D07 • Document panel

Accessed in the control panel with Document



Information: Enter general information and comments



Units : View/edit the document units. See section D06.3 for a description of the Units dialog.



Load Well Data: Load general well logs (open hole Gamma Ray, deviation survey, caliper etc.)



Well Details: Manual input of following component: ID, Deviation or TVD, roughness, Perforations, Reservoir zones.

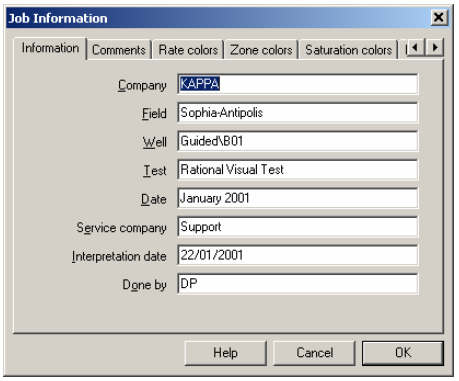


Well Sketch: Create/edit a well sketch for the current survey. If a well sketch has been created in one survey, selecting this option makes the sketch visible in the current survey.

D07.1 • Information

Information tab

When a new session is initialized, the first task is to supply some general job information. One can return to this dialog at any later stage of an interpretation. In the first dialog page (Information tab), general information about the Well/Job can be entered. This information will appear in the report header as shown below and the main result page of the Report (see chapter D13).



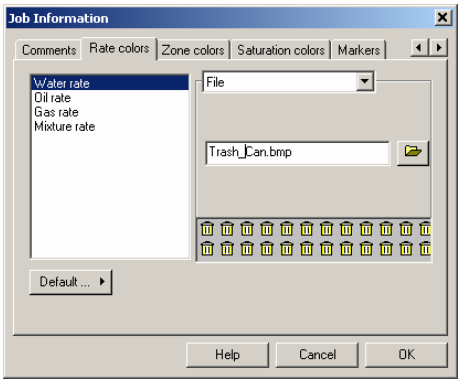
KAPPA	Job Information	B01
	Company: KAPPA Field: Sophia-Antipolis Well: Guided\B01	Test: Rational Visual Test Date: January 2001 Survey: Production #1

Comments tab

Any comments about the job may be entered here. This information will be printed on the first page of the hardcopy report.

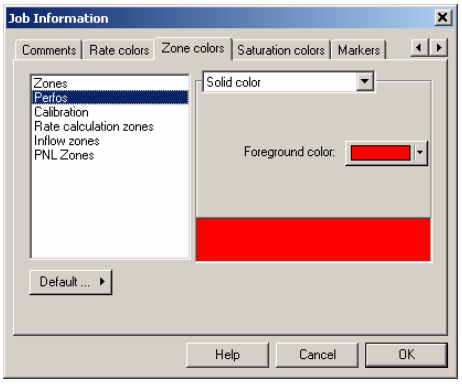
Rate colors tab

Can be used to redefine the rate colors for the current document. The setup can be stored as default in the Windows Registry.



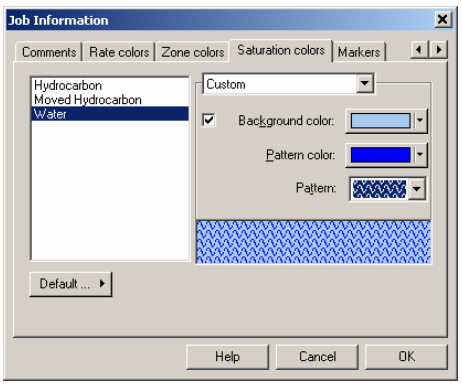
Zone colors tab

The aspect of all zones (reservoir, perforation, calibration, calculation, inflow) can be redefined. A background color and pattern can be assigned. Changes affect the Z track, as well as well views.



Saturation colors tab

This dialog can be used to redefine the aspect of each bulk volume displayed in the volume of fluids view (see chapter D03). The fill area aspect (see section below) associated to each volume can be modified for the current session only, or be used as the future application default.



Fill area aspect

You can set and modify the fill area aspects for the rates (schematic or complete), zones, saturations in the Job/Information dialog on the Document panel.
For each area type, a list of the corresponding candidates will show on the left side of the dialog.
The aspect of each selected candidate can be set using a dedicated drop list:

- File: can be used to load a bitmap from a file,
- Custom: assign an optional background color, a specific pattern, and a pattern color.
- Solid color: uniform foreground color.

A preview of the current selected aspect will show on the right bottom of the dialog.

