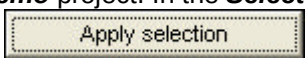
GW-Base 6.0 Tutorial

For testing and demonstration purposes, GW-Base comes with a complete dataset, a fictitious contamination with chlorinated hydrocarbons (CHC) in the Demo Project. The Tutorial will guide you through some of the basic input features and output capabilities of GW-Base.

Select an Area of Investigation

- Click on the ***Select Project*** icon . You will see a small window to the right of the icon which shows all available projects.
- Double-click on the ***Demo*** project. In the ***Select filter criteria*** window, under the ***Sub-projects*** tab, click ***Apply selection*** 

(i.e. select all wells inside the contaminated area). You may skip the "Start Check for Critical Samples" option by clicking ***NO***. After a few seconds, additional icons appear in the Tool Bar.

Edit the Well Data

- Click on the ***Edit well data*** icon . The Edit Wells windows will appear, displaying a list of all wells in the project.
- Select well **1** (as shown in the 1st no. Column) by double clicking on it or by clicking on the ***Detail view*** icon . The Data Sheet will open, displaying the ***Basic well data*** tab.
- You may choose to edit some of the Basic well data. Note that the x- and y- coordinates and the elevation data should not be modified.
- If a data field has a pull-down menu , you can use that menu to select a default value for the data field
- Click on the monitor icon  next to the ***Filename for site map*** data field. A window containing the site map for well **1** will be displayed.
- You may print the map from the graphics window, or enlarge the plan use the zoom tools in the graphic window.
- Close the graphics window to return to GW-Base***.***
- Now select the ***Geology/Drilling data*** tab. The geological profile of the well can be displayed by clicking the monitor icon  next to the ***Filename for geological profile*** data field.
- Now select the ***Sampling*** tab. Here you can define the time interval for water level measurements, and sampling, for your well. You can also select a default parameter catalog (Analysis program) for every sample.

- The content of each parameter catalog can be defined from the ***Catalog/Analysis programs*** option in the Main Menu. Under the ***Analysis programs*** section, the ***Program title*** field contains the available catalogs, and for each catalog ***Available parameters*** can be added to the ***Parameter in program*** list.

Entering data

- Now select the ***Water levels*** tab. From this page you can enter or modify the level measurements for your well.
- To enter a new value, perform the following steps:
- Click on the ***Insert record*** button  of the ***Level navigator***.
- In the ***Date/time*** data field, enter the date and the time (optional, by pressing the Space Bar after typing in the year) of the level measurement and press TAB to move to the ***Water level*** field.
- In the field ***Water level,*** enter the measured value (e.g. 11.54) and press TAB to move to the ***Value refers to*** field.
- The reference for this value is the well head (MP). Press TAB to move to the ***Quality*** field.
- The quality of the measurement is assumed to be acceptable; confirm the default value '**+**'.
- You will see that GW-Base has automatically calculated the value above sea level (mNN).
- Finish data entry by clicking the ***Post record*** button  of the ***Level navigator***.

- You can enter or modify sample or analysis data from the ***Samples/analysis*** tab. The left side of the page contains all sampling dates for the selected well, the middle contains the basic sample data (date, sample no., etc.), and the right side displays analysis values for each sample.

To add a new sample, perform the following steps:

- Click on the ***Insert record*** button  of the ***Sample navigator***
- In the ***Date/time*** data field, enter the date and the time (optional, by pressing the Space Bar after typing in the year) when the sample was taken. TAB through the rest of the data fields and enter the appropriate information. Note that some fields (such as Weather, Sample type, Color, etc.) have pull-down menus available.
- In the ***Analysis Program*** field, use the pull-down menu , and select ***CHC program***.
- Store the new sample in the database by clicking the ***Post record*** button  of the ***Sample navigator***.

Now you can enter analysis data for the new sample. Perform the following steps:

- Click on the ***Enter Analysis Program*** button  under ***Analysis data in selected sample***. The previously defined ***CHC program*** catalog window opens with the default parameters.

- Enter values for each parameter. Additional entries for parameter name and unit are not necessary. Click OK to complete data entry.

To enter a single parameter which has been measured in addition to the above catalog, perform the following steps:

- Click on the ***Insert record*** button  under ***Analysis data in selected sample***.

- Click on the pull-down menu  for the data field ***Parameter.***

- Select the desired parameter from the list (e.g. Sodium), or simply type the abbreviation for the required parameter (Na for Sodium).

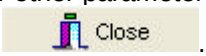
- Press TAB to move to the ***Value*** field.

- Enter the value for sodium (e.g. 54.3) and press TAB to move to the ***Unit*** field.

- The default unit for sodium is displayed as ***mg/l***, but you can also select another unit if your data does not match the default. (The default unit for each parameter can be defined from the Main Menu option ***Catalogs-Parameters/threshold values***, under the ***Details*** tab).

- Special comments are not necessary; you may confirm the default value ***OK*** in the field ***Special*** using the TAB key to move through.

- The new analysis is automatically saved into the database (as seen in the Parameter list).

