

WHI E-News Topics

2003 October Edition

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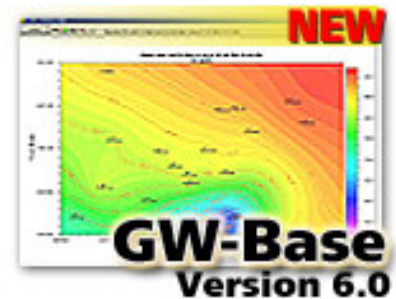
Tips & Tricks

- » [New Feature highlights in AquaChem 4.0](#)

Waterloo Hydrogeologic, Inc. is a recognized leader in the development and application of environmental software and services.



[Download](#) a demo now!



[Download](#) a demo now!

Product News

GW-Base Data Management System makes Storing, Analyzing, and Reporting Groundwater Data a Snap!

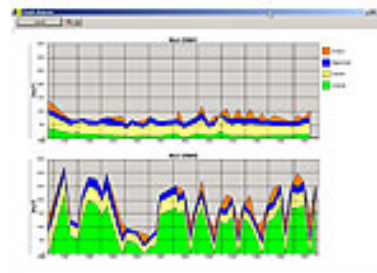
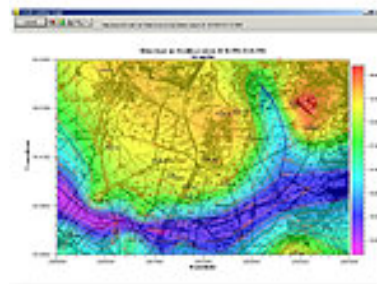
Waterloo Hydrogeologic, Inc. is pleased to announce the introduction of [GW-Base 6.0](#). GW-Base is a powerful Windows-based software application designed specifically for managing groundwater project data. GW-Base allows you to quickly import your existing project data (from ASCII or Excel files) and query the database based on a wide variety of criteria. These include searching for overdue site investigations, measurements above or below threshold values, and observation wells with specific attributes. GW-Base can even graph and plot your data, making it an all-in-one data management tool.

GW-Base is ideally suited for:

- » Groundwater Monitoring & Remediation Projects
- » Well Registration & Well Management
- » Groundwater Exploration
- » Sanitary Landfill Monitoring
- » Water Quality Management
- » Groundwater Protection & Mapping

Click below to download your free 30-day evaluation copy.

http://www.waterloohydrogeologic.com/download_form.htm



For more information about our GW-Base 6.0 software, visit our website or contact us today:

Website: http://www.waterloohydrogeologic.com/software/gw_base/gw_base_ov.htm

Email: sales@waterloohydrogeologic.com

Phone: (519) 746-1798

AquaChem Version 4.0 Released!

AquaChem v.4.0 delivers improved functionality and greater flexibility for storing, analyzing, plotting and modeling water quality and aqueous geochemical data.

Features and Benefits:

Data Management: AquaChem uses an MS Access™ relational data management system to ensure data integrity, improve performance, and provide the flexibility to add an unlimited number of organic/inorganic chemicals with customizable units - **NEW**.

Water Quality Standards: Water quality exceedences are automatically highlighted following built-in guidelines from the United States EPA, World Health Organization (WHO), and Canadian Council of Ministers of the Environment (CCME); or customize your own water quality guidelines - **NEW**.

Analysis Plots: AquaChem offers 19 plotting methods used for water quality data analysis and reporting, including:

- » Piper, Durov, and Ternary, Scatter, Histogram, and Time-Series (multi-parameters or multi-stations) - **NEW**.
- » Schoeller, Ludwig-Langelier, Geothermometer, Giggensch Triangle, Box and Whisker, Wilcox, and Depth Profile - **NEW**.

Built-in Tools: Several time-saving utilities are included for unit conversions, species conversion, concentration decay calculations, volumetric concentration conversions, and quality assurance - **NEW**.