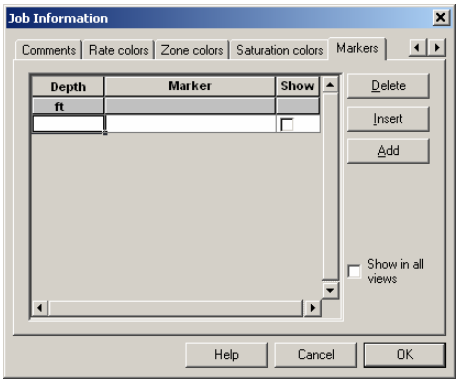
Changes can apply to the current session only, or be used as the future application default:



- Use Kappa Default for the current document.
- Use User Default (in the registry) for the current document.
- Save current document settings as User Default (in the registry).

Markers

Markers can be defined in this dialog with their legends. A checkbox can be used to set the display status of the markers individually. At the level of each view, an option can also be used to turn on/off the display of the markers set to "Show". Note that if you select the "Show on all views" this tag supersedes the view local setting. Also, if you select several lines in the grid, then right click in the "Show" column, a popup appears when you can show/hide at once all the selected lines.



D07.2 • Load Well Data

Loads General well logs - see Data structure, chapter D02. Typically this will include some of the following:

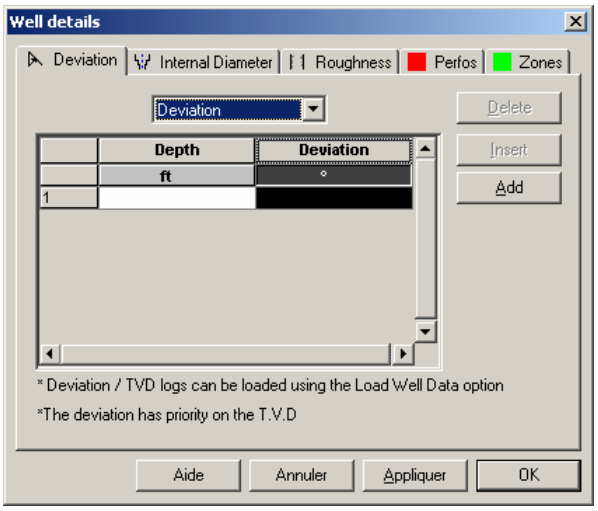
- Reference Gamma Ray (for depth matching). *To make full use of the automatic plotting facilities in Emeraude, the mnemonic of the reference Gamma Ray should always be set in the load dialog to the one found in the survey Log Data.*
- Deviation survey
- Caliper
- Reference CCL

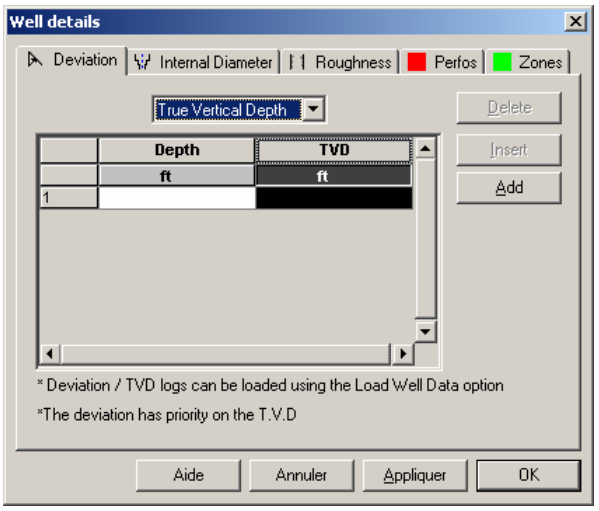
The channels must be loaded from a versus depth file. The format can be LIS, LAS, or Ascii. The load options are the same as when loading any versus depth pass, see chapter D04 for details.
Note: If a caliper channel is available in the Log Data, it is possible to construct a lateral average of this data, for instance in the Data Store, and to drop the result inside Interpretations.

