



# WHI Enews



**waterloo  
hydrogeologic**  
A Schlumberger Company

**Water Solutions in Perspective**

**June 2006**

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**Introducing the next generation in**

## **Diver Groundwater Dataloggers!**



[Download](#) the Diver Brochure today!

## **Product News**

**Introducing the next generation of groundwater monitoring equipment!**

We are pleased to announce the launch of the most compact and durable line of Diver\* dataloggers engineered for use in almost any environment! This equipment represents the latest innovation in groundwater monitoring, offering the high-quality and long-term reliability you expect. With direct plug-and-play capabilities using the new [Pocket-Diver\\*](#) software, and the complete suite of Waterloo software, data analysis and management have never been so easy!

**The family of Diver dataloggers includes:**

**Mini-Diver\***

- Affordable and easy-to-use
- Measures temperature and water levels
- 24,000 measurements per parameter
- Built-in battery life up to 10 years

**Micro-Diver\***

- Compact, only 18mm diameter
- Measures temperature and water levels
- Fixed, event dependent, averaging or pumping test measurement methods
- 48,000 measurements per parameter
- Hermetically sealed in stainless steel
- Battery life up to 10 years

**Cera-Diver\***

- Ceramic housing suitable for use in the most corrosive environments
- Measures temperature and water levels
- Fixed, event dependent, averaging or pumping test measurement methods
- 48,000 measurements per parameter
- Battery life up to 10 years

**Baro-Diver\***

- For long-term measurements of barometric pressure
- Compact stainless steel design
- Built-in battery life up to 10 years

[Learn more about Diver dataloggers](#) and other Schlumberger Water Services solutions.

**Case Study:**

*All New  
Mini-Diver Only...*  
**\$495.00**



Mini-Diver



Micro-Diver

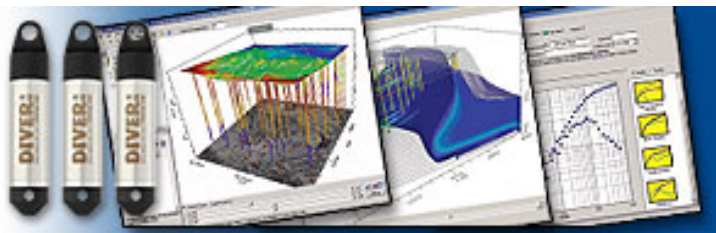


Cera-Diver



Baro-Diver

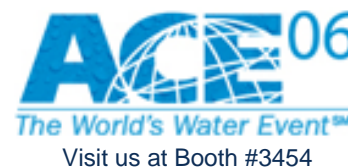
## Water Management Using Diver Dataloggers



**Monitoring Solution Bundles! *Click here!***



Pocket-Diver software offers direct plug-and-play capabilities and is fully compatible with the Waterloo Software Suite of products. \*PDA not included



For more information, contact us:

Phone: +1-519-746-1798

Email: [sws-diver@slb.com](mailto:sws-diver@slb.com)

Website: [http://www.waterloohydrogeologic.com/equipment/groundwater\\_dataloggers.htm](http://www.waterloohydrogeologic.com/equipment/groundwater_dataloggers.htm)

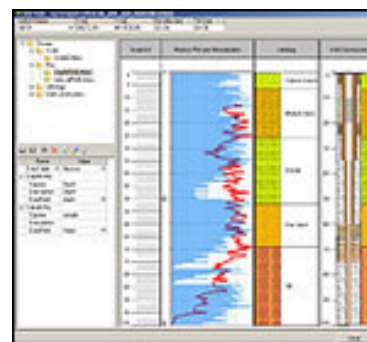
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## **Managing Groundwater Monitoring Data with HydroGeo Analyst**

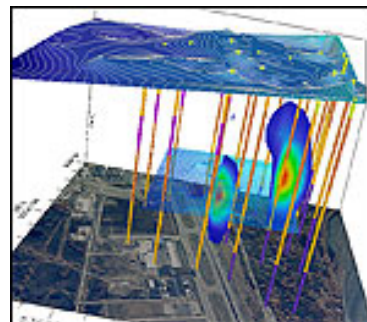
HydroGeo Analyst is the most advanced environmental database solution available in the market today! This all-in one solution integrates a complete range of easy-to-use analysis and reporting tools, with a powerful yet extremely flexible database.