Reports: Create professional reports using the Report Designer, or save reports to .HTML, .CSV, .TXT, or .RTF formats, including:

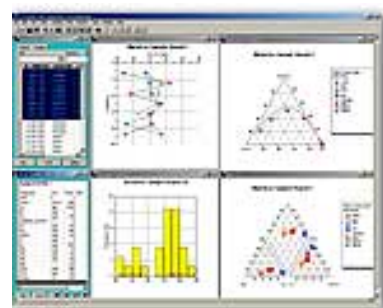
- » Statistics - including the Mann-Kendall test for determining temporal trends - **NEW**.
- » Sample Comparison, Correlation and Mixing
- » Reliability Check - for evaluating the validity of calculated values - **NEW**.
- » Source Rock Deduction - **NEW**.

Geochemical Modeling: Built-in link to PHREEQC v.2.8 for calculating saturation indices, pH values, or Eh values of selected samples and automatically storing them in the database; or launching the USGS PHREEQC-I program for more complex scenarios - **NEW**.

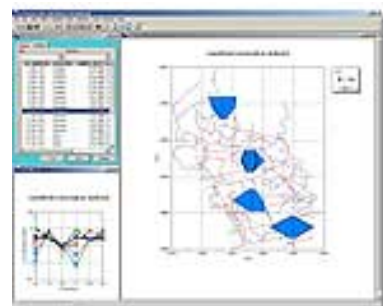
[AquaChem](#) is the most complete software package available for aqueous geochemical data analysis, plotting and modeling!



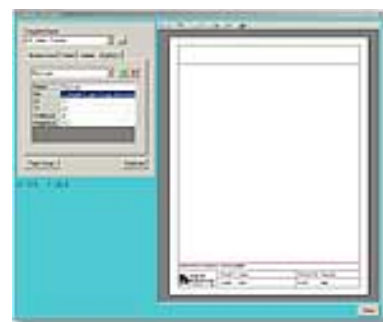
Automatic highlighting of exceedences.



Standard water quality plots.



Stiff graphs over site map.



Print Template Designer preview.

For more information about our AquaChem software, visit our website or contact us today:

Website: www.waterloohydrogeologic.com/software/aquachem/aquachem_ov.htm

Email: sales@waterloohydrogeologic.com

Phone: (519) 746-1798

Well-Tagging Starter Kits Help Drillers comply with Regulation 903

A recent trend has emerged with government agencies around the world developing stringent regulations for Water Well Construction. Recently, the Ontario Ministry of the Environment (Canada) has announced "Regulation 903" which specifies construction rules for all new water wells installed from August 2003 forward. As specified in the regulation, all well drillers are required to fasten durable, stainless steel well tags to each water well.

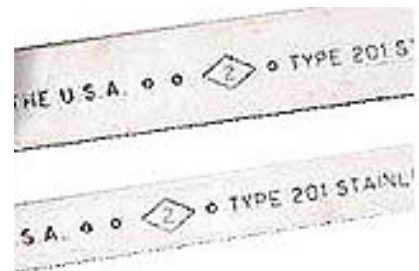
As part of this initiative, Waterloo Hydrogeologic's Consulting Division was hired to develop a comprehensive Water Well Information System, which included designing the newly mandated stainless steel well tags.

To assist well drillers with the new well-tagging requirement, WHI is now also offering the equipment necessary to quickly and safely fasten the new well tags to well casings. The Well-Tagging Starter Kit is comprised of: One (1) banding tool, 100 feet of stainless steel strapping, and 100 stainless steel clips, at a package price of CDN\$ 329.99 + taxes and shipping.

To purchase your Well-Tagging Starter Kit, please call Waterloo Hydrogeologic at 519-746-1798 or email us at info@waterloohydrogeologic.com.



Heavy Duty Strapping Tool



Stainless Steel Strap



Strapping Clips

See Ministry of the Environment's "[Green Facts](#)" for interesting facts about water well construction.