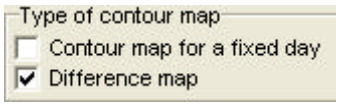
- You can enter other parameters as required, and then close the Edit Wells window using the ***Close*** button 

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Create a Contour Map

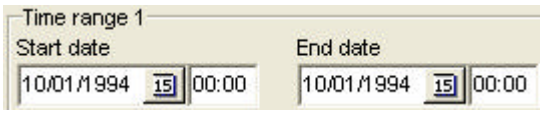
Now you will create a contour map for the water level in the first aquifer, for the time interval 10/01/1994 to 10/31/1994. Click on the ***Create contour maps*** icon  on the Tool Bar. From the ***Define search criteria for contour maps*** window, you can customize the search criteria for your contour map.

Please perform the following steps:

Select ***Difference map*** for your ***Type of contour map*** 

- Select ***Water level*** for your ***Data type*** (default), and ***Mean value*** for your ***calculation mode*** (default).

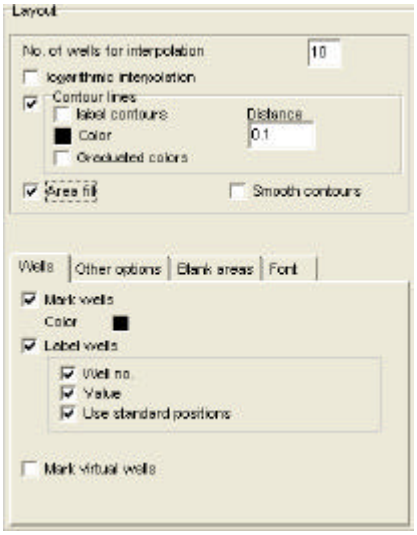
- For ***Time range 1*** enter **10/01/1994** in the ***Start Date*** and ***End Date*** field. (NOTE: The small date format can be defined in your Windows system configuration if necessary) and **10/31/1994** for ***Time range 2*** in the ***Start Date*** and ***End Date*** field.



- Click on the ***Additional criteria*** tab and select ***1st aquifer*** under the ***Aquifer*** list. Add this aquifer to the ***Selected*** search criteria by clicking on the  button.
- The other criteria (***Geological unit***, ***Coordinate bounds***) will not be used for this map.
- Begin the search process by clicking on the ***Start*** button.

Now GW-Base will search for all wells which meet the defined conditions, and all level data from these wells measured in the defined time range. When the search process is finished, the ***Create contour maps*** window will appear. From this window you can define the coordinate range, and the layout, for your contour map.

Please select the ***Layout*** options as follows:



In the ***Wells*** tab:

- Area fill
- Contour lines, distance 0.1 m
- Mark wells
- Label wells (including ***Value***)
- In the ***Other Options*** Tab:
- Draw background map
- When you click the ***Show*** button 

, the irregular spaced data is interpolated to a regular grid. When the interpolation is finished, the contour map will be displayed on the screen.
- To print the map, click on the ***Print*** button  in the tool bar. From the ***Output options*** window (opened after you select your printing device) you can define the scale, set line, font, and margin attributes, and enter project information for the printout.
- Click on the ***Layout*** button 

to return to the layout options. If you like you can now test other layout options or additional settings, then ***Show*** your new map.
- To return to the ***Define search criteria for contour maps*** window, criteria click on the ***Close*** button 

. You can now create different types contour maps for other time ranges, or other parameters.

- Click on the ***Close*** button to return to the GW-Base main program window.

Create Time Series Diagrams

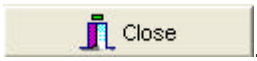
You will now create a time series diagram showing the water level, and the parameter CL (Chloride) for well **GWM1**. Click on the ***Create time series diagrams*** icon  in the Tool Bar. The ***Define Search criteria for time series diagrams*** window will appear, allowing you to define the search criteria for your diagram.

Please perform the following steps:

- In the ***Diagram 1*** option box, click on the ***Selection*** button 

. In the ***Diagram 1*** window, select ***Water level*** for your data type, then select OK to close the window.
- In the ***Diagram 2*** option box, click on the ***Selection*** button. In the ***Diagram 2*** window, select ***Analysis*** for your data type, and use the pull-down menu  to select ***Chloride (Cl)*** for your parameter. Once your parameter has been updated, select OK to close the window.
- Under the ***Time range*** section, enter a ***Start date*** of **01/01/1986**, and an ***End date*** of **12/31/1998**. You may leave the ***Tim***e fields set to their defaults.
- Under the ***Wells*** section, highlight well **1 and 2** and click on  to add to the ***Selected*** list (you can add a maximum of 10 wells for the diagram).
- Click on the ***Start*** button to begin the search process.
- GW-Base will search all ***Cl*** values for the selected well(s), measured within the defined time range. When the search process is finished, the ***Create time series diagrams*** window is displayed. From this window you can define the layout of your diagram.
- Accept the default settings and click the ***Show*** button 

. The diagrams are displayed on the screen showing your search results, and a legend in the bottom right corner.
- To print the diagrams, click on the ***Print*** button  in the tool bar..
- You can return to the layout screen by clicking on the ***Layout*** button 

, and test other diagram options.
- To return to the search criteria, click the ***Close*** button 

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- Click the ***Close*** button from the ***Define serach criteria for time series diagrams*** window to return to the GW-Base main program window.