HydroGeo Analyst is ideal for a wide range of specializations requiring data collection, management, visualization, and reporting. Advanced features now allow users to:

- Import water level, temperature, and conductivity\* values directly from Diver dataloggers into HydroGeo Analyst for compliance reporting.
- Map and contour water level data using the built-in GIS Map Manager.
- Visualize water elevations as variable 3D surfaces with color shading and contour lines.
- Manage large amounts of groundwater monitoring data for your site within a single, easy-to-use program.

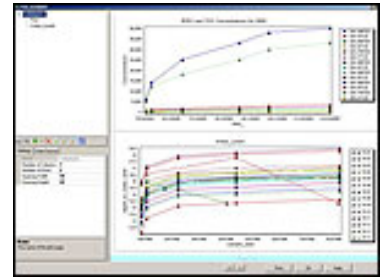


Analysis and Interpretation



- Simultaneously view geologic features and Diver data for improved understanding of your site.
- Geographically locate and manage groundwater monitoring networks.

### 3D Interpolation



Time Series Data: Diver Water Elevations

HydroGeo Analyst and Diver dataloggers offer the ideal combination of data management and data acquisition capabilities!

\* - available with CTD-Diver only

## HydroGeo Analyst Brochure & Demo

**Demo:** [Click here](#) to download a free trial!

**Brochure:** [Click here](#) to download brochure!

For more information, contact us:

Phone: +1-519-746-1798

Email: [sws-sales@slb.com](mailto:sws-sales@slb.com)

Website: [Visit our HydroGeo Analyst web page](#)

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## Consulting Services News

### Water Management is Receiving More and More Attention

Oosterhout Municipality (The Netherlands) can be described as an innovative community when it comes to water management. This is gradually coming to the attention of water management boards, consultants and other municipalities who are starting to turn to Oosterhout Municipality for information. Ad van Goch, Senior Policy Adviser for Water and Sewage of the Engineering Office of the Municipal Enterprises Department of Oosterhout Municipality, explains: "It is important for a whole range of projects to bring information about water to the surface. While we have obviously always had information about water, the way in which the information was obtained and recorded tended to be rather more complicated than it is today. **Read the complete case study [here](#).**



Oosterhout Municipality adopts innovative method for measuring, storing and retrieving vital groundwater data.

## WHI Exhibiting at Workshops & Conferences Around the World

Waterloo Hydrogeologic will be exhibiting our services at a number of upcoming conferences and workshops throughout Canada and USA. Our hydrogeologists and engineers will be attending these events and we would like to meet you and demonstrate our advanced monitoring service, software tools and discuss our full suite of services.

### Upcoming Events

- [AWWA Annual Conference and Expo](#)  
Dates & Location: June 11-15, San Antonio, TX  
Booth Number: 3454



[Learn more about WHI's Consulting Services on the WHI website!](#)

For more information, please contact:

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Website: [www.waterloohydrogeologic.com/consulting/consulting\\_services.htm](http://www.waterloohydrogeologic.com/consulting/consulting_services.htm)

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## Training News

### Environmental and Groundwater Modeling Course Line-Up

The 2006 Waterloo Hydrogeologic Open Enrollment schedule is in full swing! The following list of courses will be offered over the next six months.

Can't make it to one of our Open Enrollment Courses? Call us about our [On-Site Custom](#) Courses designed to suit your specific needs!

[Request your free 2006 Training Course Schedule Catalog!](#)

[Get our full 2006 training schedule!](#)



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## Applied Groundwater Flow and Contaminant Transport Modeling

## **Theory and hands-on applications using MODFLOW-2000, MODPATH, MT3D and WinPEST**

This 4-day course was designed to present the theory behind groundwater flow and contaminant transport modeling, and the practical application of Visual MODFLOW for developing simple to complex groundwater models. Lectures alternate with hands-on computer exercises to emphasize practical development of real-world modeling solutions.

Learn more about this course:

Details: [www.waterloohydrogeologic.com/training/groundwater\\_training\\_course\\_aftm.htm](http://www.waterloohydrogeologic.com/training/groundwater_training_course_aftm.htm)

Registration: [www.waterloohydrogeologic.com/training/training\\_course\\_registration\\_us.htm](http://www.waterloohydrogeologic.com/training/training_course_registration_us.htm)

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## **Model Calibration and Predictive Analysis**

### **Using PEST, Visual MODFLOW and FEFLOW**

This 5-day course covers computer-assisted calibration and predictive uncertainty analysis of environmental models, including a thorough coverage of nonlinear parameter estimation theory and practical analysis of calibrating groundwater and surface water models. The first 4 days consist of Model Calibration and Predictive Analysis using PEST. The last day consists of Applied Inverse modeling using either Visual MODFLOW or FEFLOW.

