



GeoGraphix®

releasenotes

Title | ***GeoGraphix® 2014.2 Release Notes***

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Introduction

LMKR is pleased to announce the release of the GeoGraphix® and Discovery™ on OpenWorks® 2014.2 software.

This release contains many new features for GeoGraphix. This guide provides important information regarding new improvements, system requirements, and valuable resources that will allow you to get the most out of the GeoGraphix 2014.2 release. The GeoGraphix 2014.2 release contains the 2014.2 version of GeoGraphix software.

To go directly to the new features, defect fixes, known issues and system requirements for the GeoGraphix applications, click on the blue links below:

- [New Features](#)
- [Fixed Issues](#)
- [Known Issues](#)
- [System Requirements](#)

Note: If working in a network environment, in order for all computers to work together on shared projects, ALL computers (clients and servers) must be updated to the same version of the software. It is intentional that computers with different versions of GeoGraphix software cannot and should not be connected with each other.

GeoGraphix 2014.2 is an integrated product suite that incorporates shared data management and geological, petrophysical, and geophysical interpretation software. It utilizes a Sybase (GXDB) database in GeoGraphix Discovery mode, or accesses the OpenWorks/SeisWorks (Oracle) database in Discovery on OpenWorks mode. The GeoGraphix software consists of the following:

GeoGraphix Pro is a new upgrade option that provides geoscientists with advanced technologies to enhance their productivity and maximize their existing GeoGraphix investment. GeoGraphix Pro is a licensed upgrade to the GeoGraphix software and requires the purchase of a separate license.

For Release 2014.2, these include:

- **Advanced 3D visualization (Pro 3D)** – enables interpreters to get the most from their data by quickly creating powerful and informative base maps, fence diagrams and seismic backdrops. Using the Pro 3D view you can show IsoMap structural surfaces, cultural/GeoAtlas layers, wells, seismic data, Horizons, faults, microseismic, cross sections and fence diagrams in 3D view.
- **Field Planning** – The advanced field planning tool is designed to reduce the time required for efficient field development. It provides the ability to create, save, analyze and manage multiple field plan scenarios before committing them to the database. Designed for horizontal well plans, the Field Planning includes determination of the optimum location and orientation of wells. These proposed wells can all be visualized by creating a layer for display in GeoAtlas.



DataManager™ includes ProjectExplorer™, Coordinate System Manager™, WellBase™, SeisBase™, QueryBuilder™, LandNet™, LeaseMap™, and ZoneManager™.

- The GeoGraphix and Discovery on OpenWorks project and data management engine

GeoAtlas™

- The map display and montage environment working on Esri MapObjects

IsoMap®

- The gridding contouring engine, featuring 10 powerful gridding algorithms

XSection™

- A fully integrated geological interpretation tool and cross section display tool

PRIZM™

- An interactive petrophysical and log analysis system

smartSECTION® with FrameBuilder™

- The next generation geologic modeling and cross section tool for complex structural and sequence stratigraphic analysis and unconventional well planning and monitoring

Discovery™ 3D

- The 3D scene viewer that uses the most recent video and X-Box tools to display seismic and geologic data in three dimensions

SeisVision™

- The SeisVision comprehensive 2D/3D seismic interpretation system.

pStaX™

- The post stack processing module for enhancing seismic character and detecting anomalies related to geologic features

SCAN™

- The patented semblance calculation for enhanced fault interpretation

LogM Advanced Synthetics™

- The geophysical application used for interactively editing well logs and evaluating synthetic trace character response

LogM Modeling™

- The 2D forward seismic waveform, ray tracing and structural modeling tool to predict seismic response away from the well

STRUCT™ Model Entry

- The comprehensive forward seismic structural modeling tool that is used to determine the seismic response of complex geologic structures in areas where there is little or no well control

Discovery™ on OpenWorks®

- Enables the GeoGraphix software to access OpenWorks and SeisWorks projects, and uses the OpenWorks and SeisWorks data within the GeoGraphix framework

Xchange Tools

WellXchangePlus™

- Transfer well information to or from two GeoGraphix projects, or between GeoGraphix and OpenWorks

SeisXchange™

- Transfer seismic data between SeisVision and SeisWorks

GridXchange

- Transfer of map point sets and grids from GeoGraphix to OpenWorks

Note: SeisBase, LandNet, LeaseMap, LogM ModelBuilder (LogM Modeling), LogM Well Editor (LogM



Advanced Synthetics), Field Planning, and advanced 3D Visualization are not available in the current version of Discovery on OpenWorks.

System Requirements

On the following pages, you will find hardware and software system requirements tables for this release of GeoGraphix and Discovery on OpenWorks:

- GeoGraphix Workstation
- GeoGraphix Project Server

System requirements can vary considerably, depending on your computing environment and software objectives. Please contact your Sales Representative or Customer Support if you have questions or need more information about system requirements.

Important Notes:

- ***Clients using Discovery on OpenWorks must upgrade to OpenWorks 5000.8.3.01 and SeisWorks 5000.8.0.2***
- ***Please also refer to the GeoGraphix Customer Support Portal (<http://support.lmkr.com>) for up-to-date information on system requirements for all GeoGraphix products.***



GeoGraphix Workstation & Laptops

Operating System Requirements		
Supported Operating System	RAM	CPU
Windows® 7 Professional x64 Or Windows® 7 Enterprise x64 Or Windows® 7 Ultimate x64	4 GB Minimum 8+ GB recommended	Pentium i5/i7 or any Quad Core Processor
Notes		
Note 1 – We recommend using the latest Microsoft service packs and security patches		

Graphics Hardware Requirements		
Application Support Level	Required Operating System	Required Graphics Hardware
All GeoGraphix Applications including Discovery 3D and advanced 3D visualization	Windows 7 and above	DirectX 11 capable hardware (see note 2)
GeoGraphix Applications except for Discovery 3D and advanced 3D visualization	All Supported	All Supported
Notes		
Note 1 – Microsoft DirectX End-User Runtime (June 2010) is required to run Discovery 3D and advanced 3D visualization.		
Note 2 - To run Discovery 3D, and advanced 3D visualization it is recommended that an NVIDIA DirectX 11 compatible card be used. We recommend using the latest video drivers and MS updates for your system.		

Additional Requirements and Recommendations

- DVD-ROM required for media install. Download install available through Electronic Software Delivery at <http://Support.lmkr.com>.
- DCOM/Firewalls configured to allow remote access. Only necessary if sharing projects.
- Microsoft .NET 4.0 (or 4.5) runtime required.



