



# SWS Enews



Schlumberger  
WATER SERVICES

Water Solutions in Perspective

October 2007

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SWS Enews Readership Survey -  
We want to hear from our readers!

## Product News

### Protecting Groundwater Resources

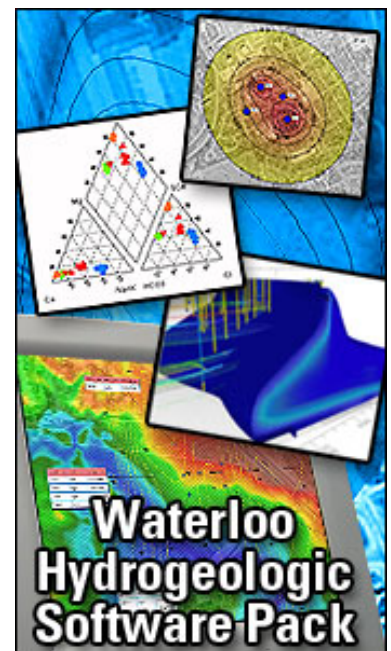
#### Managing groundwater and environmental projects?

Do you require a complete suite of tools to deliver results in every stage of your groundwater project?

Manage and protect your groundwater supplies with the "**Waterloo Hydrogeologic Software (WHS) Pack**". The WHS Pack is designed with the features you need to deliver your groundwater projects such as site characterization and monitoring, data management and GIS, and groundwater modeling. With this popular package, you will have the power to efficiently manage multiple aspects of your groundwater and environmental projects.

The WHS Pack includes industry-recognized software including [HydroGeo Analyst](#), [Visual MODFLOW Premium](#), [AquaChem](#), [AquiferTest Pro](#), [UnSat Suite Plus](#), and [GW Contour](#). For more information on how the WHS Pack can help

you manage your groundwater and environmental projects, [click here](#).



[Click here to learn more...](#)

For more information, contact us:

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Website: [http://www.waterloohydrogeologic.com/software/software\\_main.htm](http://www.waterloohydrogeologic.com/software/software_main.htm)

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## Expand Your Waterloo Hydrogeologic Software Pack to the Field

**Start your projects with a strong foundation.  
Get the data you need.**

Getting the data you need for today's environmental projects often represents a significant cost when only conventional methods of manual data acquisition are considered. With the current trends in regulatory review and labour costs always on the rise, today's project managers require more and more data to be collected and analyzed in the same, or less amount of time. The Diver line of dataloggers and the WHS Pack allow these same project managers and field technicians to gather the volumes of data they require, then manage and report it with the speed and efficiency they demand.

Start your project off with a strong foundation by getting the volume of data you need with our Diver dataloggers at a price that's competitive. Then manage, analyze and report it with industry-recognized software. It's that easy.

- [Micro-Diver](#)
- [Mini-Diver](#)
- [CTD-Diver](#)
- [Cera-Diver](#)



The latest generation of Diver groundwater monitoring dataloggers

For more information, contact us:

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

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## Consulting Services News

### Multilevel wells save time and money in California

The US Army Corps of Engineers contracted consulting engineers MACTEC E&C to oversee groundwater investigation and remediation design at the former Fort Ord army base in California where carbon tetrachloride (CCl<sub>4</sub>) had migrated from a shallow aquifer to two underlying aquifers. Characterizing the plume in the shallower aquifer was quite easy, but investigating the deeper aquifer posed several challenges. Located 350-500 feet below grade, the aquifer consists primarily of coarse sands and gravels. Historical groundwater flow directions in this aquifer have varied significantly, due to the effects of municipal pumping which resulted in seawater intrusion.

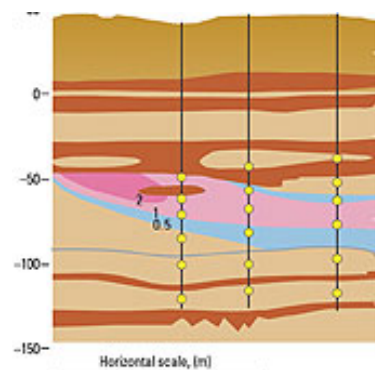
MACTEC chose the Westbay System technology for its investigations. Fifteen Westbay multilevel well systems have yielded valuable groundwater pressure and quality data that greatly improved the characterization of the complex distribution of dissolved CCl<sub>4</sub>.

To read more about this case study [click here](#).

