

GVERSE®
GeoGraphix®
Potential to Production



GVERSE PETROPHYSICS

Integrated log analysis for
comprehensive
interpretation

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A COMPLETE GEOSCIENCE PLATFORM



Streamline Exploration and Production Workflows

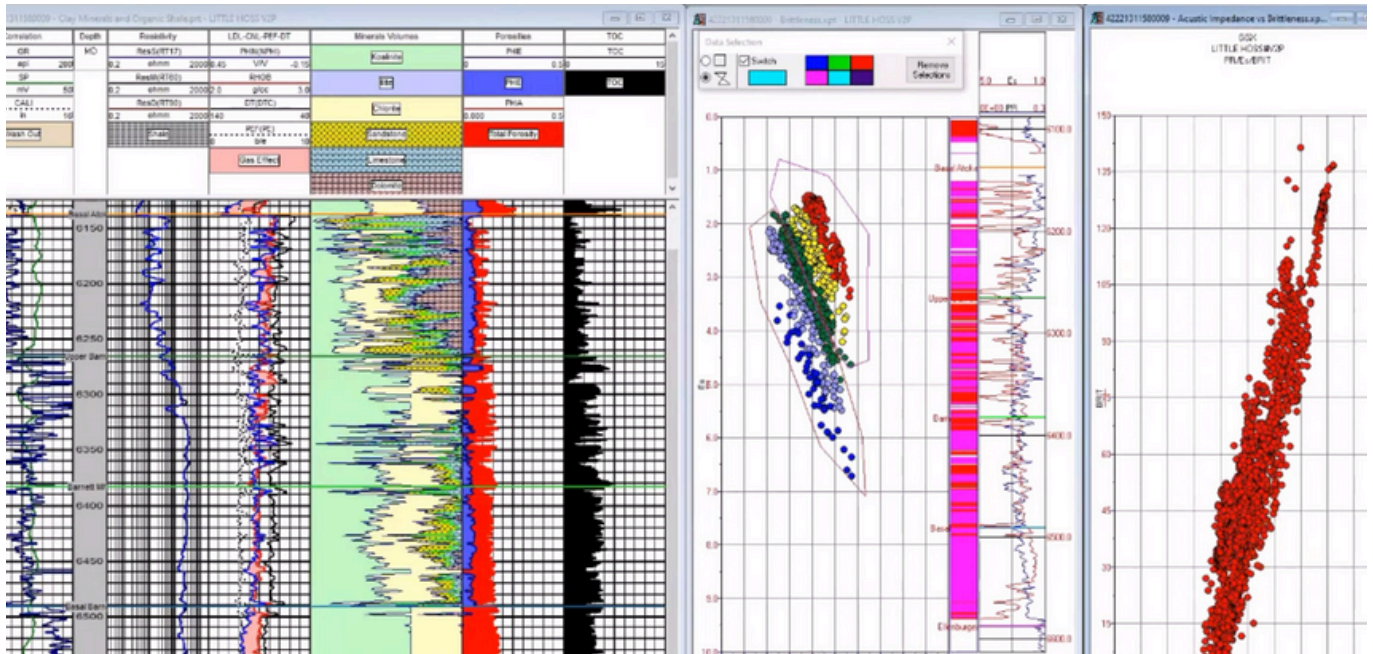
Our comprehensive GVERSE GeoGraphix solution integrates geological, geophysical, petrophysical, and data management tools allowing geoscience teams to collaborate and make rapid, accurate decisions.

GVERSE® Petrophysics is a petrophysical application designed to assist geoscientists and petrophysicists in analyzing and interpreting well log data and characterizing the reservoir using simple to advanced log interpretation workflows in a large multi-well multiuser environment.