For more information about our Well Tagging Kits, visit our website or contact us today:

Website: http://www.waterloohydrogeologic.com/equipment/well_tagging_starter_kit

[/well_tagging_starter_kit_ov.htm](http://www.waterloohydrogeologic.com/equipment/well_tagging_starter_kit_ov.htm)

Email: sales@waterloohydrogeologic.com

Phone: (519) 746-1798



Consulting News

Consulting Project:

MOE Well Tag Development

Helping Ontario Protect and Manage Water Well Systems

Our ability to characterize and understand groundwater resources is dependent on the quantity and quality of available borehole logs, many of which come from water well construction records. Borehole logs provide discrete "windows" into the subsurface, allowing us to identify geological materials and groundwater conditions at specific locations; conditions beyond a borehole must be inferred. The reliance on borehole data means that the accuracy of borehole logs (including their location, and geologic description) is imperative.

As part of the Province of Ontario's efforts to better manage and protect our groundwater resources, the Ontario Ministry of the Environment (MOE) has modified legislation governing the installation of water wells (Regulation 903) to provide, among other features, better location information. To accomplish this, all new wells constructed in the province will have their locations referenced with a Global Positioning System (GPS) unit, and will be fitted with a "Well Tag". Well Tags will provide a permanent and unique identifier for each well, facilitating a dependable link between the physical well and it's associated database of geologic and groundwater information.

In support of the MOE's initiatives to develop this innovative policy, Waterloo Hydrogeologic, Inc. (WHI) was contracted for, and recently completed, a study concerning all aspects of the Well Tag design, manufacturing, and implementation process. Additionally, a Web-based data access system was developed by WHI as a prototype to demonstrate the ability to dynamically link Well Tag numbers to the MOE's Water Well Information System (WWIS). In designing the Tags, several issues were considered, including varying types of well installations, weathering and corrosion in the Canadian climate, Tag manufacturing processes, Tag fastening procedures, and the logistics of fitting this process into the routine business procedures of both the MOE and well contractors.

Currently, the MOE is manufacturing a supply of Well Tags, and



preparing to distribute them to well contractors throughout the province. An installation booklet is also being developed to provide details regarding appropriate Well Tag installation procedures. In support of this process, Waterloo Hydrogeologic, Inc. is also distributing a Well Tag strapping kit to facilitate the preferred fastening option.

If you would like more information about the Well Tag Project or more information about WHI's Consulting activities and capabilities, visit our website or contact us today:

Website: www.waterloohydrogeologic.com/consulting/consulting_services.htm

Email: consulting@waterloohydrogeologic.com

Phone: (519) 746-1798



Training News

Upcoming Professional Courses

Groundwater Modeling



3D Groundwater Flow and Solute Transport Modeling Using Visual MODFLOW Pro.

Simple to complex applications of groundwater flow and contaminant transport models are covered in this hands-on course. Ideally suited for people with beginner or intermediate level modeling experience who wish to advance their modeling knowledge and who's responsibilities include model review, planning, and project management.

Dates/Locations

[Toluca, Mexico](#)
[October 20 - 23, 2003](#)

[Sapporo, Japan](#)
[October 21 - 23, 2003](#)

[Salvador, Brazil](#)
[November 3 - 5, 2003](#)

[Auckland, New Zealand](#)
[November 11 - 13, 2003](#)

[Melbourne, Australia](#)
[November 18 - 20, 2003](#)

[Waterloo, Ontario](#)
[November 18 - 20, 2003](#)

[Madrid, Spain](#)
[November 18 - 20, 2003](#)

[Register Now](#)

Model Calibration Using PEST



Applied to MODFLOW and Other Numeric Models.

This course teaches strategies for calibrating groundwater models, the most time-consuming, challenging and critical phase of a modeling study. You will learn about model calibration issues in general and also how to use the parameter estimation software package PEST, which has been developed to enhance our ability to calibrate models and to understand the limits of that calibration.

[Braunfels, Germany](#)
[Oct 17](#)

[Toluca, Mexico](#)
[October 24, 2003](#)

[Auckland, New Zealand](#)
[November 14, 2003](#)

[Melbourne, Australia](#)
[November 21, 2003](#)

[Waterloo, Ontario](#)
[November 21, 2003](#)

[Madrid, Spain](#)
[November 21, 2003](#)

[Register Now](#)

Advanced Groundwater Modeling



Applying Innovative Techniques and Avoiding Common Pitfalls using MODFLOW-2000, MODPATH, & MT3D.

