensor covering the entire deployment of a data logger.
- *DailyStats.csv* – File provides statistics for each day of deployment for each sensor. Each row of data has all the statistics for a specific day. These are the statistics that are stored in the database. The fields include the following:
 - dDTmin – start time of the daily statistic
 - dDTmax- end time of the daily statistic
 - dyN- number of logged results
 - hrNday- number of hours in day with logged data
 - dydql- data quality level based on QC review
 - dDQL- data quality level based on number of logged results
 - dyMean- mean for characteristic on the date
 - dyMin- minimum for characteristic on the date
 - dyMax- maximum for characteristic on the date
 - delta- difference between max and min for the day
 - dyMedian- median for characteristic on the date
 - anaStart- first logged result used for moving average
 - anaEnd- last logged result used for moving average
 - ma- moving average
 - cmnt- comments associated with results

Plots

Very simple plots are included for each sensor in the files ending with “.png”. The scales of each chart are determined automatically by the range of results (y – axis) and the date range (x- axis). Plots have only a single parameter and the legend likely does not cover all the represented data.

Logged results are presented on the charts as colored points based on the final data quality level (DQL) shown in the legend. Data points that are “NA” for DQL are assessed as either before or after deployment. Audit results are presented on the chart as larger, transparent, grey dots. For temperature and dissolved oxygen moving averages are displayed as solid

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blue lines. For temperature, the date and proceeding 6 days' maximum values are averaged to calculate the 7-day moving average of the daily maximums. Dissolved oxygen uses the date and proceeding 29 days' minimum daily values to calculate the 30 day moving average of daily minimums. Calculations don't begin until there are enough proceeding days. If more than 10% of the proceeding days' maximum or minimum values have a DQL of "C" or "NA", the moving average is not calculated.

Water quality criteria are presented for temperature, dissolved oxygen and pH charts. The criteria included in the charts may not be applicable at the specific site or time period. Criteria included are:

- Temperature (in °C): migration corridor 20.0; rearing and migration 18.0; core cold water habitat 16.0; and spawning 13.0.
- Dissolved oxygen (in mg/L): spawning 11.0, cold water 8.0, cool water 6.5, and warm water 5.5.
- pH (in S.U.): upper limit 8.5, lower limit 6.5

R files

Files containing the R script used to process the data as well as output files generated during processing are provided. Files ending in ".R" are the script files, and files ending in ".Rdata" are generated during processing. For each sensor there are three files: (1) Contains the logged results, (2) contains the field audits, and (3) is a script displaying any changes to the data quality levels made during data review.

Accessibility

Documents can be provided upon request in an alternate format for individuals with disabilities or in a language other than English for people with limited English skills. To request a document in another format or language, call DEQ in Portland at 503-229-5696, or toll-free in Oregon at 1-800-452-4011, ext. 5696; or email deqinfo@deg.state.or.us.