- Comprehensive Well Log Analysis
- Effortless Data Integration Across GVERSE GeoGraphix Applications
- Python API for Advanced Data Utilization

Unlock the Depths with GVERSE Petrophysics

Elevate Your Reservoir Insights, Boost Efficiency, and Make Confident Decisions with GVERSE Petrophysics—From Well Logging to Resource Estimation, All in One Platform



Key Benefits

Intuitive Language

GVERSE Petrophysics uses a simple scripting language, allowing users to quickly build sophisticated petrophysical models. These models can be applied to individual wells or thousands, enabling both detailed well analysis and reservoir-to-regional scale formation characterizations. Models are viewable across log templates, cross sections, and 3D fence diagrams.

Scalable Functionality

GVERSE Petrophysics offers over 250 standard log analysis equations, including water saturation, lithology, and CBM models. Grouped into easy-to-use families, equations can be copied, edited, or linked to external models in Visual Basic, C, or C++ for solving complex formation analysis problems.

Seamless Petrophysical Analysis, Attribute Extraction, and Mapping

Users can extract attributes from petrophysical models for direct map creation, statistical analysis, or export. Integrated with ZoneManager, GVERSE Petrophysics supports detailed well-by-well and zone-by-zone analysis, with Pickett Plot parameter handling for comprehensive petrophysical workflows.

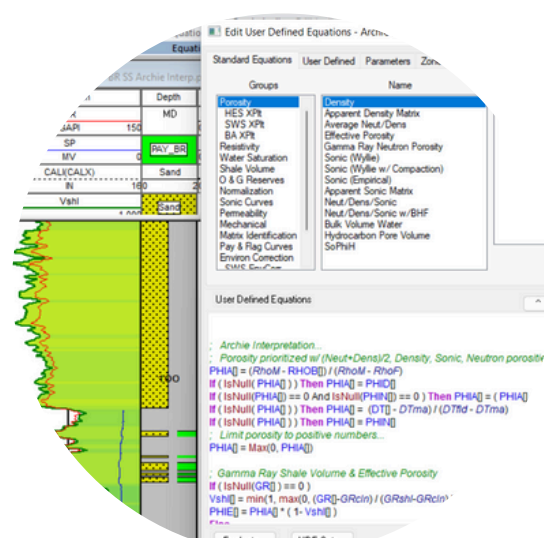
Key Features

Multi-Well Interpretation

- Perform one-step reservoir pay summations for common reservoir attributes such as gross, net, net/gross, porosity feet, and hydrocarbon-filled porosity with corrections for true, vertical, and stratigraphic thickness.
- Generate virtually any statistic from curve-derived attributes over a zone or depth interval of interest with Curve Data Statistics.
- Easily confirm results using data-distribution histograms, statistics, and cross plots.
- Map the results directly in GeoAtlas, GVVERSE Geo+, or save results to ZoneManager attributes.
- Create proposed completion stages and perforation cluster intervals, then save as proposed completion records in the WellBase Completion table. These records are available for data posting symbology on the well log templates.

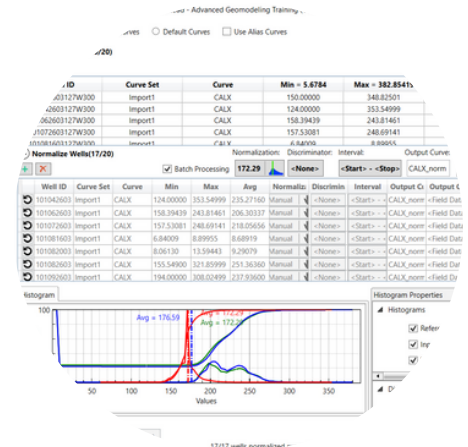
Petrophysical Analysis

- Easily perform quick and interactive log calculations for standard interpretations and reconnaissance with user-defined equations.
- Utilize pre-written interpretations for 3 and 4-mineral determinations and Archie, Dual-Water, Indonesian, and Modified Simandoux saturation models.
- Link complex, external models written in C, C++, or Visual Basic.
- Build and save personal equations with user-defined equations comprised of over 250 pre-defined standard log analysis equations.
- Calculate Poisson's Ratio and Young's Modulus using mechanical properties/UDE Group.
- Utilize standard Halliburton, Schlumberger, and Baker Atlas charts for environmental corrections or digitize additional charts.



