TerraStation – Borehole Imaging

Imaging logs are a valuable tool in both structural and sedimentological interpretations of well data. They can be used to match core to log depth, help in facies characterisation, and provide accurate dip information for paleocurrent analysis. They are also very useful in the interpretation of fractures in reservoirs, especially in determining whether fractures are natural or drilling induced. Borehole breakout analysis is another use of this type of data. Due to the high resolution of imaging tools, they can often provide insight into the thickness and distribution of thin beds in a sequence.

Input Data

Borehole image data from a variety of tools is supported. This includes FMI, EMI, HMI, OBMI, STAR, CAST, UBI, FMS, OMRI, XRMI, CMI, COI, QuantaGeo™, Earth Imager, and FAC-40. Other tools can be added as they become available. Input data formats supported for imaging data are LAS, LIS and DLIS.
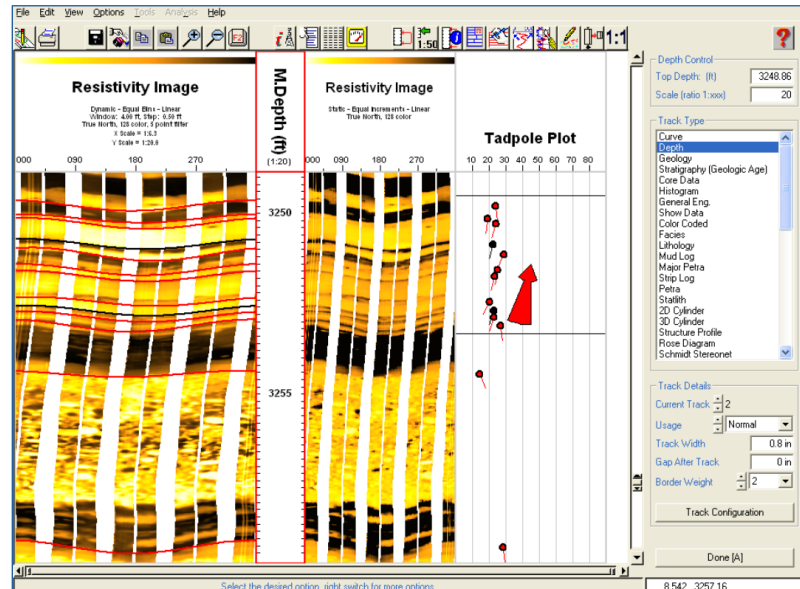

Data Processing

A number of processing functions are available for enhancing the quality of the data. These include speed corrections, pad and pad/flap correlations, swing-arm, EMEX and gain correction and „dead" button removal. Individual button shifts can also be applied.

Data Visualisation

Dynamic and static normalisation of the data can be performed. The user has full interactive, control over the colour mapping of the data, with several predefined colour maps being provided. Colour maps can be created, saved, and restored. The dynamic normalisation parameters can also be controlled interactively to allow you to see more than the standard logging company output. Edge enhancement and other filtering functions are provided. The data can be displayed in the false colour image mode or as individual wiggle traces. In addition, a "core-like" display of the imaging data can be displayed. This can be viewed from any angle or direction.

Data Interpretation

Any number of user definable pick categories and subcategories can be defined. Features identified on the image can be defined using an interactive "point & shoot" method. Picks can be displayed in relative or absolute orientation. You can set the depth of investigation of the tool to ensure the dips and azimuths are accurately computed. Picks can be made on any borehole imaging data as well as dipmeter logs and circumferential core photographs. A full suite of SCAT and other dip and azimuth data displays are available to aid in your analysis of the picked data. This includes an interactive stereonet based dip analysis option.

Support and Training

Terrasciences provides immediate telephone and email support by trained earth science professionals. A regularly updated web site, electronic newsletter, and training courses are also available. All product upgrades are included in the maintenance and support fee.

Product Specifications

- Image data loading from LAS, LIS and DLIS files.
- Supports all imaging tools, both wireline and LWD, including , NGI, FMI, OBMI, Dual OBMI, FMS, Earth Imager, GeoExplorer, XRMI, COI, Slim COI, RMI, UBI, CBIL, STAR, RAB, ARI, ADN and more.
- Supports images written as RGB values, as well as the usual sonic and resistivity/conductivity values.
- Supports a user definable depth of investigation setting to ensure accurate computation of dips.
- Provides Magnetometer, Caliper, and accelerometer QC displays and orientation data correction.
- Processing options include: borehole geometry corrections, accelerometer corrections, pad to flap correlation, pad normalisation, swing arm corrections, dead button removal, EMEX and gain corrections, button equalisation.
- Image editing and splicing capabilities.
- Full vertical and horisontal scale control.
- Interactive, user-definable colour maps.
- Automatic and manual dip generation.
- User definable categories for dips.
- Full SCAT plotting options for dip information.
- Breakout picking and interpretation.
- Identifying critically stressed fractures.
- Sand count analysis.
- Composite log design and display.
- Image filtering options to enhance features within the image.
- Graphics output to CGM, Postscript, PDF, EMF, BMP, JPEG, TIFF, and more
- Static display and dynamic display options with user-defined window and step sizes.
- 3D visualising capability with option facies and frac stage display.
- Fully interactive dip interpretation package including stereonet analysis.
- Fracture aperture analysis, fracture length, fracture separation, fracture density analysis.
- Imaging logs can be displayed in cross section by utilising other modules within the TerraStation.
- Display alongside any other borehole information (wireline logs, core photos, lithologic interpretation, completion information, and more).