GeoGraphix Workstation (continued)

Optional Software Requirements	
For spreadsheet import utility in WellBase, SeisBase, and LeaseMap	Excel 2007 or 2010 (32 or 64 bit)
For Selected Help files	Adobe reader
For Discovery on OpenWorks, WellXchange, GridXchange, SeisXchange	OpenWorks for Windows 5000.8.3.01 – Basic or Full (recommended) Install available on Landmark’s LSM (See Notes below), and SeisWorks 5000.8.0.2 (for seismic workflows)
For Esri geo-referenced images and Esri CAD file import in GeoAtlas	Esri ArcGIS Runtime Engine 10.0 (SP 4) or 10.1 (SP 1) (included in the 3 rd Party Installer)
For LOGarc™ Version 3.2.1.0 or Version 4.1.0.3 access in smartSECTION	To use the LOGarc™ feature the LOGarc™ Version 3.2.1.00 or 4.1.0.3 software must be downloaded from IHS LOGarc and a valid account must be in place. You must have administrator rights to the computer on which you will load the software.

Notes for Discovery on OpenWorks: The OpenWorks Full install requires Hummingbird Exceed. The Oracle client installation in use with the OpenWorks Full installation requires that the “Administrator” option be selected. The “Administrator” option type includes the SQL Plus and the Oracle Database Utilities components, which are needed to run Discovery on OpenWorks, as part of the total OpenWorks package.

Hummingbird Exceed is not required for the OpenWorks Basic install. If OpenWorks Basic installation is used, the Oracle client installation can use the “Administrator” option, which will include all of the needed components. Or, the Oracle client installation for the OpenWorks Basic installation can use the “Custom” installation type. However, with this install type the following components must be installed:

- Oracle Database Utilities 10.2.0.1.0 or Oracle client 11.2.0.2
- SQL*Plus 10.2.0.1.0, or Oracle client 11.2.0.2
- Oracle JDBC/THIN Interfaces 10.2.0.1.0, or Oracle client 11.2.0.2
- Oracle Net 10.2.0.1.0, or Oracle client 11.2.0.2

After these Oracle components are installed, run the upgrade patch to Oracle 10g 10.2.0.4 (32 bit)



GeoGraphix Project Server

Operating System Requirements		
Supported Operating System	RAM	CPU
Windows® Server 2008 R2 Standard x64 or Windows® Server 2008 R2 Enterprise x64	8 GB Minimum 16+ GB Recommended	Intel Xeon Processor or Equivalent Quad 2.4GHz 64-bit or better
Notes		
Note – We recommend using the latest Microsoft service packs and security patches.		

Additional Requirements and Recommendations

- DVD-Rom required for media install. Download install available.
- DCOM/Firewall must be configured to allow remote access

Server performance is subject to a large number of variables. It is impossible to give specific recommendations here, but these are some guiding principles to use. In general, multi-user performance of a GeoGraphix project server is best when the server is dedicated to GeoGraphix and not shared with other applications, especially database applications or intensive file-system applications. In addition, consideration should be made for the number of GeoGraphix users and the size and number of concurrently accessed projects. At some point having multiple project servers becomes a better solution than having all users on one server. Generally, somewhere between 10 and 20 users is when a second server might be suggested.

Networking

Networking performance depends on the number of users trying to access a server simultaneously as well as the bandwidth requirements for those users. Recommendations for server bandwidth typically specify server connectivity at a higher bandwidth than an individual user. For instance, users running at 100 Mbit should be accessing a server running on a 1 Gbit backbone. If users are at 1 Gbit, consider running multiple 1 Gbit or fiber connections on the server.

Database Cache

A large database cache is an important factor to consider when dealing with multiple users accessing large databases. The database engine is capable of addressing a practically unlimited amount of cache memory. The best way to size the memory is to estimate the memory requirements for other running applications and allow the database cache to dynamically allocate any remaining free memory. The engine will only allocate what it needs when using dynamic allocation up to the maximum specified.

It is highly recommended that you let the database engine use as much cache memory as it requires on the host server. Increasing database cache memory is the quickest and most effective way to improve database related performance on large network projects.

On a workstation it might be appropriate to reserve 1 to 2 GB for the OS and file system cache and 2 to 4 GB for other running applications. On a dedicated project server, not much memory needs to be reserved for other applications. The ideal maximum varies by project size, number of users, and other load consideration. But as a general rule, the higher you can set the maximum the better.



Storage

A great deal of GeoGraphix's access patterns on a server deal with file I/O. Database access, raster images and seismic data are examples of files that benefit substantially from a fast disk sub-system. Server environments also place a high importance on data integrity and reliability. At a minimum, consider using a RAID 5 (stripe-set with parity) array. As the size of disks increase, you may also want to consider a hot swap drive and/or RAID 6 (striped with dual parity). Using a controller card with its own cache can also help improve performance.

Network Attached Storage (NAS), Storage Area Networks (SAN), and Other Non-Windows Storage Solutions

There are two typical methods used for accessing external storage devices from a project server; iSCSI and CIFS.

iSCSI allocates a block of storage on the external device and makes it appear to be a physical disk on the project server. This has the advantage of a 100% compliant file system. However since the external device sees the allocation as one big file, it can make backing up and restoring of individual files using the external device's capabilities more difficult. Standard backup and restore procedures from the server will still work.

Using CIFS for external storage devices depends greatly on the vendor's implementation of the CIFS protocol used by the Windows platform. In general, a 100% compliant implementation of CIFS for a performant system is required. In particular, vendor's implementation of the "File Change/Notify" functionality has been problematic. Devices based on Windows Storage Server should be 100% compatible since it shares its components with Windows. Implementations based on UNIX/Linux are where problems occur due to the fact that the kernel level support is not present. Due to these uncertainties with CIFS implementations LMKR does not technically support CIFS.

Compatibility with OpenWorks Software

The Discovery™ on OpenWorks® (DOW) software directly links a GeoGraphix application to the data in an OpenWorks® project, and provides a shared project environment for interpretation applications. Landmark Software has delivered the OpenWorks and DOW software for Release 5000 and will continue to provide updates and enhancements to these products. When planning your uptake of Release 5000 and verifying your workflow, you should consider version compatibility between the OpenWorks software and the Discovery on OpenWorks software.

In the compatibility table below, the table indicates the level of compatibility of previous releases and of upcoming scheduled and planned releases. This table will be updated as new releases are planned. The objective is to provide closely coupled compatible versions of the software to allow you to more easily take up current releases.

LMKR performs full release testing for those combinations indicated as Release, R, in the table, but may not exercise full release testing on other version combinations. For these iterative releases, LMKR performs compatibility testing between the OpenWorks and DOW software (indicated as Compatibility, C, in the table). See the table below for the level of testing for each version combination. Although LMKR does not anticipate any integration issue, in these cases it is recommended that customers also verify compatibility in their own environment.

LMKR supports the versions listed as Release in the table. However, while LMKR has completed compatibility testing, LMKR/GeoGraphix Support may not be able to fully support the versions listed as Compatibility in the table. When customers request support for a Compatibility environment, LMKR/GeoGraphix Support works on a best effort basis to troubleshoot any issues, and if an issue needs additional attention, LMKR/GeoGraphix Support reports such issues to LMKR Research & Development. LMKR/GeoGraphix Support Team cannot guarantee any resolution service levels associated with issues from a compatibility environment.



