S&P Global
Commodity Insights

Petra 2022

New Features

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July 2022

Release Dates:

Petra 2021 (v. 3.15): July 6th, 2021

Petra 2021 Hot Fix 1 (v. 3.15.1): August 17th, 2021

Petra 2021 Hot Fix 2 (v. 3.15.2): September 19th, 2021

Petra 2021 Hot Fix 3 (v. 3.15.3): November 3rd, 2021

Petra 2021 Hot Fix 4 (v. 3.15.4): April 7th, 2022

Petra 2022 (v. 3.16): July 5th, 2022

All versions available via download:
http://onlinehelp.ihs.com/Energy/Petra/HelpCenter/Content/Downloads.htm

Agenda

1. Overview of new features added in Petra 2022:
    1. New Computes
    2. Raster Log Maintenance Updates
    3. Main Functionality Improvements
    4. Deviated Borehole Data Posting
    5. Additional Map Module Enhancements
    6. Cross-Section Enhancements
2. Live Demo of highlighted features
3. 2023 Road Map
4. Q&A!

Petra Roadmap

July 2021

v. 2021 (3.15)

- Overlay Sub-Folders
- Map Quick list enhancements
- Transparency controls for contour color fill in Map
- New Computes:
  - Deviation Survey data extraction
  - Completions data extraction
- Date queries for Deviation Surveys
- Additional save/load templates for x-section settings dialogs
- Ascii export updates

July 2022

v. 2022 (3.16)

- New Deviation Survey compute to calculate inclination and azimuth
- Fm Tops IF-THEN-ELSE compute
- Updates to Blue Marble projection systems
- New query categories
- Raster log maintenance updates
- Expanded data category options for posting along worm-track
- Multiple survey per well posted on map
- Map functionality improvements
- Cross-Section well highlight features

2022 SP1 & 2023

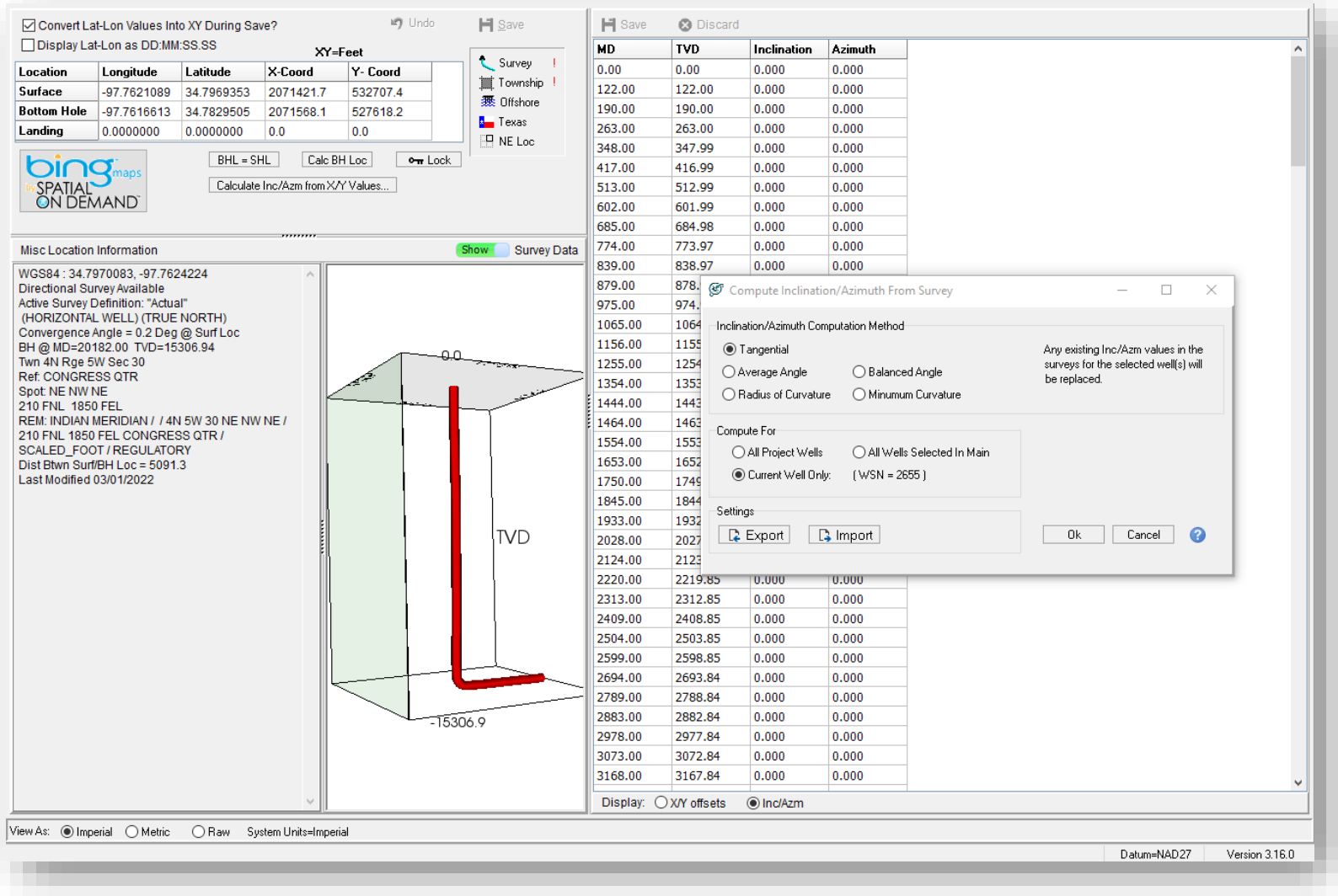
v. 2022 SP (3.16) and 2023 (3.17)