## SWS Exhibiting at Workshops & Conferences Around the World

### Upcoming Events

- **WEFTEC '07 Water Environment Federation Exhibition**  
**Date:** October 15 - 17, 2007  
**Location:** San Diego Convention Center, San Diego, California  
**Booth:** HALL A, Booth 6844
- **6° Congreso Nacional de Aguas Subterráneas - ASOCIACION GEOHIDROLOGICA MEXICANA, A.C**  
**Date:** October 17-19, 2007  
**Location:** Puerto Vallarta, Jal.  
**Booth:** 10
- **Enviro-Pro Mexico 2007**  
**Date:** October 16-18, 2007  
**Location:** Mexico City, Mexico  
**Booth:** 302
- **IAH-CGS - Canadian Geotechnical Conference**  
**Date:** October 21 - 24, 2007  
**Location:** Ottawa, Ontario  
**Booth:** 34



Cross-section from Fort Ord, California, shows the carbon tetrachloride concentration ( $\mu\text{g/l}$ )



[Learn more about our Consulting Services!](#)

- **[International Symposium on Managed Aquifer Recharge](#)**  
**Date:** Oct 28-Nov 2, 2007  
**Location:** Phoenix, Arizona
- **[Monitoring Services Workshop - Monterrey, Nuevo Leon](#)**  
**Date:** October 15, 2007  
**Location:** Monterrey, Nuevo Leon - Parque Corporativo Santa Engracia
- **[Monitoring Services Workshop - Puerto Vallarta](#)** **Date:** October 17, 2007  
**Location:** Puerto Vallarta - Hotel Fiesta Americana Puerto Vallarta
- **[Monitoring Services Workshop - Mexico City](#)**  
**Date:** October 19, 2007  
**Location:** Mexico City

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## Training News

### Environmental and Groundwater Modeling Course Line-Up

Schlumberger Water Services is in the process of finalizing its calendar of training course locations and dates for 2008. We will be offering a full suite of Professional Short Courses on topics ranging from groundwater modeling using finite difference (Visual MODFLOW) and finite element (FEFLOW), to GIS data management for environmental professionals, aquifer performance test analysis, water quality data management, contaminated site risk assessment and regulatory review of hydrogeology studies. We will also be offering some specific customized courses that were tailored to meet the needs of specific industry sectors. As in other years, we will be offering all of our standard SWS "Open Enrolment" courses at our training facilities in Waterloo, Ontario, Canada as well as at various selected venues around the world.

If you are interested in one of our courses, or if you would like to discuss a customized "On-site Training Course", simply contact our Training Department at [sws-training@slb.com](mailto:sws-training@slb.com) and we will work with you to develop a course that provides the content, topics, laboratory exercises and software that you require.



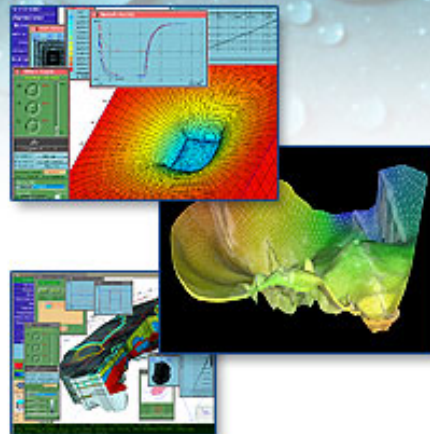
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# Finite Element Groundwater Modeling

Advanced Applications for Saturated/Unsaturated Flow & Transport, Density-Dependent Flow and Heat Transport



Advanced applications of groundwater flow and contaminant transport models using the Finite Element method are covered in this 4-day hands-on course. This course provides a more complete understanding of the use and applicability of finite elements in groundwater modeling



Course Details: [Visit our website for more details](#)

Registration: [Register online today!](#)

## OTHER POPULAR COURSES OFFERED AROUND THE WORLD...

Applied Groundwater Flow & Contaminant Transport Modeling

Aquifer Test Analysis

Contaminated Site Risk Assessment and Groundwater Modeling

Finite Element Groundwater Modeling

Making Sense of Environmental Data with HydroGeo Analyst

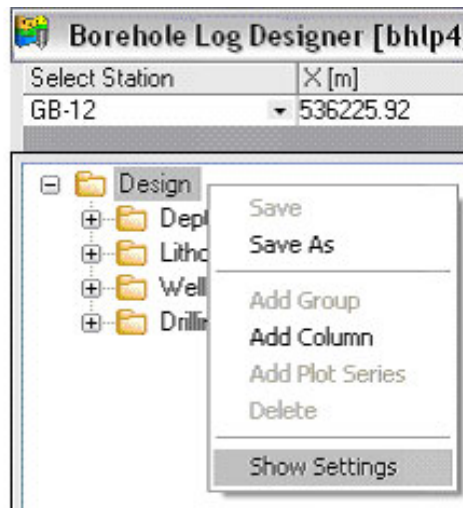
Water Quality Data Management & Modeling

