Data Management and Mapping 2019.4

GeoAtlas™

Leading-edge Subsurface Mapping

GeoAtlas is a GIS-based mapping environment for geologic base and subsurface mapping. Built on Esri ArcObjects technology, GeoAtlas is used to create presentation-quality maps from a variety of spatial data sources including shapefiles, web map services (WMS), ArcGIS map services, and SDE layers.

Benefits

Presentation-Quality Geologic Maps

GeoAtlas enables geoscientists to create and print extremely high-quality, geologic maps using a wide variety of standard geological and custom-created symbols.

Esri Integration

GeoAtlas is built on Esri ArcObjects technology. The native map format in GeoAtlas is the shapefile, and integration with other Esri technologies such as ArcGIS Map Services and SDE provides unparalleled interoperability with Esri tools such as ArcMap.
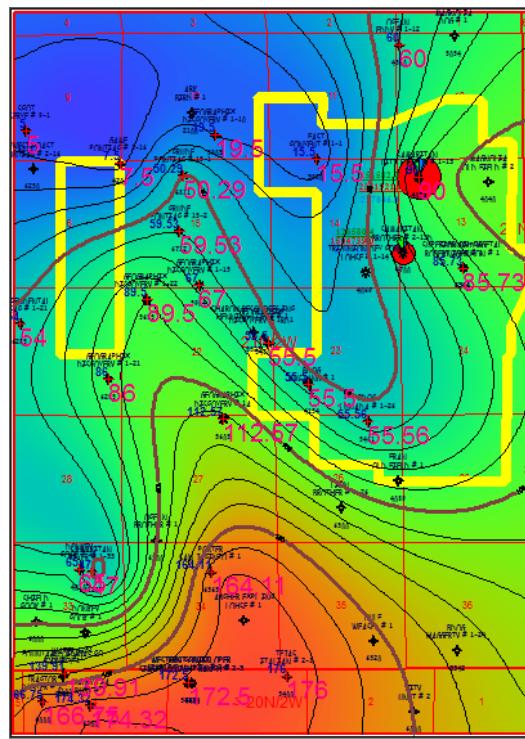
Key Features

Base Mapping

- Display well spots, land grids, satellite imagery and any one of eight, different layer types to create high-quality base maps
- Modify map attributes and add drawings, objects, and annotations
- Subset map and prospect areas using Areas of Interest (AOIs)
- Thematically map on any attribute posted on the base map
- Spot well locations from footage calls individually and in-batch
- Use layer display attributes to gain complete control over all display properties
- Construct montages displaying maps and cross sections as well as inserted text and graphics files defined in other applications
- Generate production bubble and pie maps
- Mine project data graphically using conditional pie mapping on almost any field in the project database
- Import shapefiles
- Create custom coordinate systems as a result of GeoAtlas' support of practically every datum and map coordinate system worldwide (using Blue Marble Geographic geodetic libraries)
- Print presentation maps to any size and scale

Contour Mapping

- Create subsurface map layers using one of ten different gridding algorithms
- Edit contours
- Honor faults when creating subsurface contour maps
- Create Isopach and Isochore maps
- Perform grid-to-grid operations and contour-to-grid operations
- Create subsurface contour maps from well data, zone attributes, Zmap+, AsciiXYZ, Digital Elevation Models (DEMs) and existing shapefile layers

Volumetrics

- Calculate volume and area statistics from contour maps
- Calculate original and recoverable oil and gas in-place from contour maps

ArcGIS

- Stream web map service (WMS) layers onto GeoAtlas maps
- Import layer (.lyr) files
- Stream ArcGIS map service onto GeoAtlas maps
- Display layers from SDE (Spatial Data Engine)
- Publish GeoAtlas map layers to ArcGIS Online

WellBase

WellBase software provides access to a relational database management system for geological well data, including formation tops, deviation surveys, completions, perforations and other types of mechanical data. WellBase stores its data using the GeoGraphix® Data Model (GXDM). The model is based on an industry-standard well data model called the Public Petroleum Data Model (PPDM) that has revolutionized the oil and gas industry by bringing together disciplines with the best in class science in an unparalleled productivity environment.