D07.3 • Well Details

This option is used for the manual input of the following components of the General Well Data: Internal Diameter, Deviation/TVD, roughness, Perforations, Reservoir zones.
When a log is available, you should use the "Load Well Data" option instead. For instance, use the "Well Details" dialog to enter a constant deviation value, but if you have a deviation or TVD log, load it using "Load Well Data".
Additional specific information follows:

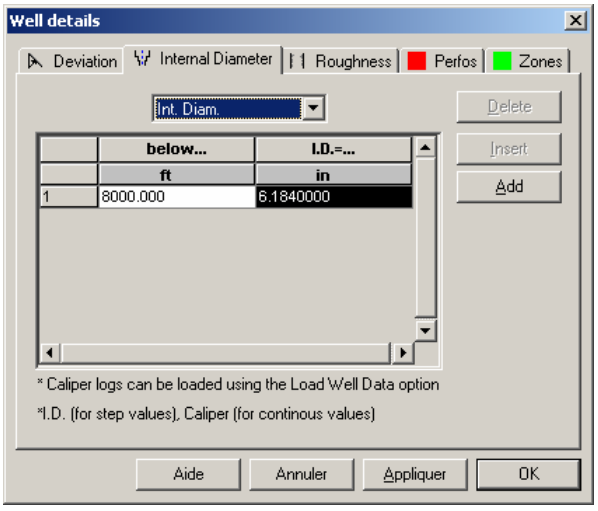
Deviation/TVD

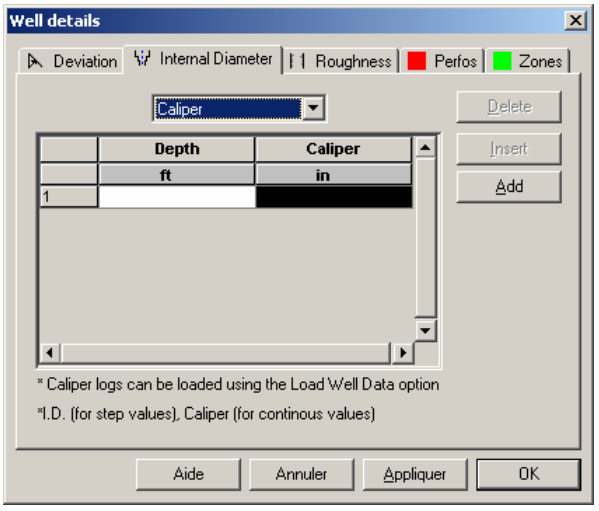




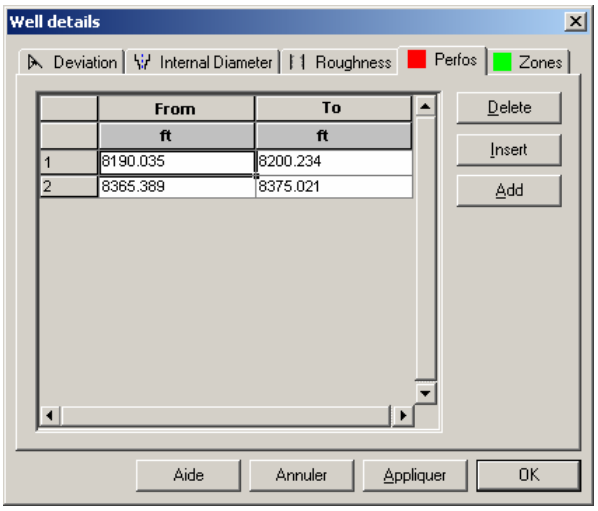
If no TVD is entered the well is assumed vertical.

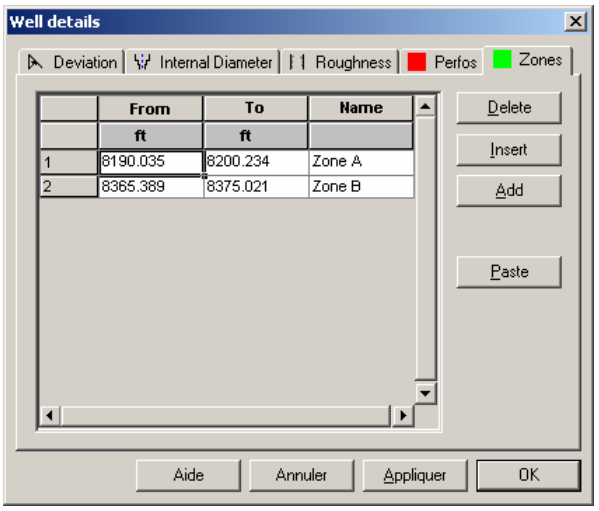
Internal Diameter/Caliper





Perforation/Reservoir Zones





The Perforation/Reservoir zones are part of the General well data - see Data structure.

They can be input manually (Document/Well Details or Zones button of the zone toolbar).

They can also be created interactively by click and drag using the Perfos / Reserf toolbar button).