Combinations which have not been tested, either in the full release or in a compatibility environment, are indicated by U (untested). P indicates the indicated versions are probably incompatible, as the OpenWorks version has a newer development kit (devkit) than that of the indicated DOW version. Blank cells in the table indicate that OpenWorks and GeoGraphix are incompatible and will not operate together.

For the most current version of this information and an overview of suggested compatibility test paths please refer to LMKR Technical Support Solution Document KBA-65218-F9D7D5.

Compatibility Table

		Discovery on OpenWorks							
		OW License 5000	DOW License 5000.02						
OpenWorks Version	GeoGraphix Version	2014.0	2013.0	2012.0.0	5000.0.2.5	5000.0.2.1	5000.0.2.0	5000.0.1.1	
		OW 5000.8.3.01	R						
		OW 5000.8.1.1		R					
		OW 5000.8.0.0			R				
		OW 5000.0.3.5			C	R			
		OW 5000.0.3.0			C	C	R		
		OW 5000.0.2.9			U	U	U	U	
		OW 5000.0.2.8			U	U	U	U	
		OW 5000.0.2.7			U	R	R	R	
		OW 5000.0.2.2							R
		OW 5000.0.2.0							
		OW 5000.0.1.7							
		OW 5000.0.1.6							
		OW 5000.0.1.5							
		OW 5000.0.1.4							
		OW 5000.0.1.2							
		OW 5000.0.1.1							
		OW 5000.0.0.3							R

Legend

R = Release level full testing

C = Compatibility level basic testing

U = Untested

P = Probably incompatible since OW and GeoGraphix are running different OW devkits

A blank cell indicates that OW and GeoGraphix are incompatible

New Features

This section contains a brief description of the exciting new features included in the 2014.2 release.

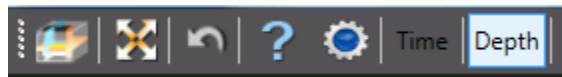
Advanced 3D Visualization

Numerous improvements have been made to the advanced 3D visualization window and menus to facilitate easier access and navigation of the 3D Scene.

Panels and toolbars surrounding the 3D Scene have added functionality to show more items in the 3D View and context menus are more organized.

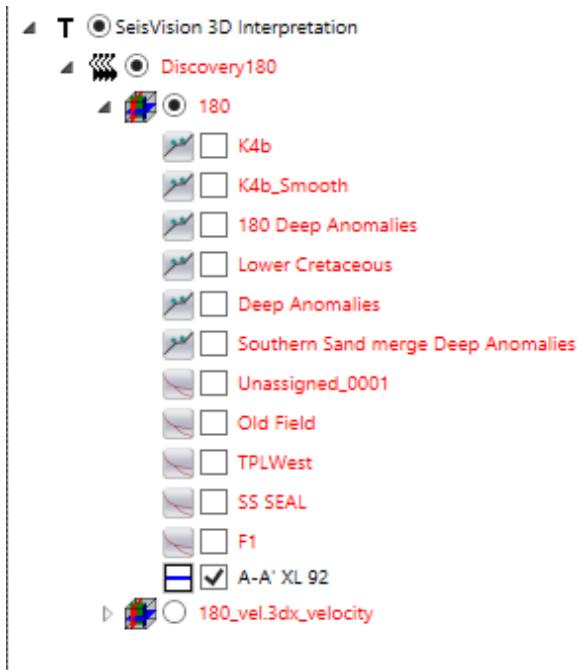
Time and Depth Modes

The advanced 3D visualization now has Time or Depth modes on the General Toolbar. All of the 3D objects can be shown in the depth domain or in the time domain using the velocity models in SeisVision.



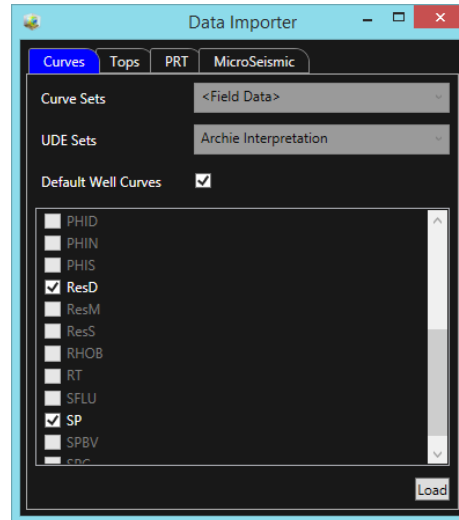
Tighter Integration with SeisVision

You now have the ability to show SeisVision horizons and faults in the 3D View in addition to all the geologic data.



Data Importer

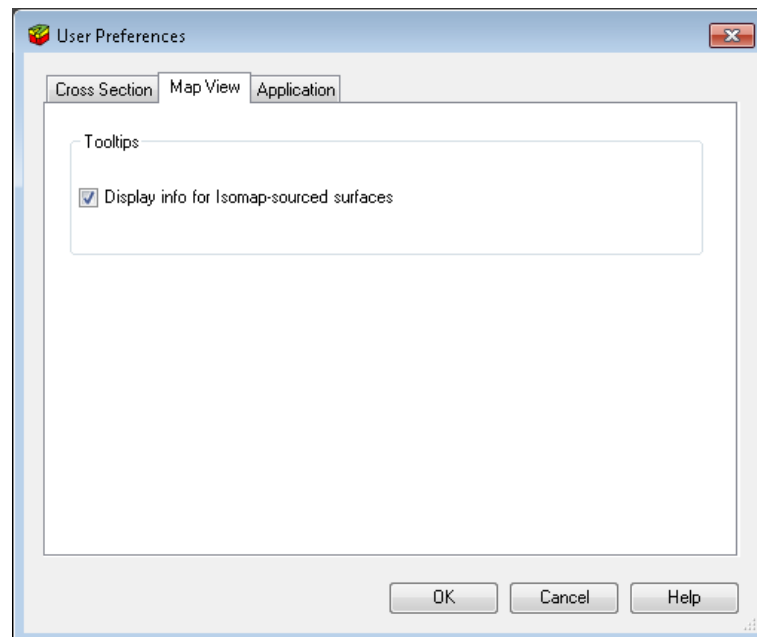
You can now load Formation Tops, Microseismic, Curves, and Log Templates for individual wells using the new Data Importer dialog box.



smartSECTION

User Preferences dialog box

A new page, the Map View Page, has been added to the User Preferences dialog box. The tabbed page allows you to toggle on or off Tool tips for IsoMap layers. The Tool Tip provides information about the origin of the layer in the Map Tree page in Map View.



GeoSurface Model Toolbar Refresh button

A new Refresh button has been added to the GeoSurface Model toolbar. The Refresh button will update the smartSECTION model based on the existing loaded data, but will not re-query the database for additional data.



smartSECTION Performance Enhancement

The Unconformity picking performance in smartSECTION models is now several times faster than in the 2014.1 release.