Learn more about this course:

Details: [http://www.waterloohydrogeologic.com/training/training\\_course\\_pdfs/2006-germany-freising-model\\_calibration.pdf](http://www.waterloohydrogeologic.com/training/training_course_pdfs/2006-germany-freising-model_calibration.pdf)

Registration: [www.waterloohydrogeologic.com/training/training\\_course\\_registration\\_us.htm](http://www.waterloohydrogeologic.com/training/training_course_registration_us.htm)

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## **Making Sense of Environmental Data with HydroGeo Analyst**

### **Understanding Data Sources, Data Analysis and Visualization**

This 3-day course looks environmental data management and GIS analysis using HydroGeo Analyst. You will learn how to develop a GIS-enabled database by integrating a variety of data types (geologic, hydrologic, soil samples, groundwater samples, etc.) into a georeferenced database, and then use this data to develop database queries, present borehole logs, cross-sections, spatial mapping and 3D visualizations of site data.

Learn more about this course:

Details: [http://www.waterloohydrogeologic.com/training/groundwater\\_training\\_course\\_environmental\\_data\\_with\\_hga.htm](http://www.waterloohydrogeologic.com/training/groundwater_training_course_environmental_data_with_hga.htm)

Registration: [www.waterloohydrogeologic.com/training/training\\_course\\_registration\\_us.htm](http://www.waterloohydrogeologic.com/training/training_course_registration_us.htm)

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## Finite Element Groundwater Modeling

### **Advanced Applications for Sat/Unsat Flow & Transport, Density-Dependent Flow and Heat Transport using FEFLOW**

This 4-day course presents the theory behind the Finite Element method for groundwater modeling, and its practical application using FEFLOW. This course provides a more complete understanding of the use finite elements in groundwater modeling, and includes such topics as groundwater flow and transport modeling, principles of unsaturated flow, fracture flow modeling, thermal transport, and density-dependent flow modeling.

Learn more about this course:

Details: [http://www.waterloohydrogeologic.com/training/groundwater\\_training\\_course\\_fem.htm](http://www.waterloohydrogeologic.com/training/groundwater_training_course_fem.htm)

Registration: [www.waterloohydrogeologic.com/training/training\\_course\\_registration\\_us.htm](http://www.waterloohydrogeologic.com/training/training_course_registration_us.htm)

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## Aquifer Test Analysis

### **Principles of Pumping Test and Slug Test Design and Analysis**

A wide variety of techniques can be used to analyze aquifer performance tests, which depends on the type of aquifer and the design of the pumping test or slug test. This course covers the theory behind the analytical techniques, and their hands-on application using AquiferTest Pro for a variety of aquifer types and performance tests.

Learn more about this course:

Details: [http://www.waterloohydrogeologic.com/training/groundwater\\_training\\_course\\_ata.htm](http://www.waterloohydrogeologic.com/training/groundwater_training_course_ata.htm)

Registration: [www.waterloohydrogeologic.com/training/training\\_course\\_registration\\_us.htm](http://www.waterloohydrogeologic.com/training/training_course_registration_us.htm)

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## Water Quality Data Management & Modeling

## Theory and Applications using AquaChem and USGS PHREEQC

The large quantity and range of water quality data types presents a challenge to environmental professionals who wish to develop a comprehensive interpretation of this data. This course provides hands-on experience in temporal and spatial water quality data interpretation, including the use of convenient computer software for organizing and plotting the data.

Learn more about this course:

Details: [https://www.waterloohydrogeologic.com/training/groundwater\\_training\\_course\\_WQDM.htm](https://www.waterloohydrogeologic.com/training/groundwater_training_course_WQDM.htm)

Registration: [www.waterloohydrogeologic.com/training/training\\_course\\_registration\\_us.htm](http://www.waterloohydrogeologic.com/training/training_course_registration_us.htm)

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## Groundwater Modeling for Mine Applications

### Site Characterization, Geochemistry, Groundwater Flow and Solute Transport

An environmental assessment of mining activities requires the analysis of groundwater quantity and quality, the impact of dewatering operations, the potential impact of mine waste leachate, and the potential for remediation of any contaminant issues. This course investigates the use of several groundwater modeling tools that may help in the design, operation and closure of mine sites, including AquiferTest, HydroGeo Analyst, AquaChem and Visual MODFLOW through lectures and hands-on exercises.