The perforations can be viewed/edited in this dialog. When they are created, they are displayed as **red markers** in the "Z track". They influence the calculations as they are used to define the initial position of the inflow zones, the zones to which Emeraude assigns the contributions.

The reservoir zones can be viewed/edited in this dialog. When they are created, they are displayed as **green markers** in the "Z-track". The reservoir zones do not influence the rate calculations but they are essential if the SIP option is used.

Each zone can be given a name (default none). The names will appear in the Z track, if there is enough space. Also, when a name exists, a special option of the Print Setup (log page) can be used to instruct Emeraude to display the reservoir tops on the complete rate log track (Q).

Grid Definition/Editing

The grid is accessed either via the Document/Well Details control panel option, or using the Zones button of the zone toolbar, or by a double click on any existing zone in the Z plot. The grid is opened with the limits of the zones of this type. Existing values can be modified, zones added or removed.

Adjust Zones

Click once on the graphic representation of the zone in the Z plot, the zone is shaded and two white handles are opened at the top and bottom. Click and drag these handles to adjust the limits of the zone.

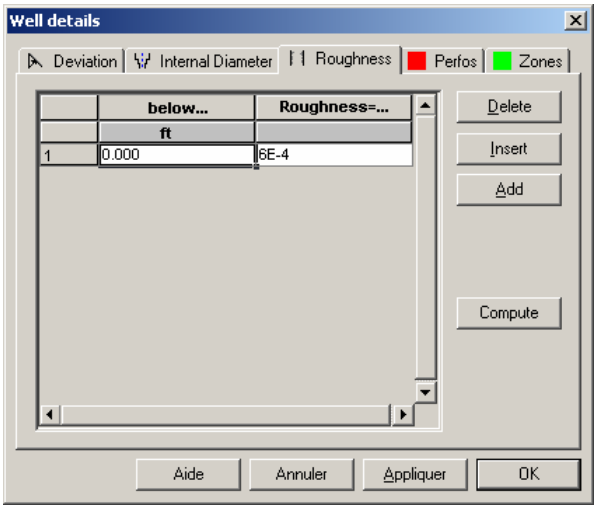
Delete Zones

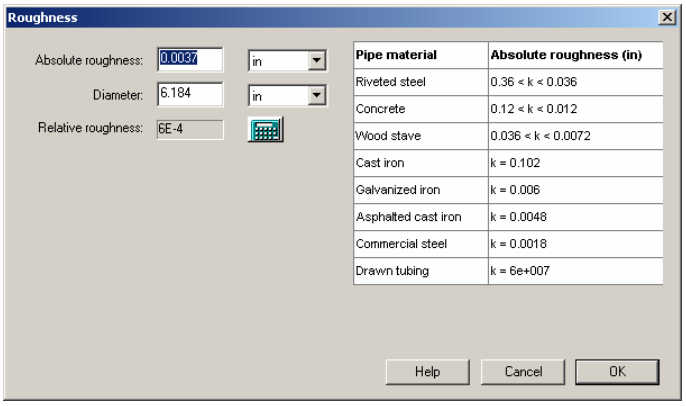
After selecting a zone by clicking on it in the Z plot, press the Del key.

Roughness

The user can input in the displayed spreadsheet the roughness values versus the depth at the top of each zone. If no roughness is entered it is assumed to be 0 at all depths. The "Compute" button can be used to calculate the roughness at given depth:

- Enter the depth in the first column.
- Move the focus to the corresponding roughness cell (press Tab)
- Select Compute



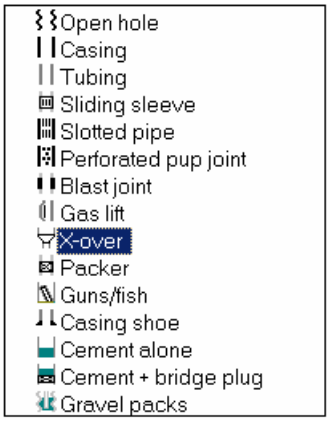


The Compute option calculates the relative roughness from an input of absolute roughness and internal diameter. When the internal diameter has been defined using the I.D. button, i.e. as a stepwise function, the Compute button automatically reads the ID at the desired depth. When no ID is found, the user can input the diameter manually.

After entering k, and entering or checking the ID, press  to see the calculated relative roughness.

D07.4 • Well sketch

The Well Sketch option of the Document panel is used to create and edit a Well Sketch view. The view is attached to a Survey, and thus needs that at least one Survey exists. When you have a Document with multiple surveys, and you have a created a Well Sketch in one of them, call the Well Sketch option in any other Survey to activate the view in this Survey as well. The well sketch is made of the components in the list next page.