Display Survey Points in Wellbore

You can now display survey point locations on deviated boreholes in smartSTRAT or on the smartSECTION cross section. The display includes Survey point, MD, TVD and TVDSS.

DepthRegistration

Straightened Log Images

When Raster Images are depth registered in DepthRegistration the right pane shows a straightened image. The straightened image removes irregularities of the original scanned image. Straightened log images can be used in XSection and smartSECTION. When log images are saved, you now have the option to save the straightened image to a directory in the local CurveData folder.

Save Logs without Depth Registration Points

You can now save an image file to a well without assigning depth registration points. The Save button on the Standard Toolbar is now active when an image is opened for a well.

Previously, the Save button was not active until depth registration points were defined for the image.

Coordinate System Manager

Support for MAGNA-SIRGAS Datum

GeoGraphix Mapping now supports the MAGNA-SIRGAS datum and associated map projections for the Colombia Bogota zone, Columbia east Central zone, Columbia East zone, Columbia Far West zone and Columbia West zone enabling the creation of geodetically accurate maps in the northern regions of South America.

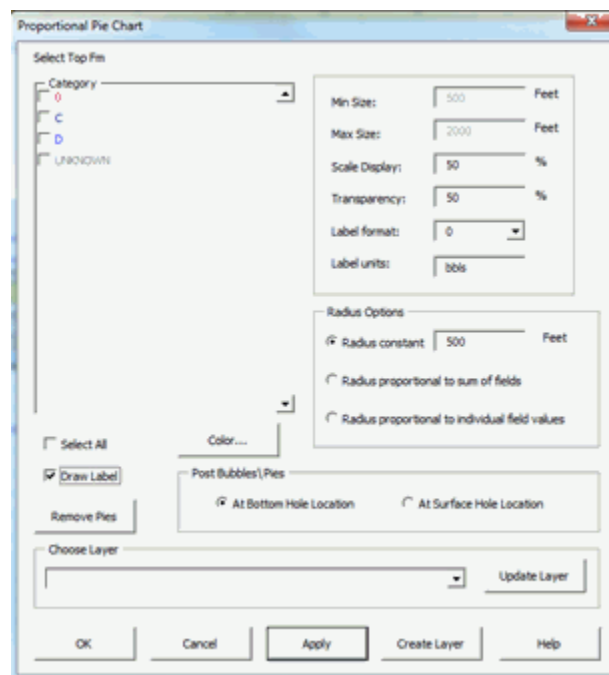
WellBase

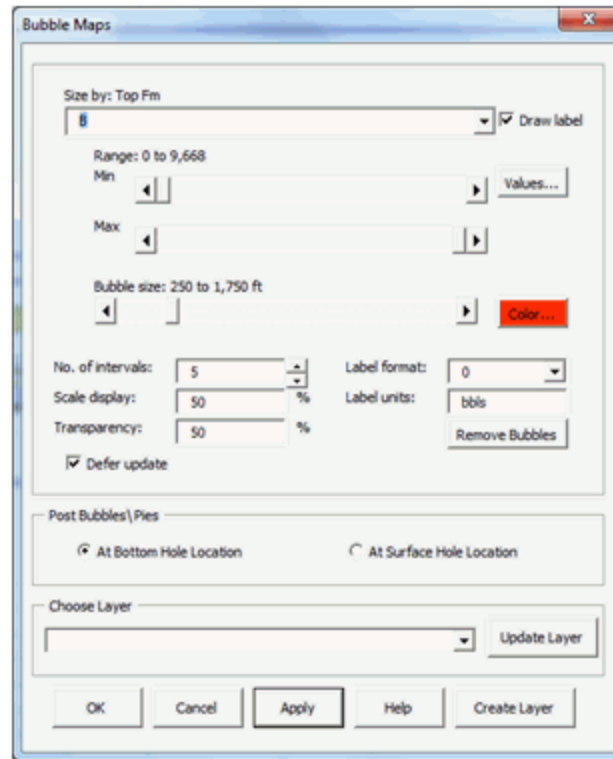
IHS 297 Well Imports

In the 2014.2 release, The IHS 297 well import has been expanded to include the Proposed Survey data in the 297 DA records. The 297 DA record contains the BH Offsets, BH TVDs and TDs for horizontal wells that have been permitted but not yet drilled.

Engineers Dashboard Improvements

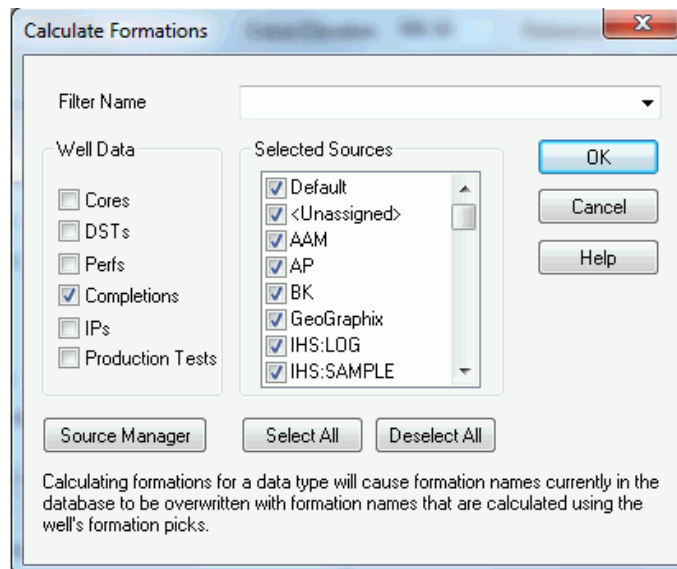
Production bubbles and pies can now be posted at either the surface or bottom hole well locations.





Calculate Formation Filters

In the 2014.2 release, Formation names can now be calculated for a filtered set of wells. After selecting a filter name from the drop-down list in the Calculate Formations dialog box, Formation names will be calculated only for wells that meet the filter criteria.





Field Planning

Pad/Slot Elevations Calculated Using Digital Elevation Models (DEM)

Pad/Slot datum elevations are now calculated automatically on field plans after specifying a digital elevation layer in the field planning dialog box. Previously, geologists would have to determine pad elevations using Georeferenced topo maps and then hand-enter these elevations into the field planning tool.

Minimum Lateral Length

A minimum lateral length can now be specified to ensure that planned wells are economically viable. Well trajectories will not be calculated if the length of the lateral is less than the minimum lateral length after the well's BHL is clipped to a setback on a lease line.

Move Pad and Slot Locations

Well pads and their associated slots can now be moved as a single entity while keeping other well target locations such as LPs and BHLs fixed. This feature allows well pads to be relocated, if necessary, due to unforeseen surface constraints.

Using Lease Acreage for Field Planning

You can now enter your lease acreage and setbacks when planning horizontal wells. Any Shapefile or ArcGIS map service layer containing polygons can be used to create lease layers for field plans. Well bore trajectories will be clipped automatically to lease boundaries. Multiple setbacks can be specified for any portion of the lease boundaries.

