

# NeuraSection

## Integrated Geological Evaluation



*NeuraSection* allows you to evaluate and display all available geological data. Users can visualize, analyze and create presentation logs, maps, sections and montages, as well as delineate reserves, in a process that maximizes data resources and minimizes the time required to create and present the total play concept.

*NeuraSection* is flexible enough to use your raster logs and maps to

get you started right away, yet powerful enough to use your entire digital data set for a full analysis. Raster and LAS logs can be normalized, correlated, annotated and used in sections faster and less expensively than either paper or digital-only methods. A basemap is generated automatically with your well data, while scanned or vector maps provide the reference for your well selection or analysis.

Log correlation is quick and easy with LAS files and depth calibrated rasters. Correlate in log or cross section views. Updated information is automatically reflected in all views and can be shared among projects. Cross sections are readily created using templates or user-defined parameters. Raster, LAS and stick wells may be displayed along the deviated wellbore path in structural cross sections. Stratigraphic cross sections are generated automatically with an option to display missing intervals.

Rapid mapping in *NeuraSection* enables the geoscientist to create presentation quality maps through a set of automated mapping tools. Auto-contouring allows users to quickly generate contours for different map types within the same AOI without leaving the workspace. Gradient or discrete fills can be added for formation evaluation and reservoir displays. The user can manually draw contours as well as freely edit and/or infill auto-generated contours. Volumetric reserves can be determined from these custom structural or stratigraphic maps.

Bring everything together in a *NeuraSection* montage and export your data to any E&P application. The montage allows you to incorporate show logs, cross sections, maps, reports and any Windows graphics to present everything needed for evaluation and decision-making. *NeuraSection* brings together the whole play concept in an efficient solution.

### Neuralog Desktop Integration

*Neuralog Desktop* is a GIS based interface that integrates with *NeuraSection* to enable users to quickly visualize their geological data with an on-screen interactive display.

- Display and open cross sections, AOIs and wells from any *NeuraSection* project
- Area tree for quick well and well log recognition
- *NeuraSection* toolbar is integrated to allow users to quickly create or edit projects
- Manage projects and well logs across your corporate workspace

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## Correlation

Log Correlation can be done in log-to-log mode or in the cross section. Any depth calibrated log is ready for correlation with manual picks or auto-posting of imported picks.

### Flexible Well Log Correlation Options

- Click to correlate down the stratigraphic column or across multiple logs
- Optionally correlate multiple wells simultaneously using even thickness model
- Correlate in measured depth or true vertical depth
- Align well log views on Structural or Stratigraphic datums
- Define custom Strat Sets for refined correlation workflow
- Search Strat Set to quickly find desired surface
- Switch between correlation in cross sections and log-to-log, as needed
- Mark formation tops and bases with "lock to depth" option
- Add fault markers with type and missing or repeat section

## Logs

Individual logs can be marked and annotated to create a show log for your working reference, final presentation, or inclusion in the montage.

### Show/Work Log Displays

- Display tops, bases, faults, etc.
- Create composite logs using multiple raster/LAS logs and annotate to make type logs
- Display PERF, CORE, IP, DST, Production and Well CUM data
- Post formatted detailed user text
- Place bitmap and metafile graphics; lithology, engineering, and geology graphics included
- Annotate with user-defined free-form drawing/filling

### LAS Well Log Presentations

- Create custom templates for curve fills, track, scale, color, line type, backup, etc.

### Counting Tool

- Click and drag over the interval for instant counts
- Create lithologic, fluid or user-defined interval counts
- Color and pattern fill intervals
- Auto-post counted interval data on maps and export for other users/applications

### Well Diagram

- Shows log types and depth intervals for one or many wells as selected

## Cross Section

Cross Sections are an integral part of *NeuraSection*, and any number of structural or stratigraphic cross sections can be created and saved.

### Well Log Displays Normalized

- Display logs with English or metric depth scales in any vertical scale and width, regardless of original.

### Deviated Wells Displayed in Cross Section

- Enter survey information manually or import from another data source
- Display corrected logs in True Vertical Depth
- Display Log images and LAS along wellbore path, even for horizontal wells

## Cross Section Views Automatically Generated

- Create section templates that control every aspect of the display
- Switch between Structural and Stratigraphic views
- Re-hang on any Stratigraphic Datum to create a new view
- Space wells equidistant, geo-proportional or custom
- Swap order of logs or order of wells

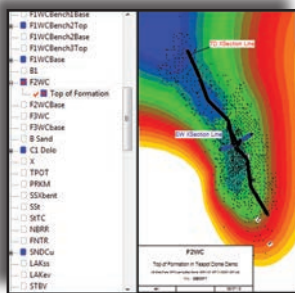
## Composite Log Presentations for Wells with Multiple Logs

- Drag and drop logs in desired order in the cross section
- Merge digital and raster data
- Crop out undesired tracks
- Merge multiple log runs into the same presentation

## Faults and Top Profiles

- Shape profiles and use optional contour intersections from your maps
- Create custom profiles with colors, fills, patterns and line styles
- Connect fault profiles to fault markers in the wells or draw fault profiles independently
- Break top profiles with faults and create displacements across the faults
- Restore missing sections in wells for stratigraphic cross section displays

## Maps



Reference Maps can be imported or created on-the-fly from well data. The Area of Interest (AOI) allows users to create multi-surface formation, net isopach and net pay maps. All maps can be posted.