Details:

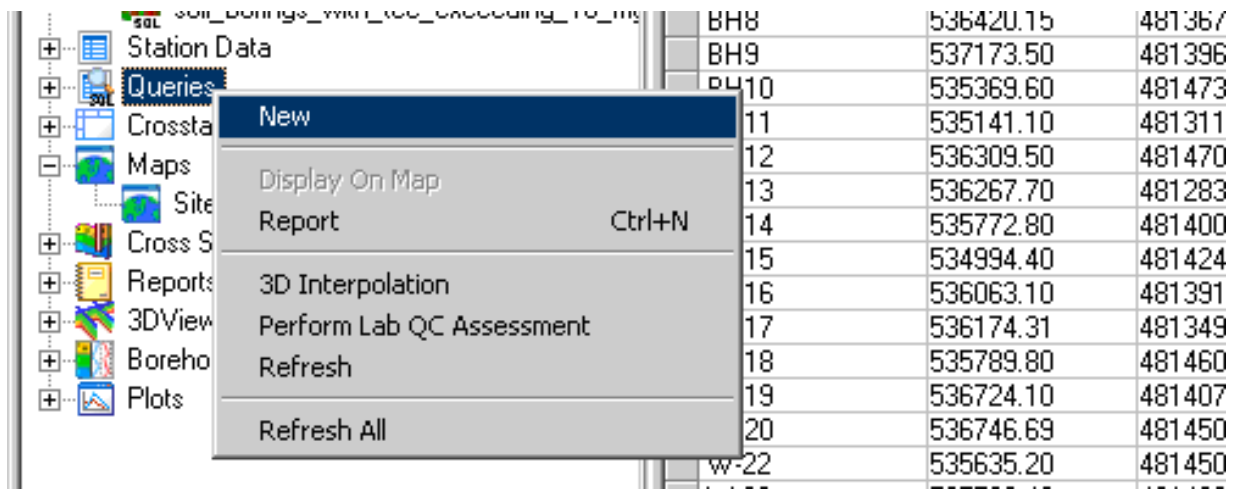
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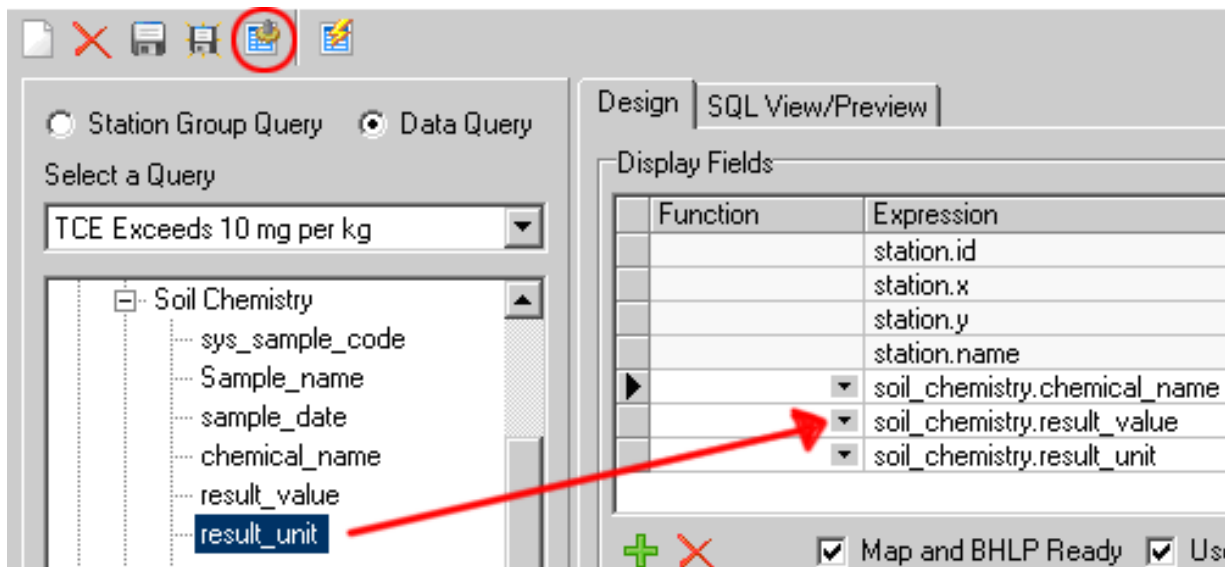
## Tips & Tricks