Backup/Restore Field Plans

You can now create backups of field plans created in GeoGraphix Pro. Backup field plans are stored as Zip files and can be restored into the original GeoGraphix project or into another GeoGraphix project if needed.

Auto-Update of Well Trajectories on the Field Plan Layer

Horizontal well trajectories are now updated and displayed on field planning layers automatically when targets are modified in LMKR Well Planner. Users will no longer have to manually update their layers in the field planning dialog box to see changes to well trajectories on their maps.

GeoAtlas

ArcGIS Online

ArcGIS Online layers can now be displayed on GeoAtlas maps as ArcObjects layers. GeoAtlas map layers can also be uploaded to ArcGIS Online and can be shared with others within the organization.

IsoMap Layers Created Using Digital Elevation Models

Digital elevation data in DEM or SDTS formats can now be used as sources for building IsoMap layers. This feature lets users visualize the field area as a topo (contour) map in GeoAtlas or as a 3D surface in advanced 3D visualization.

ArcGIS Map Services via RESTful URLs

ArcGIS map service layers can now be streamed onto GeoAtlas maps even if the map services are only accessible via RESTful URLs. Previously only ArcGIS map services layers that were streamed over the internet using the SOAP protocol could be displayed on GeoAtlas maps.

Add New Well to Database

Well datum type and datum elevation can now be entered in the Add Well dialog box when adding a well to a WellBase layer in GeoAtlas. This eliminates the need to subsequently enter the datum type and elevation in the WellBase scout ticket.

QueryBuilder

Save Filter As Improvement

The name of the active filter will appear in the file dialog box when saving a filter. Users will no longer be required to type the filter name again before saving.

SeisVision

Advanced 3D Horizon Tracker

The SeisVision 3D Horizon tracker algorithm has been enhanced. Potential Horizon picks are validated based on correlation scores with existing picks, and Horizon propagation is driven by pick confidence. Horizon autotracking results are significantly improved over previous versions, especially in areas of noisy data or steeply dipping events.

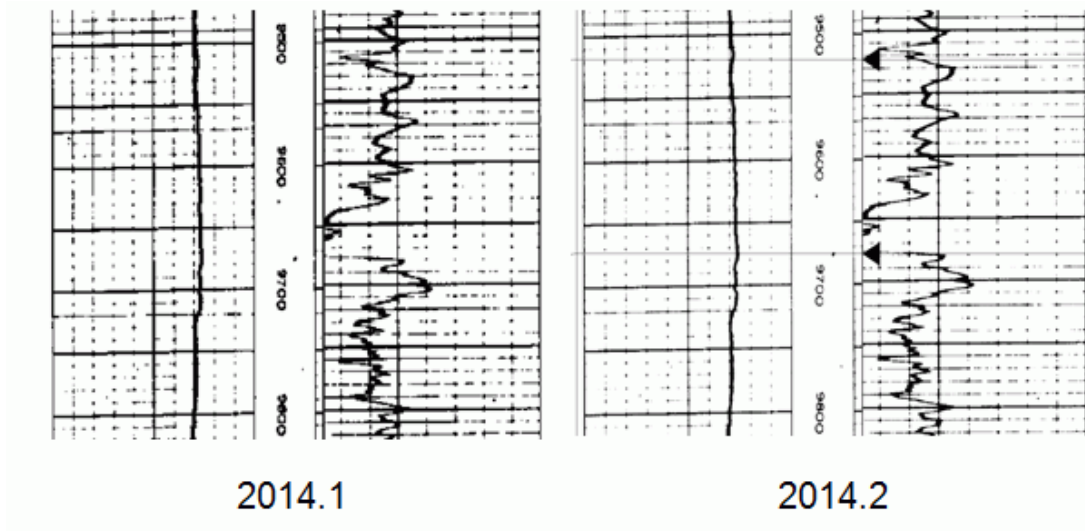
Fault Interpretation Improvements

The algorithm for fault triangulation has been refined to produce improved results in a variety of situations. The interpolated fault planes and segments are more consistent and accurate.

XSection

Improved Raster Log Resolution

The resolution of raster logs in XSection has been significantly improved on the PRIZM templates from the 2014.1 release for zoom states greater than 100%. The image below compares a typical raster image in 2014.1 compared to the 2014.2 release.



Default to Last Used XSection Template

Starting with 2014.2, when a new cross section is constructed in XSection, the last template used when a cross section was previously constructed is automatically listed on the New Cross Section dialog box. This feature is intended to increase your workflow efficiency when you are making several similar cross sections.

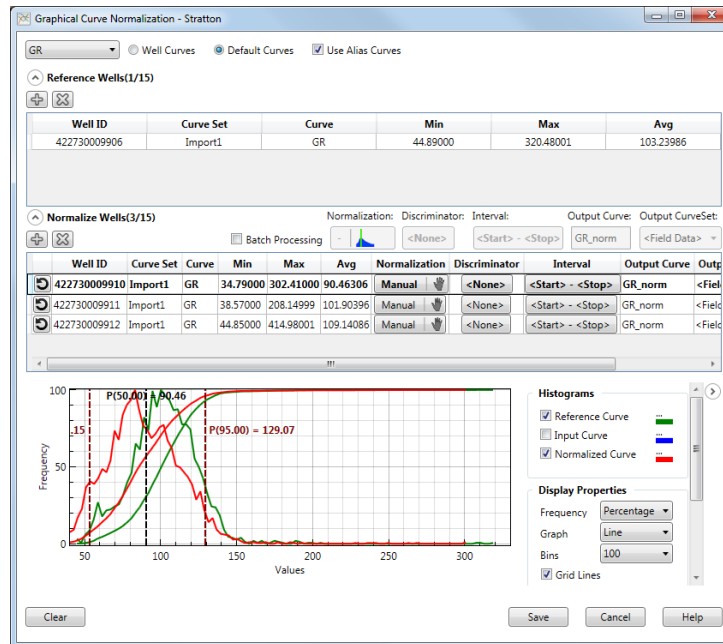
PRIZM

Graphical Curve Normalization

The Graphical Curve Normalization feature has been included in the 2014.2 release. Using this tool, you can normalize any curve for any number of wells.

Curves can be normalized on an individual basis or, using the Batch Processing feature, several curves can be normalized at one time. On an individual basis curves can be normalized using a manual method, by comparing the Average value, or by using a single point method.

The Batch Processing methods include the Average, Single Point and Two Point methods.