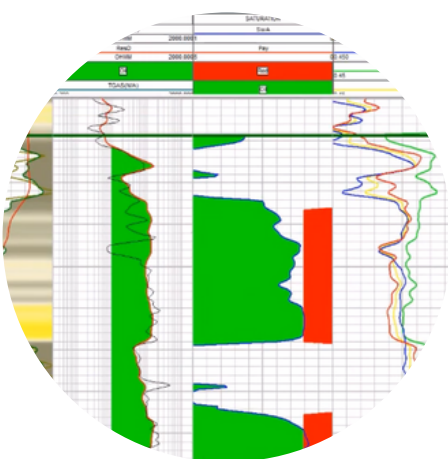
Curve Data Management

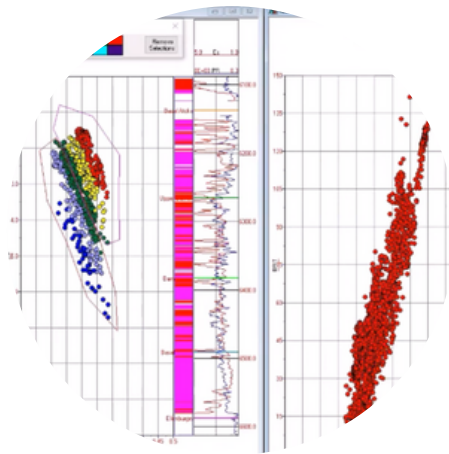
- Import standard LAS, LBS, ASCII, DLIS, and LIS/TIF data files.
- Automatically merge and splice curves using the curve import tool or optionally merge or splice at user defined depths.
- Benefit from project-based mnemonic inventory, mnemonic aliases, and unit conversions.
- Manually or bulk normalize curves using the graphical curve normalization utility which includes average, single, and two-point normalization methods.
- Utilize single or multi-well curve copy, renaming, deletion, rescaling, min/max clipping and filter smoothing tools.
- View standard core curve analysis attributes plus 200 user-defined core curves attributes.
- Combine multiple curve mnemonics for similar curve types in hierarchical order based on a pre-determined preference.



Log Analysis and Display

- Control presentation templates to display curve and depth-registered images with virtually unlimited tracks, curves, colors, and pattern fills.
- Display different track types including linear, logarithmic, mineral percent, depth registered images, text, core description, lithology pattern fills, tadpoles, and descriptions.
- Easily cut, copy, and paste curves between tracks using the on-screen presentation editing feature.
- Automatically post DST, core, perforation, mechanicals, IP, casing, tubing, and zone information.
- Interactively pick and display formation and fault markers and user-defined attribute intervals.
- On-screen QC editing of curves including performing simple or complex depth shifting, adjusting SP baseline shifting, and utilizing curve patch tools.





Cross Plot Analysis and Display

- Display data relationships over total well depths, user-specified depth range, or one or more zone(s).
- Create three-axis display with linear or logarithmic scale, user-controlled symbols, size and color, Z-axis color spectrum, and X and Y axis histograms.

Multi-Well Cross Plots

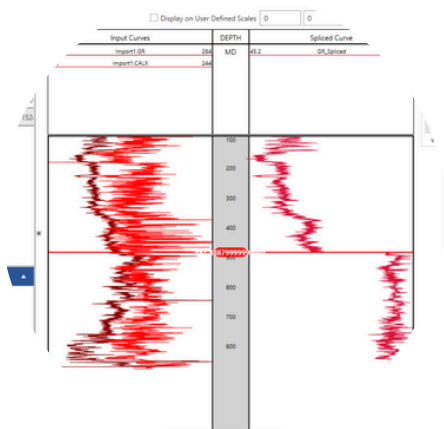
- Benefit from multi-level discrimination with userdrawn polygon capabilities.
- Differentiate between wells by assigning colors to individual wells for better analysis.
- Fit curves using linear regression, reduced to major axis, and polynomial regression capabilities.
- Interactively determine the Formation Water Resistivity (R_w), BoundWater Resistivity (R_{wb}) and Cementation Exponent (m) using the Pickett plot.

