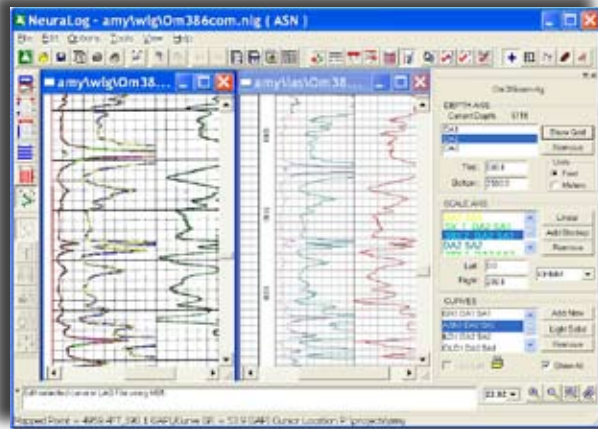


# NeuraLog

## Automated Log Digitizing, LAS Editing, and Quality Improvement



*NeuraLog* is the most widely-used log digitizing solution in the oil and gas industry. Automated digitizing streamlines your workflow by sending reliable digital data to time-critical projects. Unique quality improvement, editing and validation assure that your digital log data, which often comes from vendors where quality is uncertain, can be corrected and verified to meet your needs. For those working with rasters, *NeuraLog* can create straightened and depth registered images for your geological applications. *NeuraLog's* simple interface, driven by workflow wizards and

automation, makes it easy to get your work done quickly. Automated depth gridding and curve tracing expedite this once tedious task of capturing log data. However, this is only part of the power of *NeuraLog*. Image warp/stretch are corrected by internal algorithms calculated from the log's grid model. Real-time visual verification is achieved, as the curve trace directly overlays the image original. Once curves are traced, a log quality index value is computed, giving you an indication of the quality of each curve as well as total log quality. Curve calculations are available for basic log petrophysics, and curve mathematics allow you to depth shift or perform inverse operations. Finally, LAS data accuracy can be confirmed with our Virtual Light Table. Without these critical steps the quality of your data, and subsequently your analysis, is unknown. In short, *NeuraLog* allows you to verify and edit your log data on the fly to produce the best possible results.

### Automated Tracing

Neural Network Speed and Accuracy drive tracing algorithms for better-than-human tracing.

- Highlighting of traced curve for immediate feedback
- Solid and dashed curve tracers to account for curve crossings
- Built in grid model to account for curves crossing the grids
- Auto-stop error detection
- Interactive curve editing with immediate resume tracing

### Interactive Log Display

*NeuraLog* displays the log image and traced curves directly on your computer monitor, providing immediate feedback.

- Point and click interaction with the tracing tool
- Error correction at any point in the tracing process
- Automatic scrolling through log during curve trace

### Image Warp and Stretch Correction

*NeuraLog* corrects for warp and stretch, a common problem in poor log images, automatically from depth grids to produce quality log images and digital data.

**Neuralog**

Turning Paper Into Petroleum

## Unlimited Backup Scales

*NeuraLog's* automated tracing functions work on unlimited backup scales, automatically patching together the different sections of curve for streamlined curve output.

## Quality Improvement

*NeuraLog* includes a comprehensive set of tools to improve the quality of your log data. The Log Quality Index (LQI) provides an overall measure of Quality Score of in-house or vendor data. The *NeuraLog* Quality Improvement tools include checks for pixel overlay, spikes, gaps, and depth gridding.

For verification of LAS files the Virtual Light Table shows the match between the log image and digital data overlay quickly and visually. The LAS report summarizes your data to check for norms. *NeuraLog's* mission is to make ensure quality data. Raising the data standard is important to the industry and to you.

## Multiple Runs/Curve Splicing

*NeuraLog* provides the option of merging multiple runs of the same curve within a log into one LAS file. In addition curves from multiple files may be merged into a single LAS output.

## Digital Log Editing

- Customizable LAS Curve Template
- Custom Backup Scales for Amplified and Multi-Wrap Scales
- LAS Curve Edit
- Curve Arithmetic
- Baseline Shift
- Depth Shift
- LAS File Merge

## Curve Calculations

*NeuraLog* comes pre-loaded with various methods to calculate v-shale, porosity, water saturation as well as other standard conversions. Custom equations can be saved and edited.

# Data Input

## Scanned Images

*NeuraLog* accepts any standard color, grayscale or b/w TIFF, JPEG or BMP image as input. *Neuralog, Inc.* recommends the *NeuraScanner*.

## Data Files

- Depth-calibrated rasters from industry data vendors or other applications
- LAS 1.2 and LAS 2.0
- LAS Files from OpenWorks

## Well Header Files

- PI Dwrights Fixed 197 • IHS Energy Well Fixed 297 • GeoGraphix WellBase V2 • LAS Headers
- Generic ASCII or Excel

# Data Output

## Vector Files

- LAS 1.2 • LAS 2.0 • AutoCAD DXF • PETRA ASCII Well Data • Tabbed Delimited ASCII

## Raster Calibration Output

- Neuralog Calibrated Rasters for NeuraSection • PETRA ASCII Log Image Calibration (LIC)
- GeoGraphix Depth Registration ASCII (DRA)

# NeuraLog System Requirements

Pentium 4 Processor • Min. 100 MB Disk Space • 256 MB RAM • Graphics - 800 x 600 (or higher) with 16 bit high color recommended • Windows 2000/XP/Vista