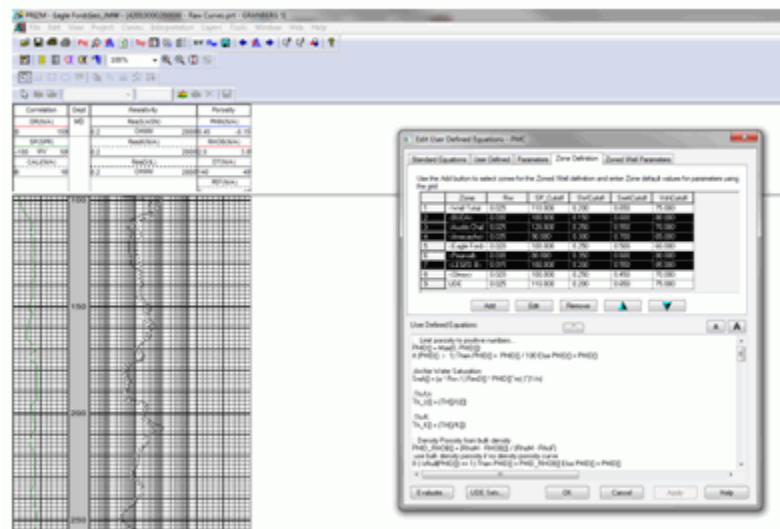


Double-click to Open Wells

You can now double-click on the Open Well dialog box to open a well instead of having to click on the Open button. This workflow is more efficient.

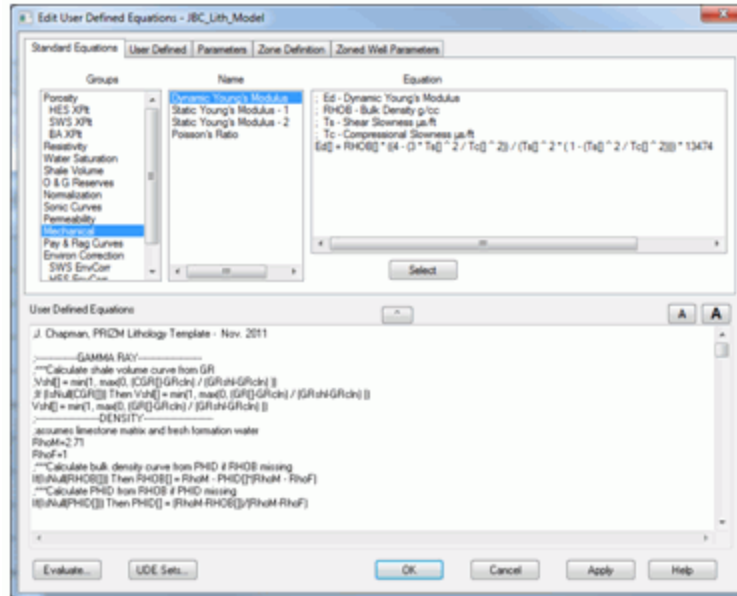
Multiple Delete of Zone Definitions

You can now select and delete multiple zoned attributes from the Zone Definition tab (Interpretation >> Edit User Defined Equations >> Zone Definition Tab, or Interpretation >> Set Parameters >> Zone Definition Tab).



Resize the User Defined Equations dialog box

You can now resize the User Defined Equations dialog box to make it easier to see long strings and complex user defined equation models.



Fixed Issues

The following customer reported bugs were fixed in this release.

ID	Title
SeisVision	
56428	Horizon selection sensitivity is dependent on the scale of the seismic section.
64347	Warning message regarding Update Layer Coordinates opens behind the SeisVision window; SeisVision consequently appears to be locked.
62781	Inline and Xline annotation does not appear in print preview of zoomed seismic section.
63432	When using a Fault List, the IsoMap layer includes all the faults in the project, even those that are not on the active fault list.
63556	Fault Heave Calculator is not honoring the Global Fault list if a custom list has been created.
54703	In SeisVision, GeoAtlas layers that are overlaid on a Time slice do not appear in Print Preview.
61686	In SeisVision GeoAtlas layers displayed in Main Map View are not printed.
61688	When a Time slice is flattened to horizon, amplitudes do not show correctly on the time slice.
59021	Loading wells into an interpretation takes 17 minutes in 2014.1 while only a few minutes in 2013.
59354	2D seismic lines disappear from the map when multiple layers are displayed in Map View.
57992	SeisVision crashes when a seismic line is zoomed in and Print Preview is selected.
58805	If a GeoAtlas layer composed of color filled polygons or thematically mapped colors is shown in Map view and a seismic line covers part of the map, the GeoAtlas layer flickers when the seismic line is moved off of the map.
58848	SeisVision crashes when a time horizon is active and the V on the Map View window is clicked to show a velocity surface.
59690	When opening the Layer Selection dialog box the error message "cannot create Mapcontrol interface instance" appears then moves to behind open windows on the interpretation. The message cannot be closed and SeisVision locks.
60049	When printing seismic lines that have been shifted, the intersection crosses look OK in the interpretation but are shifted in Print Preview and the printed seismic images.
GeoAtlas	
60675	Copying/pasting a Field Planning layer from one project to another, then renaming the layer results in an unusable layer in the new project.
60199	If a polygon is drawn in a counter-clockwise direction the ring ordering is listed the way it was drawn, but it should always be listed in a clockwise order.
49117	AO – ArcGIS Georeferenced Image import dialog gives extents for non-georeferenced images.
53891	Spatial filters unusable if more than one user is on Citrix and users are sharing the same project – causes errors in smartSECTION and ESRI shutdown errors.
46098	Volumetric calculations are slow with tight grids in R2013 compared to 5000.0.2.5.
63389	LYR layers in a project upgraded from 2013 to 2014 do not crop properly in Page View.
60776	IsoMap – Incorrect labels shown for the report generated from volumetric calculation.
XSection	
37252	Refresh and scrolling slow in cross section using .prt with area fills.
62916	Show/Hide wells, error type Unspecified when right-click in cross section.



WellXchange	
61116	Formation tops data transfer – Formations appear in upper case instead of lower when transferred using WellXchange with overwrite all option.
WellBase	
39854	If a new status name is entered into the internal status field then an ASCII 4 file is exported, the well associated with that status name cannot be imported into another project using that ASCII 4 file
56232	The Internal Status field on the WellBase Scout Ticket view is not posting correctly for Deviated well – Wellbore path entity – causes incorrect thematic rendering.
54488 and 64181	Excel Report – Extents Report does not recognize wells with bottom hole lat/long values exceeding the project extents.
58868	Bulk Import – HIS 297 – Texas locations only import in bulk mode.
33725	IHS 297 import is not importing proposed latitude And longitude TD positions for horizontal wells
13354	Well Summary Tool – Incorrect data is shown on the Well Summary screen if the display units are changed from the project default setting.
PRIZM	
54876	Simple depth shift is not shifting core data associated with alpha-numeric core number. However, cores with purely numeric numbers will shift.
61773	After upgrading and enabling the Combined curve Aliasing feature, cross sections in XSection are returning Access Violation and Unknown SEH errors.
54089	Interval curves are not shifting to the correct TVD when log is viewed in TVD
41532	Cannot do multiwell xplots on core curves when wells do not have vector logs.
47705	Interval curves do not work with a space in the curve name.
DepthRegistration	
56787	DepthRegistration Scan fails to find moved TIFF files unless a duplicate file with .TIF extension is present.
44709	Memory use climbs while depth registering raster images and eventually causes DepthRegistration crash.
Volume Attributes	
58488	VA does not recognize 3DX input if output subset is of large volume dataset
59518	Volume Attribute gives error message while sub-setting frequency range.