The advanced course builds on the topics covered in “Groundwater Modeling” and develops a higher level of skill in building and troubleshooting groundwater flow models. Ideal for “Groundwater Modeling” graduates or experienced modeling professionals.

[Melbourne, Australia](#)
[November 24 - 26 2003](#)

[Madrid, Spain](#) [November 24 - 27, 2003](#)

[Toluca, Mexico](#)
[October 27-29, 2003](#)

[Register Now](#)

Finite Element Groundwater Modeling



Advanced Applications for Saturated Flow & Transport, Density-Dependant Flow, Unsaturated Conditions & Heat Transport using FEFLOW

This four-day course features alternating lectures and hands-on experience with FEFLOW to build 2D and 3D groundwater models for solving applied groundwater flow and contaminant transport problems. The lectures cover background theory, limitations and practical considerations of finite element modeling using FEFLOW. Practical examples of applied modeling projects will be examined and discussed in detail.

[San Francisco, California](#)
[November 4 - 7, 2003](#)

[Register Now](#)

Human Health Risk Assessment



Practical Approaches to Estimating Risk and Developing Site-Specific Target Levels Using RISC Workbench

Risk assessments require an integrated approach that includes fate and transport modeling combined with rigorous application of risk assessment protocols. This hands-on course presents standardized protocols that have been applied to contaminated soil and groundwater environments around the world. Over the two days of the course, you will be trained in a systematic approach to risk assessment starting with contaminant transport processes and ending with methods for developing site-specific target levels.

[Melbourne, Australia](#)
[November 27 - 28, 2003](#)

[Register Now](#)

Course Benefits

- Learn the fundamentals of accepted risk assessment protocols
- Acquire lots of hands-on experience using the RISC Workbench software
- Understand the practical aspects of conducting a risk assessment
- Learn from an experienced risk assessment professional with worldwide experience

Aquifer Test Analysis



Principles of Pumping Test Design and Techniques for Data Analysis

A wide variety of techniques can be applied to analyzing aquifer tests. This course covers the theory behind the techniques and provides an opportunity to obtain hands-on experience in analyzing aquifer test data collected from a variety of conditions.

[Sapporo, Japan](#)
[October 24 - 25, 2003](#)

[Register Now](#)



[For our full 2003 training schedule, click here!](#)



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For more information about our course offerings, visit our website or contact us at:

Website: www.waterloohydrogeologic.com/training/training.htm

Email: training@waterloohydrogeologic.com

Phone: (519) 746-1798

AquaChem v.4.0:

Automatically Generate and Assign Symbols

There is an old joke about why Microsoft used the name Office 97. One answer was that 97% of the features were never used. Another answer was that 97% of the feature requests Microsoft received were for features that already existed. Regardless of the punch line, it is clear that many of today's software products are so feature-rich that it can be challenging to master new features and use your software to its full potential. The purpose of the "Tips and Tricks" section of the WHI E-News is to highlight some of the features and functionalities included with various WHI software products that might otherwise be overlooked.

This month's tip addresses the ability of AquaChem v.4.0 to automatically assign plot symbols to water quality samples, based on a user-defined "grouping" parameter

The Issue:

In order to plot water quality data on the various AquaChem plots, you must create plot symbols and assign these symbols to the appropriate sample, or groups of samples. Typically, samples from the same station location will be assigned the same plot symbol.

In AquaChem v.3.7, symbols had to be defined one-at-a-time (name, size, colour, and shape), then individually assigned to the appropriate samples. This process was very time-consuming and tedious if you had a large database with many samples.