Our commitment to developments in WellBase resulted in dramatic advancements forward in the way we deliver our solutions. With the WellBase platform, we deliver enhanced data integration and productivity.

GeoGraphix® is a registered trademark of Landmark Graphics Corporation.
GVERSE® is a registered trademark of LMKR Holdings. LMKR Holdings is the exclusive world-wide licensor and distributor of GeoGraphix® software.

www.gverse.com/geographix

Key Features

User Friendly Interface

WellBase offers easy to navigate user interface and intuitive placement of the tools and features for industry relevant workflows in domain tabs, where each tab re-organizes and distributes the WellBase options and dialogs, allowing you to work in steps; necessary to accomplish the end-to-end industry workflows in a 64-bit environment.

Data Creation and Management

Alternatively, key features and tools can be accessed directly from and in context of the selected data. As you work interactively with multiple tabs, you can use the ribbon features to:

- Import well data in several formats including ASCII format and Excel Spreadsheets
- Export well data in ASCII2, ASCII3, or ASCII4 format
- Type in new well data
- View well data in spreadsheet or scout ticket formats
- Filter your data using QueryBuilder via the Filter options, or using the Quick Filter in the WellBase Bar, or from a list of Custom Filters in the WellBase Bar
- Create layers for mapping and display them in GeoAtlas
- View a deviated wellbore trajectory
- Designate well symbol, shapes and colors
- Manage stratigraphic columns, faults, source, and formation information

Data Analytics

Visualize GeoGraphix data, arranged in different templates, for mining, analysis, and QC. The analytics domain exists under tools tab and is supported by the new ribbon UI design. The following features are available from data analytics:

- View GeoGraphix wells along with their complete information
- Filter abnormal values in different data types and clean your well data
- Add zone attributes and create WellBase filters based on different parameters after data analysis

Benefits

Enhanced User Experience

WellBase delivers a step ahead User Experience, keeping intact the relevant industry workflows and providing quick access to the data in a productive and ergonomic working environment. WellBase utilizes modern ribbon UI technology to support its workflows and activities for individual users. WellBase gives its users a total process freedom to access tools across the whole workflow. Moreover, the user can select interactive tasks by interrelating and operating on the data directly. This aesthetic and logical design makes WellBase easier to adopt and learn and makes the available technology more accessible.

Multiple Perspectives

WellBase as a data management platform comes with a default pane offering a more logical organization of tabs that better support data management and associated work. It contains multiple views like grid and scout etc., each with a set of tools and workflows tailored to a key set of specific views and data profiles. This allows the users to modify the user interface in line with their desired workflow.

Integration with Data Analytics Applications

The WellBase application bridges with data analytics applications for a unified and consistent view of data. This integration brings together data from a wide variety of systems with distinct formats, remove duplicates, cleaning and filtering data based on user requirements and transforming it into a required format.

IsoMap®

GeoGraphix IsoMap utility is a comprehensive surface modeling and contouring application that can be used on a wide variety of data sets. IsoMap® provides 10 different interpolation algorithms, e.g. minimum curvature, adaptive fitting etc. from which geologic surfaces can be created and analyzed. IsoMap® automates standard gridding and contouring activities allowing the geoscientists to spend more time modeling and interpreting their surfaces and less time manipulating equations.

IsoMap® is a part of the GeoGraphix® Surface Modeling System which includes the complete Base Map System.

With IsoMap, you can develop:

• Structural contour maps
• True stratigraphic thicknesses isopach maps
• Attribute maps
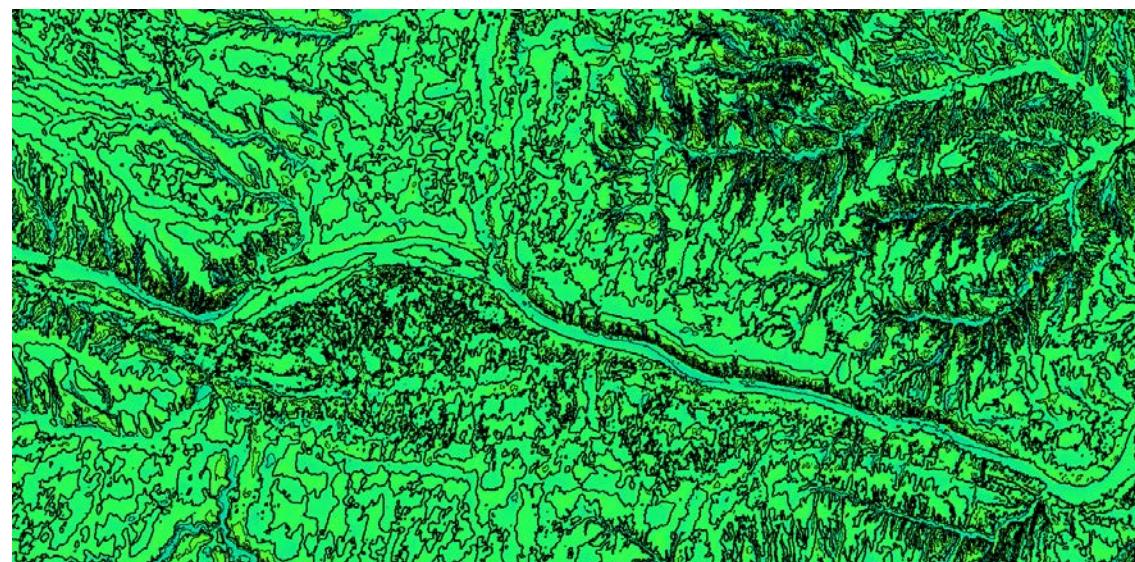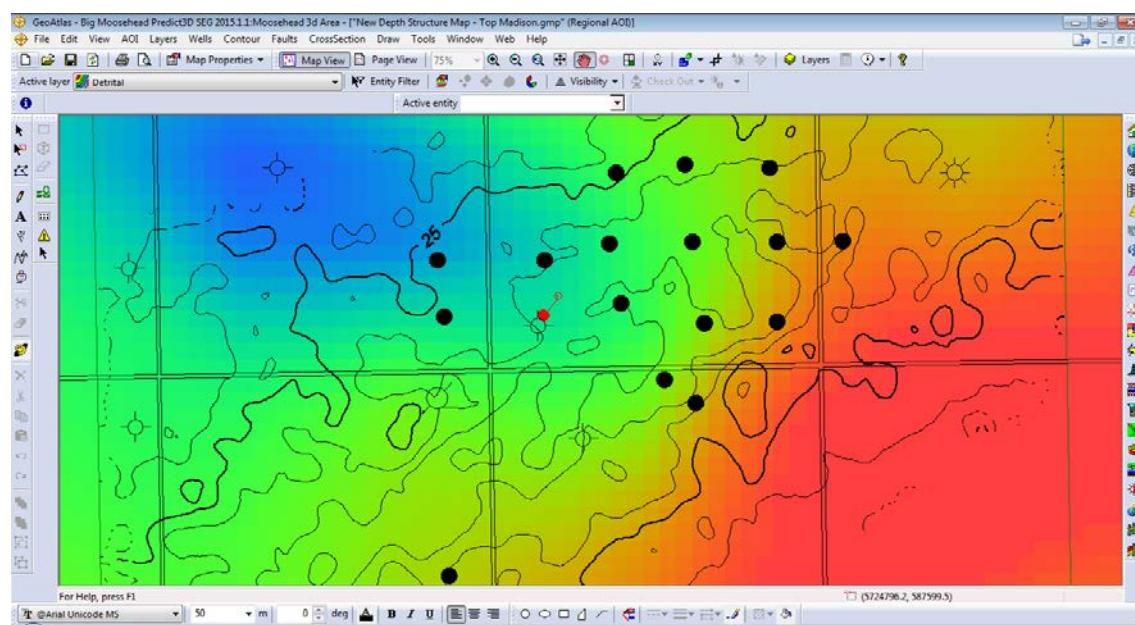
Release Highlights 2019.4

GeoAtlas™

- Commas added to posted numbers on Wellbase layers
  Add a comma after every 3rd digit to make numeric values easily readable on WellBase layers.

- Enhanced Subsurface Mapping
  Support has been added for working with larger grids with smaller grid spacing for building large regional structural maps.