Regulatory Review of Hydrogeology Studies

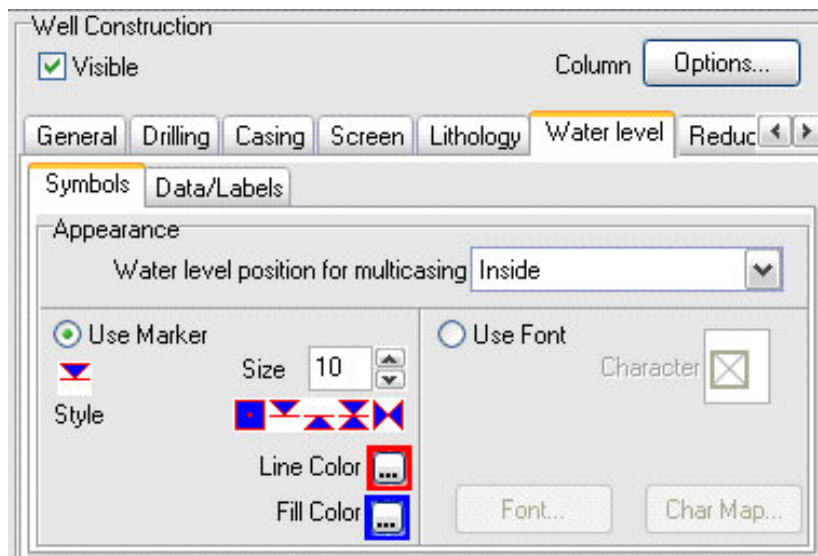
Modeling for the Mining Industry

A new feature available in [HydroGeo Analyst 4.0](#) (HGA) version 4.0 is the ability to customize how you wish to view your water levels in your Borehole Log Plots (BHLPs). Unlike version 3.0 which only displayed the most recent observed value, you can now select which water level you would like to see on the BHLP. You can now show the minimum, maximum, earliest, latest, or an average of the observed water levels with customizable symbols and labels. Follow the step-by-step instructions below on how to utilize this new feature!

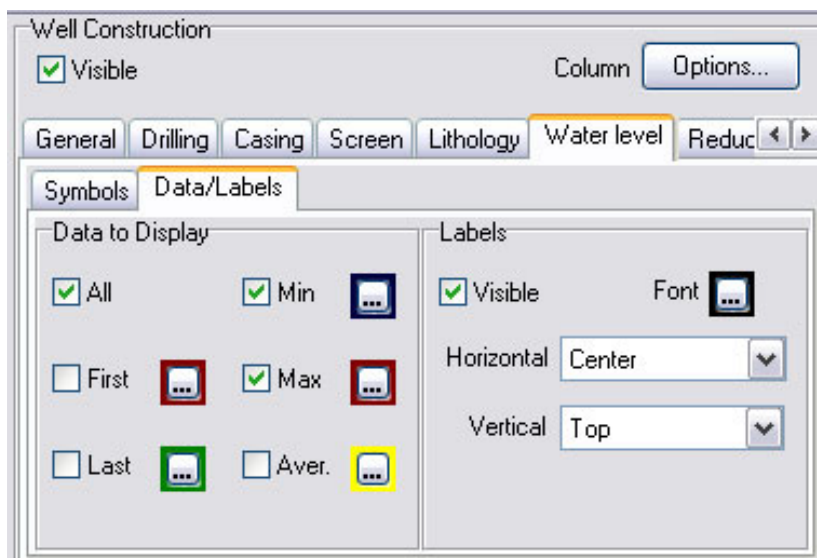
- Create a new borehole log plot and ensure that a well construction column has been added.
- Ensure that the stations used in the borehole log plot have water level data in the water level table.
- In the BHLP Designer, right-click on the "Design" folder found in the BHLP tree and select Show Settings.



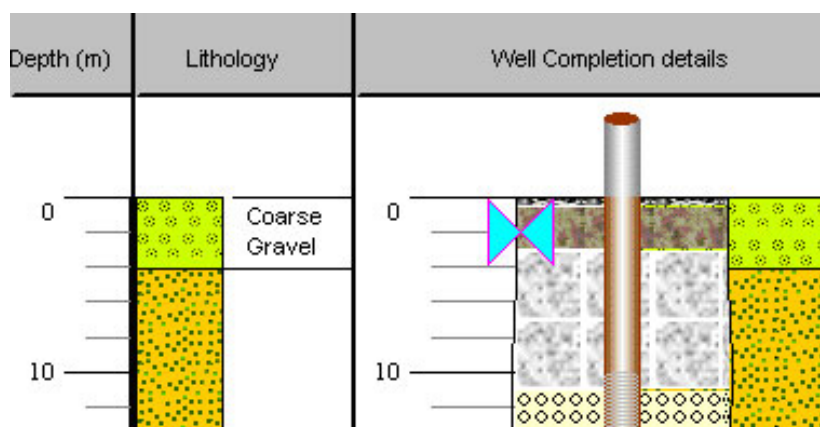
- Under Well Construction select the "Water Levels" tab to bring up the options available to customize the symbol and design.



- Select the desired symbol to represent the water level in your BHLP along with the desired colour scheme and labels. Select the Data/Labels tab to ensure that there is a checkmark beside "All" and then select "Apply". In this section you may also choose the Min and Max option to view the minimum and maximum water levels recorded.



- The desired changes will now be shown on your BHLP! Select OK to close this window.



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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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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."