Known Issues

Following is a known issue in this release and is a work in progress.

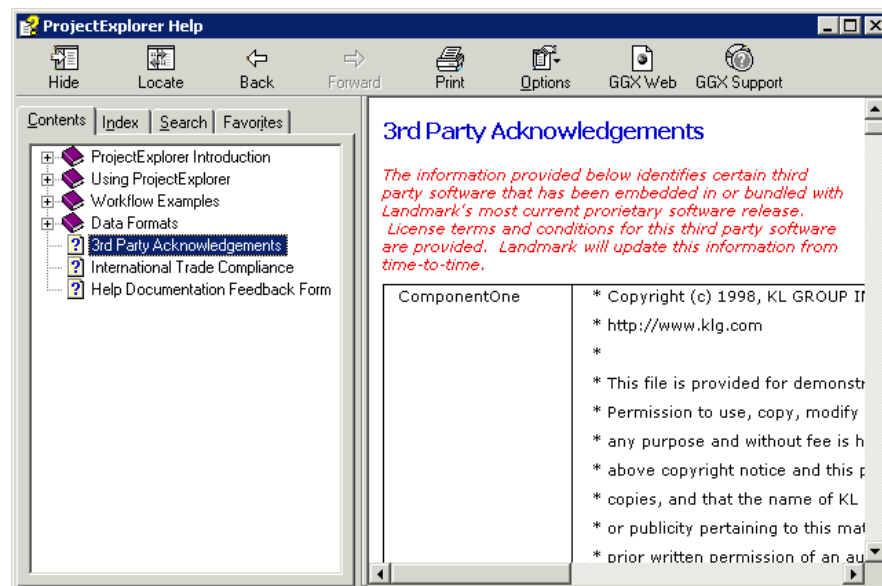
Issue	Description	Work around
DepthRegistration		
63141	DRA Import to new project copies only the original image, not the straightened log image.	Copying the straightened images folder from the parent project to the newly created project will solve this problem
SeisVision		
64058	Printed SV layers have drawing issues related to line width and colors when compared with SV 32 layer prints	Layers demonstrating issues may be optimally printed using SeisVision 32 bit.
62679	Pick parameters panel window cannot be resized onto two monitors.	No known workaround except to limit the SeisVision window to one screen.
60367	Interpolated fault plane does not display above depth of zero in DOW SeisVision	No known workaround
3D visualization		
60645	Perforation display issue when zooming in on deviated wells.	Zooming out will show the perforations without distortion
63336	Unassigned Interpreted faults in SeisVision do not appear in the 3D View	To view the faults name them "Unassigned" in SeisVision.
64131	Formation tops not properly showing lithology.	Assign the lithology to all Formations in WellBase
GeoAtlas		
62491	Field Planning – Unable to mark the last slot location when layers have had coordinate transformation	Deactivate the current project, then reactivate it again. This action will resolve the problem.
64157	Field Planning – In a Tracts layer separate boundaries are created for the selection of overlapping drillable areas in Shapefiles of same extents.	Do not make selection of intersecting drillable areas (different drillable areas that overlap each other) in constituent Shapefiles of a tracts layer. This issue has also been documented in the ShapeViewer topic of the Field Planning Help files.
65183	Field Planning – Slot configuration changes if the user creates/marks slot on existing Well Pad using Autopad.	Provide the slot configuration again and update the field planning layer.

Third Party Applications

Halliburton and LMKR use various third-party applications in the development of its software.

Halliburton and LMKR acknowledge that certain third party code has been bundled with, or embedded in, its software. The licensors of this third party code, and the terms and conditions of their respective licenses, may be found in the GeoGraphix Help files. To access the third party applications:

1. In any GeoGraphix application select Help >> Contents.
2. On the Help window contents page locate the Third Party Acknowledgements Help topic as shown below.





International Trade Compliance

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The ECCN's provided in Release Notes represent Halliburton's opinion of the correct classification for the product today (based on the original software and/or original hardware). Classifications are subject to change. If you have any questions or need assistance please contact us at:

FHOUEXP@halliburton.com

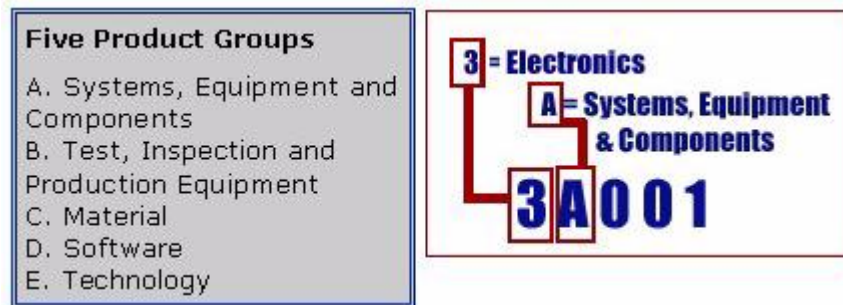
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The URL is: <http://www.bis.doc.gov>

Definitions

CCATS (Commodity Classification Automated Tracking System) - the tracking number assigned by the U.S. Bureau of Industry and Security (BIS) to products formally reviewed and classified by the government. The CCATS provides information concerning export/re-export authorizations, available exceptions, and conditions.

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The ECCN/CCL Number, License Type, and the CCATS Numbers for this product are included in the table below. Also included is the date the table was last updated.

Product/Component/R5000	ECCN/CCL Number	License	CCATS Number	Last Date Updated
Discovery	5D002	ENC	G063964	11/5/2009
Landmark Software Manager (LSM)	5D002	ENC	G058319	2/11/2008
OpenWorks	5D002	ENC	G054746	2/11/2008
LMKR License Manager	EAR99			10/1/2012



Contacting Technical Support

If you have questions or issues that cannot be answered by the LMKR Help Systems, you can contact LMKR Customer Support via web: support.LMKR.com , email: support@lmkr.com or telephone at our various worldwide office locations:

The Americas	Europe, Middle East & Africa
8am-6pm CST *Excluding bank holidays [Monday – Friday] Toll Free (US/Canada): + 1 855 GGX LMKR Colombia: + 57 1381 4908 United States: + 1 303 295 0020 Canada: + 1 587 233 4004	UAE (Dubai GMT+4): 8am - 5pm [Sunday – Thursday] *Excluding bank holidays + 971 4 3727 999 UK: 8am - 5pm [Monday - Friday] *Excluding bank holidays + 44 20 3608 8042 Egypt: [Sunday – Thursday] *Excluding bank holidays + 0800 000 0635
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Malaysia (Kuala Lumpur GMT+8): 9am - 6pm [Monday – Friday] *Excluding bank holidays +60 32 300 8777	Pakistan (Islamabad GMT+5): 9am - 6pm [Monday – Friday] *Excluding bank holidays + 92 51 209 7400