- Original Oil in Place (OOIP) & Original Gas in Place (OGIP) Calculation
  Calculate OOIP and OGIP to measure the total amount of oil and gas in the reservoir. Volume and area statistics can also be calculated.
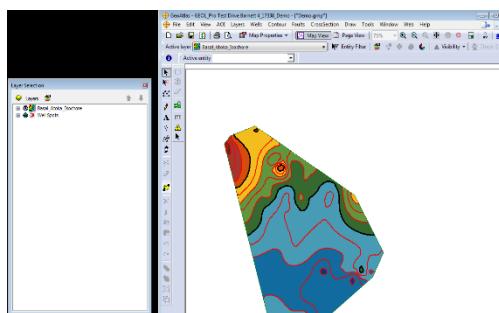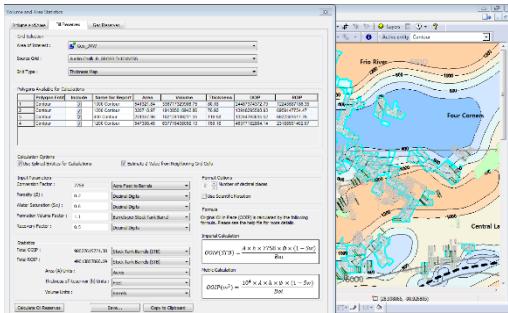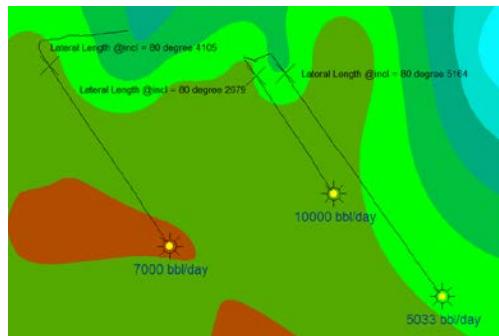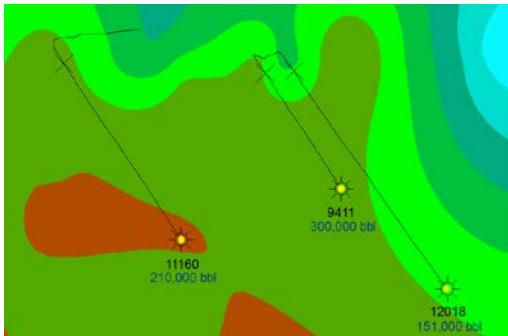
ProjectExplorer™

- Dipmeter import history is maintained in GeoGraphix, which gives a complete record of imported dipmeter data.
- Addition of New Layer Type Filters
  CAD ESRI, Shapefile, ArcGIS and Area of Interest file types have been added to the Quick Filter drop-down list, which allows for searching layers quickly and easily.

QueryBuilder

- View Selected Wells from QueryBuilder in GeoAtlas or WellBase
  Wells can be selected in the query results page and viewed either in GeoAtlas or WellBase.
- Filter Formation Records by the Active or Public Strat Column
  Formation records can now be filtered in query results using either the Active Strat Column or PUBLIC Strat Column.

WellBase

- Parse Production Data
  A parsing option has been added to WellBase Layer Create which allows division of posted data by any number This is especially useful when applying unit conversions and calculating daily production rate from any monthly production data.

- Post Deviation Survey data on WellBase Layers
  Deviation survey data such as BH Latitude/Longitude, BH TVD, Closure and Well Lateral Length can now be posted on WellBase layers.

- Rearrange Columns in WellBase Grids
  Columns in multiple WellBase grids (Formation, IP, Core, and Well Header) can now be rearranged and resized. WellBase retains the size and order of these columns and displays them in the user-preferred arrangement when WellBase is launched.

- Add Statistical Operations to Spotfire Zone Attributes

  Apply statistical operations when saving attributes to ZoneManager. This is especially useful in calculating average attribute values over the entire zone.

- Import IHS297 GD Record

  IHS perforation data recorded during production tests (IHS297 GD) can now be imported into the system and the data stored in the Perforations tab in WellBase.