template - DOME MESA ET AL HOOSIER

	LOG	NPHI	PHIE	PHIA	SwA	Q	Qs
84.3000	8.7120	0.5899	0.2629	0.4576	0.2870	0.4610	0.4610
84.5000	2.1500	0.5295	0.2295	0.4715	0.6548	0.4707	0.4707
89.7000	1.9640	0.4509	0.2119	0.4004	0.7529	0.4707	0.4707
93.9500	95.0000	2.0020	0.4634	0.2070	0.3628	0.7636	0.4593
88.8650	96.4500	2.0800	0.4534	0.2058	0.3735	0.7532	0.4489
70.5300	97.5000	19.3200	0.4439	0.2005	0.3684	0.2499	0.4559
71.5800	95.3500	12.8400	0.4475	0.1941	0.3634	0.3215	0.4558
71.5800	100.8000	12.6580	0.4450	0.1914	0.3593	0.3284	0.4558
71.5800	101.8000	12.4760	0.4402	0.1881	0.3520	0.3366	0.4558
71.5800	101.0500	12.2940	0.4263	0.1823	0.3412	0.3498	0.4558
102.10	71.5800	82.8000	12.1420	0.4319	0.1817	0.3402	0.4558
102.20	72.7950	73.7000	12.0060	0.4411	0.1780	0.3409	0.4779
102.30	74.0100	78.0000	11.9180	0.4228	0.1672	0.3280	0.3873
102.40	75.0000	82.8000	11.9400	0.3957	0.1555	0.3111	0.4178
102.50	73.6650	85.3000	11.7560	0.3889	0.1562	0.3042	0.4176
102.60	72.5550	87.2500	11.6000	0.4300	0.1803	0.3437	0.3642
102.70	71.4600	89.2000	11.3840	0.4449	0.1960	0.3691	0.3381
102.80	70.5200	91.1500	11.4280	0.4269	0.1964	0.3631	0.3368
102.90	70.3600	93.1000	11.5000	0.4114	0.1967	0.3602	0.3352
103.00	68.8250	95.0500	11.5680	0.3968	0.1957	0.3547	0.3259
103.10	69.2100	97.8000	11.6580	0.3899	0.1956	0.3506	0.3348
103.20	68.8950	97.2500	11.6480	0.5082	0.2297	0.4093	0.2853
103.30	70.3250	96.3500	11.6300	0.5125	0.2250	0.4115	0.2814
103.40	71.2950	95.4500	11.1100	0.4958	0.2160	0.4023	0.3105
103.50	72.2550	94.9500	10.5200	0.4910	0.2107	0.3994	0.3272
103.60	73.2150	93.6500	10.0100	0.4813	0.2040	0.3938	0.3495
103.70	73.6650	92.7500	9.5000	0.4746	0.2001	0.3898	0.3626
103.80	70.3500	91.8500	8.9120	0.4852	0.2100	0.3843	0.3566
103.90	68.8650	90.9500	8.3240	0.4853	0.2164	0.3866	0.3592
104.00	68.5350	89.7000	7.7520	0.4775	0.2195	0.3887	0.3659
104.10	70.3600	88.2000	7.3400	0.4689	0.2107	0.3857	0.3518
104.20	72.2250	86.7000	6.9700	0.4570	0.2015	0.3819	0.4200
104.30	74.0700	85.2000	6.6420	0.4441	0.1923	0.3775	0.4513
104.40	76.0000	83.7000	6.3140	0.4311	0.1825	0.3731	0.4875
104.50	78.4800	82.2000	5.9880	0.4181	0.1714	0.3684	0.5132
80.8800	81.3500	5.6580	0.4052	0.1601	0.3630	0.5870	0.5588
84.0000	84.2500	5.3620	0.3922	0.1486	0.3575	0.6587	0.5900
90.7950	90.7000	5.4320	0.3753	0.1277	0.3525	0.7515	0.6373
97.1500	5.4960	0.3713	0.1090	0.3469	0.6749	0.6857	0.0000
103.6000	5.5600	0.4876	0.1154	0.4022	0.8215	0.0000	0.0000
95.6240	5.5240	0.5795	0.1157	0.4409	0.8681	0.0000	0.0000
5.6520	0.5624	0.1034	0.4346	0.9114	0.0000	0.0000	0.0000
6.9600	0.5628	0.1029	0.4286	0.9114	0.0000	0.0000	0.0000
6.9600	0.5628	0.1029	0.4286	0.9114	0.0000	0.0000	0.0000