Helpful Internet Links

Name	Website Address
LMKR home page	http://www.lmkr.com
LMKR Support Portal	http://support.lmkr.com
Landmark Support Portal	http://css.lgc.com/InfoCenter/index?page=home
Landmark Software and Services home page	http://halliburton.com/landmark
SyBase home page	http://www.sybase.com
Microsoft SQL Server home page	http://www.microsoft.com/sqlserver
Oracle home page	http://www.oracle.com



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3D Drill View, 3D Drill View KM, 3D Surveillance, 3DFS, 3DView, Active Field Surveillance, Active Reservoir Surveillance, Adaptive Mesh Refining, ADC, Advanced Data Transfer, Analysis Model Layering, ARIES, ARIES DecisionSuite, Asset Data Mining, Asset Decision Solutions, Asset Development Center, Asset Development Centre, Asset Journal, Asset Performance, AssetConnect, AssetConnect Enterprise, AssetConnect Enterprise Express, AssetConnect Expert, AssetDirector, AssetJournal, AssetLink, AssetLink Advisor, AssetLink Director, AssetLink Observer, AssetObserver, AssetObserver Advisor, AssetOptimizer, AssetPlanner, AssetPredictor, AssetSolver, AssetSolver Online, AssetView, AssetView 2D, AssetView 3D, BLITZPAK, CasingLife, CasingSeat, CDS Connect, Channel Trim, COMPASS, Contract Generation, Corporate Data Archiver, Corporate Data Store, Data Analyzer, DataManager, DataStar, DBPlot, Decision Management System, DecisionSpace, DecisionSpace 3D Drill View, DecisionSpace 3D Drill View KM, DecisionSpace AssetLink, DecisionSpace AssetPlanner, DecisionSpace AssetSolver, DecisionSpace Atomic Meshing, DecisionSpace Nexus, DecisionSpace Reservoir, DecisionSuite, Deeper Knowledge, Broader Understanding., Depth Team, Depth Team Explorer, Depth Team Express, Depth Team Extreme, Depth Team Interpreter, DepthTeam, DepthTeam Explorer, DepthTeam Express, DepthTeam Extreme, DepthTeam Interpreter, Design, Desktop Navigator, DESKTOP-PVT, DESKTOP-VIP, DEX, DIMS, GeoGraphix, Discovery 3D, Discovery Asset, Discovery Framebuilder, Discovery PowerStation, DMS, Drillability Suite, Drilling Desktop, DrillModel, Drill-to-the-Earth-Model, Drillworks, Drillworks ConnectML, DSS, Dynamic Reservoir Management, Dynamic Surveillance System, EarthCube, EDM, EDM AutoSync, EDT, eLandmark, Engineer's Data Model, Engineer's Desktop, Engineer's Link, ESP, Event Similarity Prediction, ezFault, ezModel, ezSurface, ezTracker, ezTracker2D, FastTrack, Field Scenario Planner, FieldPlan, For Production, FZAP!, GeoAtlas, GeoDataLoad, GeoGraphix, GeoGraphix Exploration System, GeoLink, Geometric Kernel, GeoProbe, GeoProbe GF DataServer, GeoSmith, GES, GES97, GESXplorer, GMAplus, GMI Imager, Grid3D, GRIDGENR, H. Clean, Handheld Field Operator, HHFO, High Science Simplified, Horizon Generation, I2 Enterprise, iDIMS, Infrastructure, Iso Core, IsoMap, iWellFile, KnowledgeSource, Landmark (as a service), Landmark (as software), Landmark Decision Center, Landmark Logo and Design, Landscape, Large Model, Lattix, LeaseMap, LogEdit, LogM, LogPrep, Magic Earth, Make Great Decisions, MathPack, MDS Connect, MicroTopology, MIMIC, MIMIC+, Model Builder, Nexus (as a service), Nexus (as software), Nexus View, Object MP, OpenBooks, OpenJournal, OpenSGM, OpenVision, OpenWells, OpenWire, OpenWire Client, OpenWire Direct, OpenWire Server, OpenWorks, OpenWorks Development Kit, OpenWorks Production, OpenWorks Well File, PAL, Parallel-VIP, Parametric Modeling, PetroBank, PetroBank Explorer, PetroBank Master Data Store, PetroStor, PetroWorks, PetroWorks Asset, PetroWorks Pro, PetroWorks ULTRA, PlotView, Point Gridding Plus, Pointing Dispatcher, PostStack, PostStack ESP, PostStack Family, Power Interpretation, PowerCalculator, PowerExplorer, PowerExplorer Connect, PowerGrid, PowerHub, PowerModel, PowerView, PrecisionTarget, Presgraf, PressWorks, PRIZM, Production, Production Asset Manager, PROFILE, Project Administrator, ProMAGIC, ProMAGIC Connect, ProMAGIC Server, ProMAX, ProMAX 2D, ProMax 3D, ProMAX 3DPSDM, ProMAX 4D, ProMAX Family, ProMAX MVA, ProMAX VSP, pSTax, Query Builder, Quick, Quick+, QUICKDIF, Quickwell, Quickwell+, Quiklog, QUIKRAY, QUIKSHOT, QUIKVSP, RAVE, RAYMAP, RAYMAP+, Real Freedom, Real Time Asset Management Center, Real Time Decision Center, Real Time Operations Center, Real Time Production Surveillance, Real Time Surveillance, Real-time View, Reference Data Manager, Reservoir, Reservoir Framework Builder, RESev, ResMap, RTOC, SCAN, SeisCube, SeisMap, SeisModel, SeisSpace, SeisVision, SeisWell, SeisWorks, SeisWorks 2D, SeisWorks 3D, SeisWorks PowerCalculator, SeisWorks PowerJournal, SeisWorks PowerSection, SeisWorks PowerView, SeisXchange, Semblance Computation and Analysis, Sierra Family, SigmaView, SimConnect, SimConvert, SimDataStudio, SimResults, SimResults+, SimResults+3D, SIVA+, SLAM, SmartFlow, smartSECTION, Spatializer, SpecDecomp, StrataAmp, StrataMap, StrataModel, StrataSim, StratWorks, StratWorks 3D, StreamCalc, StressCheck, STRUCT, Structure Cube, Surf & Connect, SynTool, System Start for Servers, SystemStart, SystemStart for Clients, SystemStart for Servers, SystemStart for Storage, Tanks & Tubes, TDQ, Team Workspace, TERAS, T-Grid, The Engineer's DeskTop, Total Drilling Performance, TOW/cs, TOW/cs Revenue Interface, TracPlanner, TracPlanner Xpress, Trend Form Gridding, Trimmed Grid, Turbo Synthetics, VESPA, VESPA+, VIP, VIP-COMP, VIP-CORE, VIPDataStudio, VIP-DUAL, VIP-ENCORE, VIP-EXECUTIVE, VIP-Local Grid Refinement, VIP-THERM, WavX, Web Editor, Well Cost, Well H. 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