- Quick Filter Tool Optimization

  The Quick Filter tool has been enhanced with the addition of new usability and querying features, aiding in the efficient creation of set operations filters.
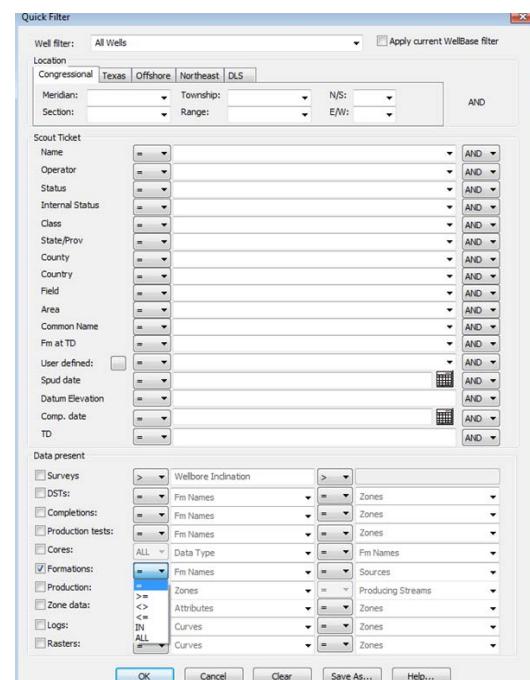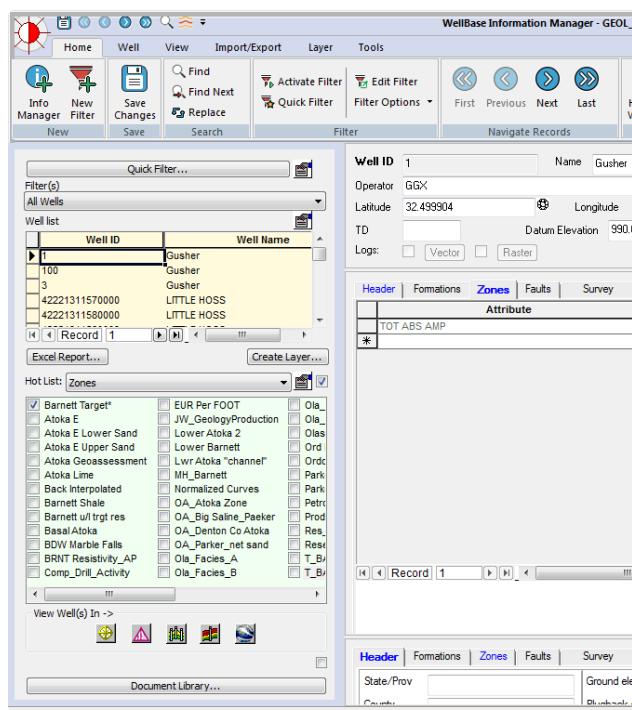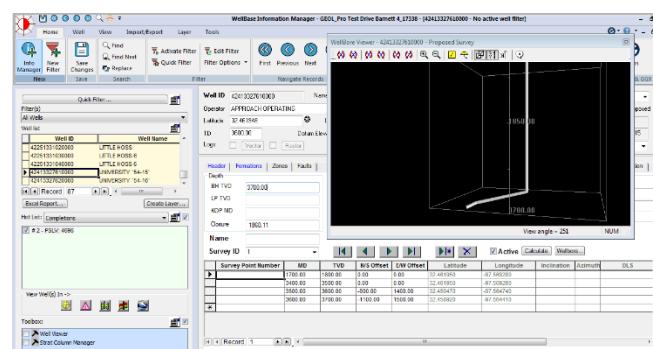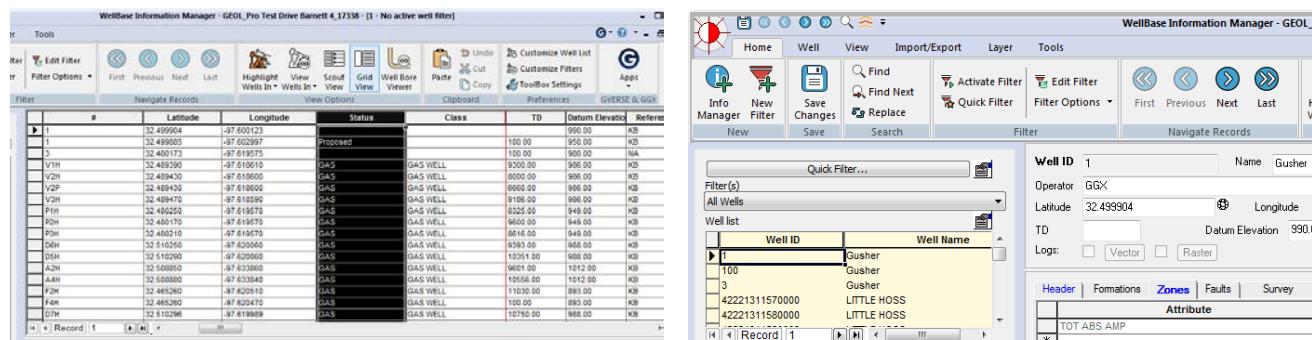
XSection