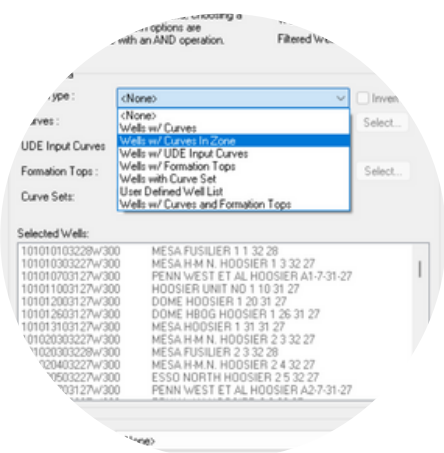
Customizable Reports

- Create user-defined well reports such as net pay, average porosity, water saturation, total porosity feet, or hydrocarbon-filled porosity.
- Define curve choices, sample rates, depth interval, or zone selection using the provided tabular list.
- Export to tab or comma delimited text files, or copy results to the Microsoft® Windows® clipboard.



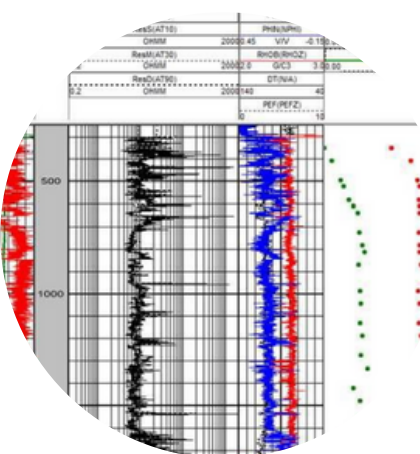
Graphical Curve Splice

- Graphically splice curve data for different runs in a well.
- Combine two or more input curves logged on different depth ranges to form a continuous composite curve into one single dataset, so that the measurements are available over the greatest possible depth interval.
- Display the single composite curve as a new curve in Log View of GVERSE Petrophysics.



Filter Wells with Curves in Zone

- Define wells with Curves in Zone filter to refine the inventory.
- The filter focuses on only the wells with curves lying fully or partially in the corresponding zones.



Survey Curves

- Display the survey curves in GVERSE Petrophysics using the azimuth and inclination survey data from WellBase.
- Use the survey curves as discriminator curve or in equations in UDE models.