- New Direct Connections to Bulk Log Database (*WLD, Kingdom*)
- New Direct Connections to North American Data Model (Snowflake)
- Gun-Barrel/Wine-Rack diagram analysis
- Workflow Automation Tool
- Updates to User Interface
- Customer Feedback and Enhancement requests

Main Module Enhancements and New Features

New Deviation Survey Computes

- **Calculate Inclination and Azimuth from DX/DY**
  - > Update deviation survey table with new calculated numbers
  - > Options for Computation Method (Default is Minimum Curvature)
  - > IHS RAW data stored for original records
  - > Bulk and single well compute options



Benefits:

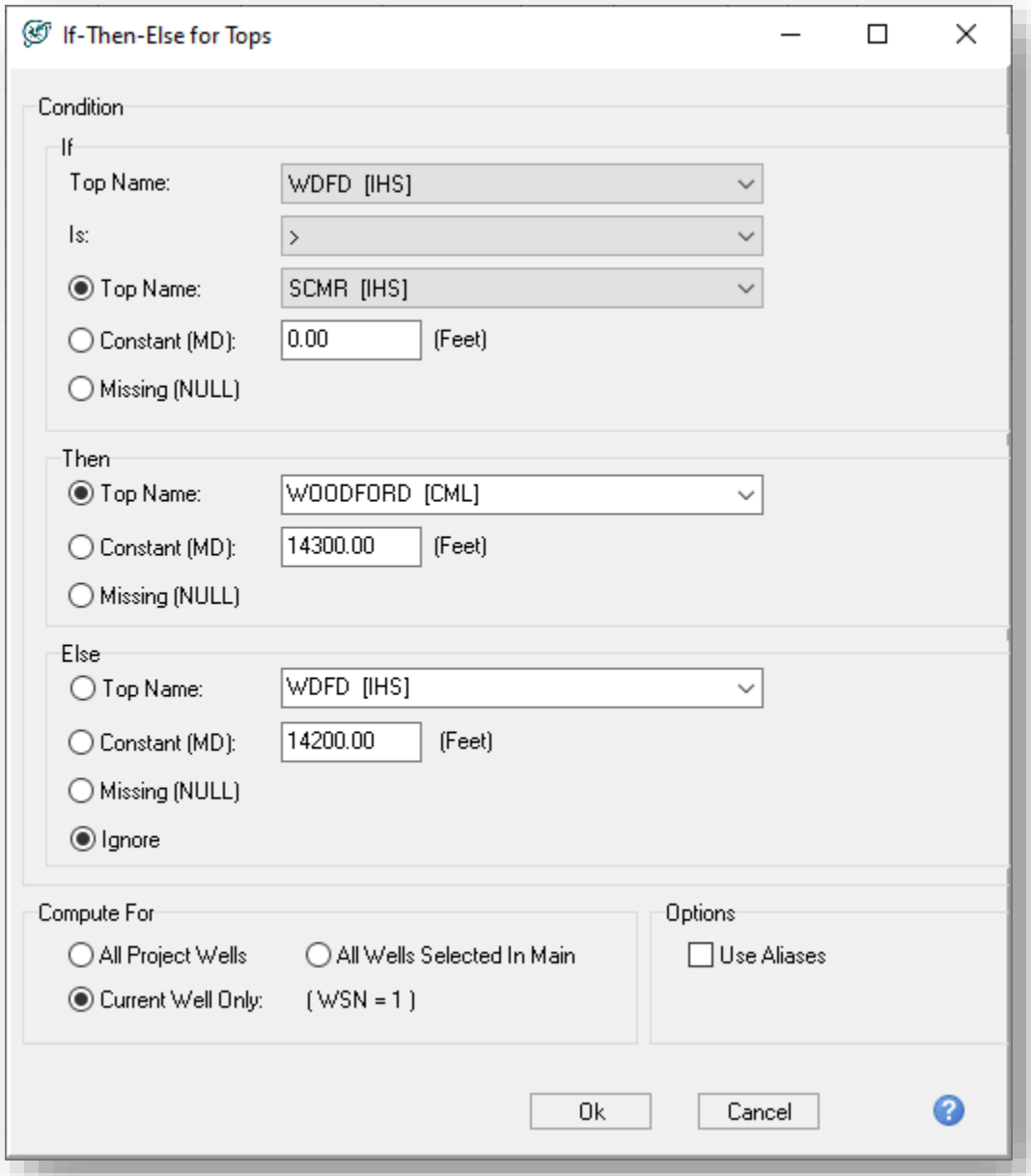
- *Option to populate and use inc/azi values if any survey in the project does not contain these values*
- *Bulk computes to update multiple surveys*

New Formation Top Computes

- **IF-THEN-ELSE:**
  - > Performs a conditional data substitution on a selected formation top according to the entered criteria
    - If the selected top meets the set condition, **then** assign that top another top name, a constant value, or a null value.
    - If the selected top does not meet the set condition, then (**Else**) assign that top another top name, a constant value, a null value, or ignore the operation.