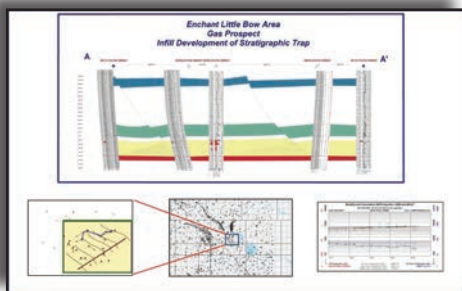
### Reference Maps

- Post well status and header information
- Select wells from map to create cross sections
- Display map image, geotiff or vector map layers
- Apply well filter to remove unwanted wells from view

## Working & Presentation Maps

- Work with multi-level map management system based on stratigraphic column
- Post top, net gas, sand, or any rock or fluid parameter you have picked
- Create and edit computer generated contours for multiple maps within the same AOI
- Manually create and edit contours for your interpretation
- Add gradient or discrete fills to contours to enhance your evaluation
- Create simple faults or fault polygons using optional throw, heave, and dip calculations
- Create displacements across faults
- Display single maps or overlay several maps for referral and integration
- Calculate volumetric reserves from structure or stratigraphic maps and create reports

## Montage



*NeuraSection* has full montaging capabilities to complete your evaluation process. Logs, maps and sections can be added to the montage, along with any other windows graphics such as core photos, spreadsheets, well reports, etc. "Drag-and-drop" placement makes it easy to add documents and images to the montage. Once complete, the montage can be sent to any printer/plotter or saved as PDF, TIFF or JPEG files. Presentation quality montages will sell your prospect play.

## Quality Improvement

Quality Improvement is a part of all Neuralog products. In *NeuraSection* this is primarily achieved through the integration with other Neuralog products where data is captured and validated. There are some critical quality control functions within *NeuraSection* as well.

- Well Diagrams show log types and depth intervals wells to locate missing data
- Well spots are color coded in map to indicate wells with missing logs
- Well Filter lets you search on and inspect wells of specified criteria
- Log List View tracks which logs have been calibrated and which have attributes set
- Bubble map shows you how well your interpretation matches top picks
- Line of intersection shows you how well your contour map matches the interpretation in the cross section

## Data Input

### Automated DB Connections: Well/Log Data

NeuraDB, Divestco, LogTech LogArc, P2ES PetroLAB, MJ Systems

### Integrated Log Data

DrillingInfo, LogTech/LogArc, A2D Technologies smartRASTER, A2D Technologies SIF Files, MJ Systems LogSleuth, Geographix and PETRA, Riley Electric Log Data, LAS Batch File Loader, MMS Logs (Images & Well Data), Neuralog NLG/WLG Files

### LAS Digital Files

- LAS 1.2 and LAS 2.0

### Scanned Images and Depth Calibrated Images

NeuraSection accepts any standard TIFF image as input. Color, grayscale or b/w images are supported. Images can come from industry standard data providers or more conveniently, directly from the NeuraScanner.

### Well Data With Assigned Logs

NeuraDB, A2D Technologies SIF Files and SmartRaster, Drillinginfo, MJ Systems LogSleuth, MMS Logs (Images & Well Data), LAS Batch File Loader, Neuralog WLG Files, Riley Electronic Log Data

## Data Output

### Well/Log Data

GCS Well and Top, Generic ASCII, GeoGraphix WellBase V2 and V3, GeoQuest Finder 8.5 - 9.1, Landmark OpenWorks 98.5 – 2003, MJ Systems LogSleuth Well File, NeuraSection Project, Normalized Log Images or Intervals to StratWorks

### Map Data

AutoCAD DXF, ArcView Shape, DGI EarhVision, GeoQuest CPS3, GeoQuest Finder, Landmark Graphics Metafile, Landmark ZMAP Plus, MFD, ASCII, Landmark SeisWorks, PI/Dwights 97 Download well format, Formatted ASCII

## NeuraSection System Requirements

- Pentium 4 Processor
- Minimum 100 MB Disk Space
- 256 MB RAM
- Graphics - 800 X 600 (or higher) with 16 bit high color recommended
- Windows 2000/XP/Vista/7
- Support for both SQL and Access databases

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