





# AquaChem

## Water Quality Data Analysis and Reporting Software

AquaChem's analysis tools cover a range of functions and calculations including unit transformations, charge balances, and statistics. These powerful analytical capabilities are complemented by an extensive selection of commonly used geochemical plots to represent the chemical characteristics of water quality data.

### AquaChem Applications

- Analyze and report aqueous geochemistry of municipal groundwater supply wells
- Report analytical lab results of samples from contaminated sites
- Manage water quality data from sanitary landfills
- Identify mineralization trends for mining exploration
- Analyze, interpret and plot water quality data
- Identify and report water quality guideline exceedances
- Demonstrate regulatory compliance with chemical exceedance and trend analyses reports

### Why Choose AquaChem?

- Simple and easy analysis of water quality data
- Effortless and flexible data importing and exporting
- Automatic geochemical calculations of water type, sum of anions, sum of cations, ion balance, TDS, hardness and more
- Water quality exceedance reports for multiple water quality standards
- Automatic ready-made reports



## Features - Effortless Data Management & QA/QC

- ✓ Easily import data from various file types (.txt, .csv, .xls, .xlsx, .mdb, and .accdb) and file formats (samples as rows, samples as columns, one analyzed value for each row)
- ✓ Export stations, analysis data and geochemical plots to multiple formats, including text files, spreadsheets, images, and print-ready Office documents.
- ✓ Create simple to complex data queries and easily extract vital information about your water quality data.

## Features - Interactive GeoChemical and Statistical Plots

AquaChem is capable of generating the following plots:

- ✓ **Geochemical plots:** Piper, Stiff, Durov, Schoeller, Wilcox, Giggenbach, Meteoric Water Line, Ludwig-Langelier, Ternary;
- ✓ **Statistical Plots:** Box and Whisker, Histogram, Probability, Quantile, Detection Summary; and
- ✓ **General Plots:** Scatter, Pie, Stacked Bars, Radial, Time Series

AquaChem allows you to create multiple plots for the same dataset and view these plots simultaneously side-by-side. All plots are interactive which means when you click on a data point, its corresponding sample is highlighted in the sample list. This is useful for identifying outliers.

## Features - Water Quality Data Analysis

AquaChem comes with a comprehensive calculators and converters that allow you to perform quick, on-the-fly analyses on your water quality data. AquaChem is capable of the following calculations and conversions:

- ✓ **Unit Conversion:** AquaChem manages measurement and concentration units for you – switch between mass-, molar-, and equivalent-based concentrations on the fly.
- ✓ **Ionic Functions:** Water Type, Electroneutrality/Ion Balance, Sum of Anions, Sum of Cations, TDS, Hardness, Alkalinity
- ✓ **General:** Date functions, Exceedance counts, Total Organic Carbon, Total Organic Halogens
- ✓ **Corrosion and Scaling Indices:** Langelier Saturation, Ryznar Stability, Puckorius Scaling, and Larson-Skold
- ✓ **Agricultural/Irrigation Metrics:** Sodium Absorption Ratio, Magnesium Hazard, Residual Sodium Carbonate
- ✓ **Enthalpy:** Enthalpy of water (liquid or vapor) based on temperature or dissolved silica
- ✓ **Isotopes:** Estimates of infiltration elevation and temperature based on Oxygen-18 and Deuterium isotopic fractionation

## Features - Automatic Reports

In just a few clicks, AquaChem delivers ready-made reports that contain key information about your water quality data. Report layouts can be fully customized using the Report Designer to accommodate project-specific needs. The following automatic reports are supported:

- ✓ **Sample Report:** Generates a report for selected parameters that includes comparisons to water quality standards and summary statistics for selected samples
- ✓ **Station List Report:** Generates a table of selected sampling stations
- ✓ **Sample List Report:** Generates a table of selected samples
- ✓ **Sample Result Report:** Generates table of selected results for the active sample

## Features - R-Console

- AquaChem includes a console that allows you to run scripts in the R scripting language and
- ✓ leverage the thousands of available libraries that facilitate data analyses, visualization, categorization and much more.