The logical levels are indicated below. When you add elements you should comply with this hierarchy (no element/level is compulsory).

- Well
  - Open-Hole
    - Casing
      - [Casing: contained in parent]
      - Tubing [Multiple instances at same level = next to each other]
        - [Tubing: contained in parent]
        - Sliding Sleeve , Slotted pipe, Perforated pup joint, Blast joint, Gas lift mandrel, X-over, Cement alone, Cement + bridge plug, Gravel packing
      - Casing shoe, Cement alone, Cement + bridge plug, Guns/fish, X-over, Packer, Gravel packing

Elements are given dimensions as follows:

- Casing/Tubing/Open-hole: Two lines are required for a single ID: the first line gives the "from" and the second line the "to" depth. When more than two lines are entered, segments are from depth N to depth N+1, with the ID of line N."

- Sleeve, slotted pipe, perforated joint, gas lift mandrel, blast joint: a "from" and "to" depth are entered. The component is drawn with the ID of the parent tubing element.

- X-over: "from" and "to" depths are entered. The ID's (from to) are those of the tubing elements found at the "from" and "to" depths.

- Packer: "from" and "to" depths are entered.. Emeraude will find out which elements are present at those depths and "fill" the appropriate gap with the packer schematic.

- Guns/fish: a "from" and "to" depths are entered.

- Cement alone, Cement + bridge plug: "from" and "to" depths are entered.

- Gravel pack: "from" and "to" depths are entered. The gravel packing will fill in the space between the parent and whatever relevant descendants.

The well sketch dialog contains 4 main components:

- To the left, a window showing as a tree diagram the current well sketch
- To the right, a tab with the list of possible completion elements
- At the same location, a second tab to view/edit the geometrical information of the components
- At the bottom, a frame to display relevant messages/indications

When the Well Sketch dialog is opened the first time, a tree diagram to the left shows the well alone, without any completion element attached to it. The "Components" tab shows the components of the Fig A03.16 and you can select elements from the list, drag them to the left, and drop them at the proper level below the Well node. When this is done (or as you do it), you can activate the "Geometry" tab to define the geometrical properties of each element in turn. Note that when you select a component, a text in the bottom frame indicates what kind of information is required. Also, if anything is incorrect, this same frame displays a message explaining the cause of the problem.

Note that to Delete a component, you can select it in the tree, press the Del key, or right click with the mouse to access a popup menu with a Delete command. When an element is deleted its descendants are deleted as well.

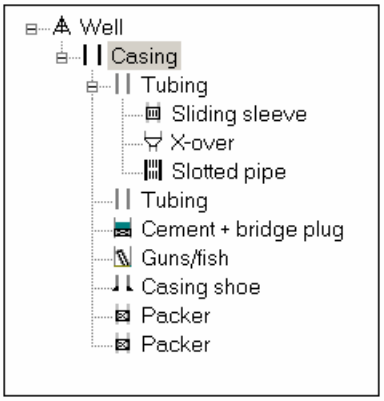
The Fill Area option if on by default. If you disabled it (right click on the view to access the popup) the well sketch will be plotted without shading.

Block Shift

Note that the well sketch can be “block shifted”. To enter a shift value, select the “Well” in the tree diagram, and then activate the “Geometry” tab.

Well sketch example

This example illustrates the logic of the well sketch components/options. The Figure below shows the overall completion definition, while the table below gives the geometry details for each item. The figure on the right shows the corresponding sketch (with the Fill area option activated and without).



The geometry of the various elements for this example are given below:

***Casing**: [Depth ft, ID in]:*
[3000,10]-[3220,10]

***Tubing 1**: [Depth ft, ID in]:*
[3000,3.5]-[3160,3.5]-[3162,2.8]-[3180, 2.8]

***Sliding sleeve** [From ft, To ft]: [3120 - 3124]*
***X-over** [From ft, To ft]: [3160 - 3162]*
***Slotted pipe** [From ft, To ft]: [3170 - 3180]*

***Tubing 2**: [Depth ft, ID in]: [3000, 2.8] – [3140, 2.8]*

***Packer 1** [From ft, To ft]: [3130-3134]*
***Packer 2** [From ft, To ft]: [3166-3168]*

***Cement + plug** [From ft, To ft]: [3190-3200]*
***Fish** [From ft, To ft]: [3210-3220]*
***Casing shoe** [Depth ft, ID in]: [3220, 14]*