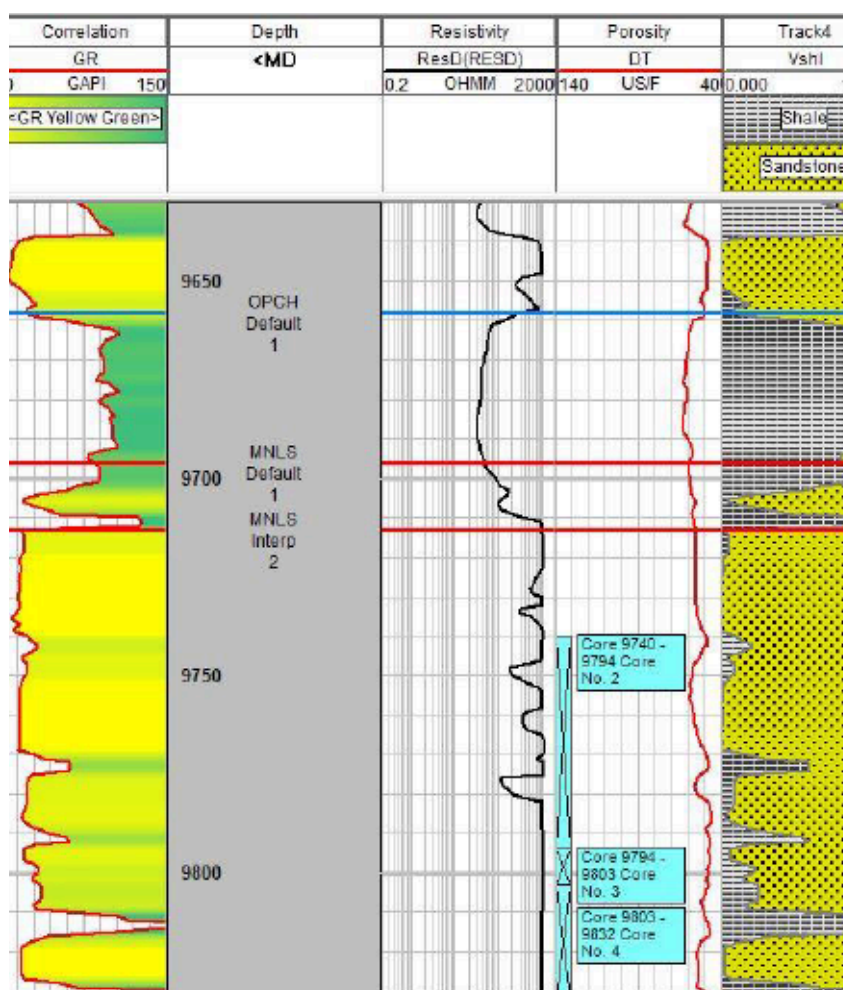
Release Highlights 2024.1

Faster Calculations & Data Filtering

Significantly faster filter selection and execution. A common filter for across GVERSE Petrophysics and a cache to bypass repeated trips to the DB. Skip pay summations for curves with nulls in the zone of interest. Significantly faster computation for Res/Pay and CDS calculations, especially when saving to ZoneManager.

Show More on Log Templates

Post multiple sources and observations for formation. Use core numbers to post specific core data only. Easily duplicate curves and area fills in different tracks on the log template.



Added Flexibility for Curve Data Management

Ignore unwanted characters when importing curves and add suffixes for easier distinction of new curve data. Display fill zone names in report and summary views.

Technical Specifications

The following sections list the system requirements for the GVERSE Petrophysics:

Minimum

- 2.4GHz 64-bit Intel class or better
- 8 GB RAM
- 1,024 x 768 graphics resolution
- 19-inch monitor

Recommended

- Quad 2.4 GHz 64-bit Intel class or better
- 16 GB RAM or greater
- NVIDIA® GeForce or Quadro - 2GB VRAM
- Dual 21+ inch monitors

Software

- Microsoft® .NET 4.5
- Microsoft DirectX 11

Note: *It is recommended to use the latest Microsoft® service packs and security patches*

Operating System(s)

- Windows® 10 Professional x64
- Windows® 10 Enterprise x64
- Windows® 11 Professional x64
- Windows® 11 Enterprise x64

Licenses

The following licenses are required to run the application:

- GVERSE® GeoGraphix license version 2024.1
- GVERSE® Petrophysics license version 2024.1
- License Management Tool version 2024.1