- Support has been added for generating much larger cross sections, allowing users to work with basin wide sequence stratigraphic interpretations. .

- Resized "Edit Cross Section Layout' Dialog

  The 'Edit Cross Section Layout' dialog has been resized and expanded, which allows viewing of all relevant information without scrolling.

ZoneManager

- Import Template for Repeated ASCII Imports

  A ZoneManager import template has been added to facilitate repeated ASCII imports – saving a considerable amount of manual work mapping columns to attribute names.
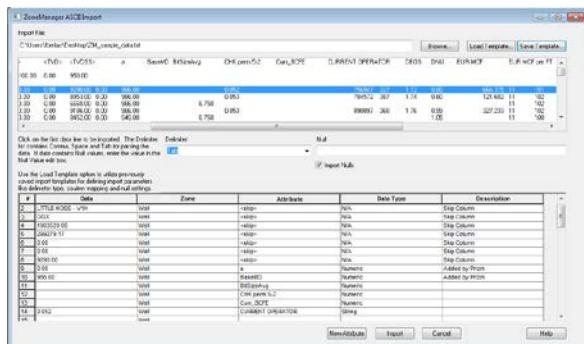
Database Schema Changes

● Increased Character Lengths for key data types

The character lengths for curve name, zone, and attribute names have been increased to 40 characters - allowing for more descriptive names for curves, zones and attributes.
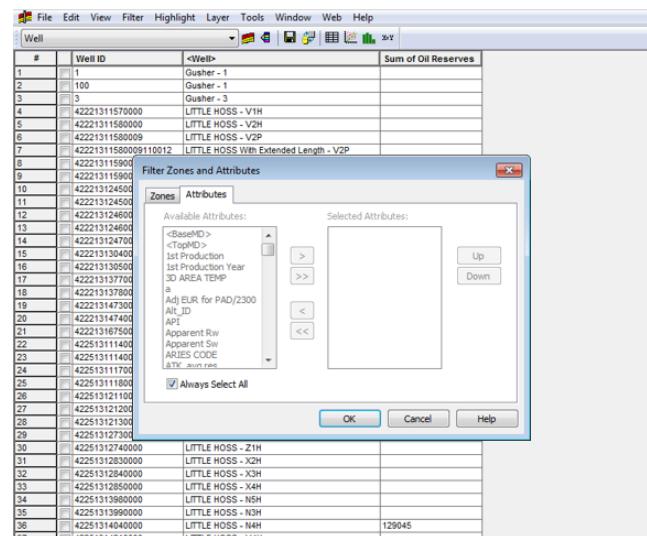
Requirements

Hardware (MINIMUM)

● 2.4GHz 64-bit Intel class or better

● 4GB RAM

● 1,024 x 768 graphics resolution

● CD-ROM drive

● 19-inch monitor

Hardware (RECOMMENDED)

● Quad 2.4 GHz 64-bit Intel class or better

● 16 GB RAM or greater

● NVIDIA GeForce or Quadro - 2GB video RAM

● DVD-RW drive

● Dual 21+-inch monitors

Software

● Microsoft® .NET 4.5

● Microsoft® DirectX 11

Operating System(s)

● Windows® 7 Professional x64

● Windows® 7 Enterprise x64

● Windows® 7 Ultimate x64

● Windows® 10 Professional x64

● Windows® 10 Enterprise x64

Licenses

● GeoGraphix license version 2019.4