### Using the Query Builder feature within HydroGeo Analyst 3.0

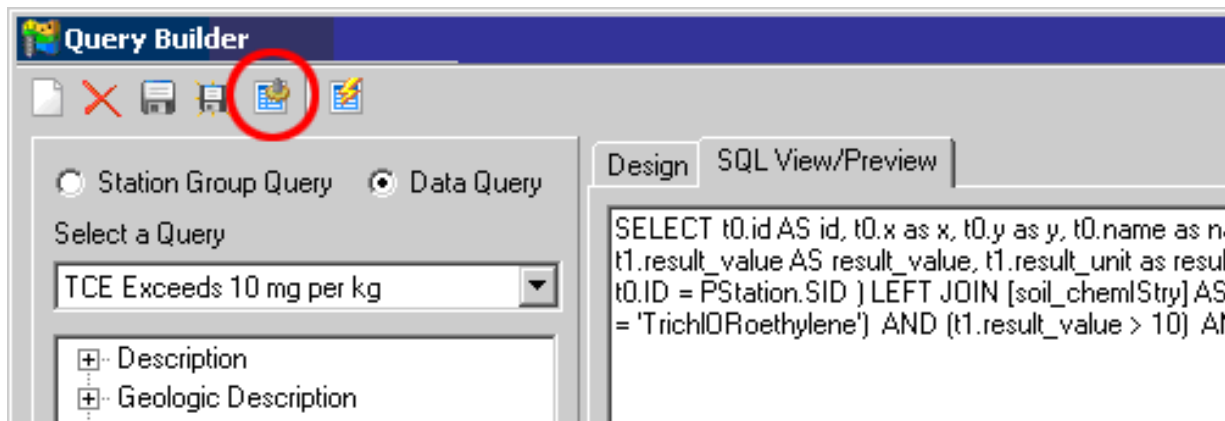
HydroGeo Analyst 3.0: The Query Builder feature within HydroGeo Analyst 3.0 (HGA) provides an efficient and simple method of querying data from your project database. This month's article will present the steps for developing a query that selects for chemistry data exceeding a result value of 10 mg/Kg for Trichloroethylene (TCE). Create a new Query: Right click over the Query heading, select New.



Select Display Fields: Select the required fields for the query, such as chemical\_name, result\_value and result\_unit, and then drag the fields to the Display Fields box. This will display the field as a heading with the query result. In the Conditions window, select the Expressions and Operators required. See the image below for the required selection for this example. To include the ability to display a query on a Map or BHL P, you may select the 'Map and BHL P Ready' checkbox to ensure the location information are automatically included. After the conditions have been chosen, click on the 'Generate SQL Statement' icon (outlined by the red oval below).



Once the SQL Statement has been generated, you may click the 'Execute SQL Statement' button (highlighted by blue oval below). The query result will be generated and present the display fields and conditions selected. Ensure you save your Query by selecting the Save or Save As button.



The Query can now be viewed in the main window of HGA, and may be edited at a later date. Next month's Tips & Tricks article will present the steps to load this query onto a Map, and contour the result values for visual presentation.

Row	id	x	y	name	chemical_name	result_value	result_unit
1	76	535572	4814384.99	SB-09	Trichloroethylene	13	mg/Kg
2	83	535231	4814502.99	SB-16	Trichloroethylene	22	mg/Kg
3	91	535361	4814544.99	SB-24	Trichloroethylene	90	mg/Kg
4	134	535680	4814642.99	SB-67	Trichloroethylene	12.22	mg/Kg
5	128	535631	4814694.99	SB-61	Trichloroethylene	15.05	mg/Kg

For more information, please contact:  
 Phone: +1-519-746-1798  
 Email: [sws-support@slb.com](mailto:sws-support@slb.com)  
 Website: [www.waterloohydrogeologic.com/support.htm](http://www.waterloohydrogeologic.com/support.htm)

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**Thank you for reading Water Solutions in Perspective.**

For more information about Waterloo Hydrogeologic, please visit: [www.waterloohydrogeologic.com](http://www.waterloohydrogeologic.com)



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2. After adding the "waterloohydrogeologic.com" domain, go to Tools > Options > Security tab > Download Pictures section > Change Automatic Download Settings button.
3. Select "Permit downloads in e-mail messages from senders and to recipients defined in the Safe Senders and Safe Recipients Lists used by the Junk E-mail filter."

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