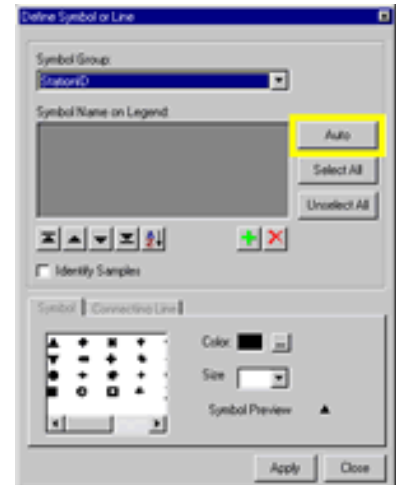
Feature Highlight:

[AquaChem v.4.0](#) includes a convenient and time-saving feature that allows you to automatically create and assign symbols to sample groups based on a user-defined Station parameter (e.g. Station ID, Station Name, Location, Geology, etc.). An example of how to do this is described on the right side:

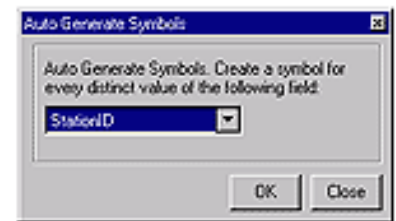
Then click **[OK]** to generate the symbols.

[AquaChem](#) will then search your database for all instances of the parameter you selected (in this case, Station ID), and create a unique symbol for each unique parameter (Station ID). AquaChem then assigns each symbol to the appropriate sample(s) corresponding to each Station ID "group". Each symbol will have a unique symbol name, and shape, that corresponds to the Station ID in your database. You may then modify these new symbols (i.e. the shape, colour, size, etc.). Or, you may accept the defaults and immediately plot your samples. A few sample plots are shown here, using Station ID symbols.

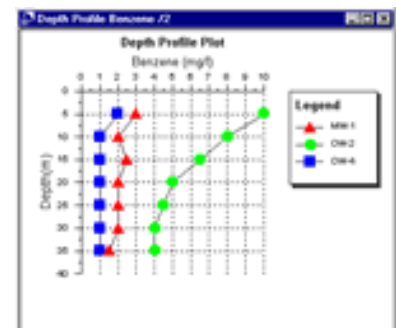
For large databases containing hundreds of samples from several



First, you must create a new symbol group named Station ID, in the Symbol options dialogue:



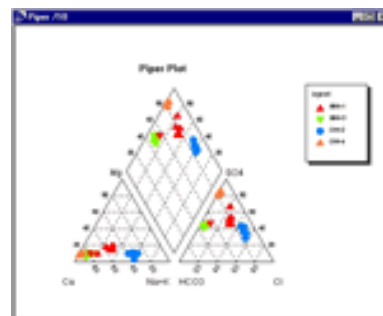
Then, select the Auto option, and choose the desired Station parameter.



observation wells, this would have taken several minutes in AquaChem v.3.7. Now, using the Auto option available in v.4.0, this task can be accomplished in a matter of seconds. A huge time-saver!

Other new symbol and plot options included with [AquaChem v.4.0](#) include:

- » True-type AquaChem symbol fonts for better display and print quality
- » Multiple symbol groups - allowing you to create, store, and recall different symbol configurations for the samples
- » Customized auto-titling of Pie, Stiff, and Radial plots (e.g. assign a Sample ID and Date as the title for all Pie, Stiff, or Radial plots)
- » New plot types including: Depth Profile, Box & Whisker Plot, and Wilcox plots



Download your demo copy of AquaChem 4.0 here:

[www.waterloohydrogeologic.com/
free_downloads_form.htm](http://www.waterloohydrogeologic.com/free_downloads_form.htm)

For more information about this tip, contact us at:

Email: techsupport@waterloohydrogeologic.com

For more information about AquaChem v.4.0, visit our website or contact us today:

Website: http://www.waterloohydrogeologic.com/software/aquachem/aquachem_ov.htm

Email: sales@waterloohydrogeologic.com

Phone: (519) 746-1798

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[Consulting Division](#) - Visit our Consulting Division on the web to see how we can help you.

[Training Division](#) - Visit our Training Division on the web to find a course in your area.

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