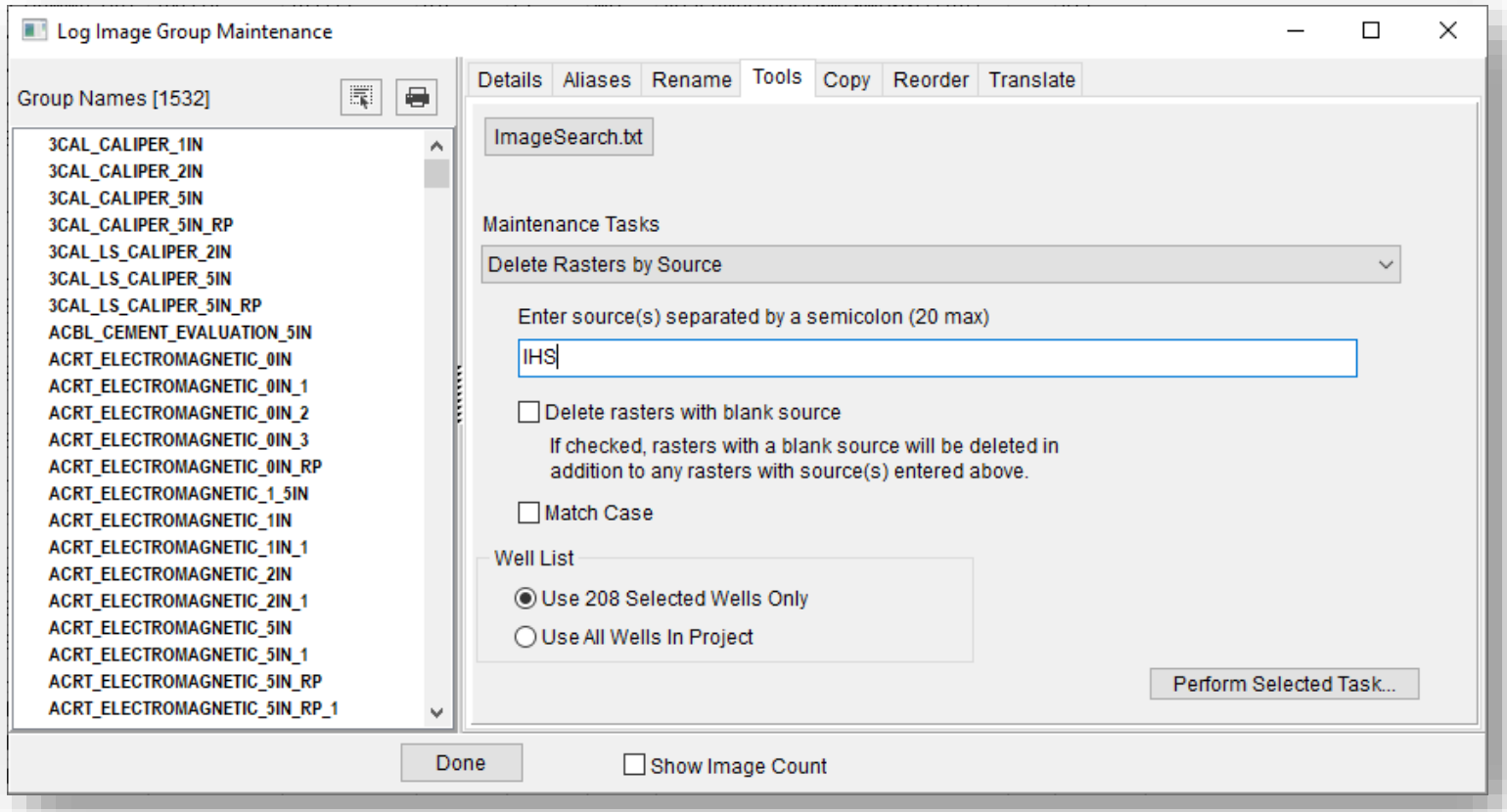
Benefits:

- *Possible reasons to use this tool might be to correct erroneously loaded tops*
- *Or to build a continuous unconformity surface across a basin*



Raster Log Maintenance Updates

- Delete raster logs by source
- Apply selected well list to maintenance tasks:
  - Export summary report
  - Resolve image paths
  - Add missing well records to LIC
  - Find/Replace LIC/TIF path prefixes
  - Delete uncalibrated rasters
  - Change blanks to underscores in LIC
  - Resolve duplicate LIC references
  - Delete association if LIC/TIF files not found
  - Delete pay from LIC files
  - Convert file references to UNC names
  - Create report showing groups to merge
  - Replace LIC/TIF paths
  - Change LIC references
  - Set image source for groups and wells
  - Delete rasters by source

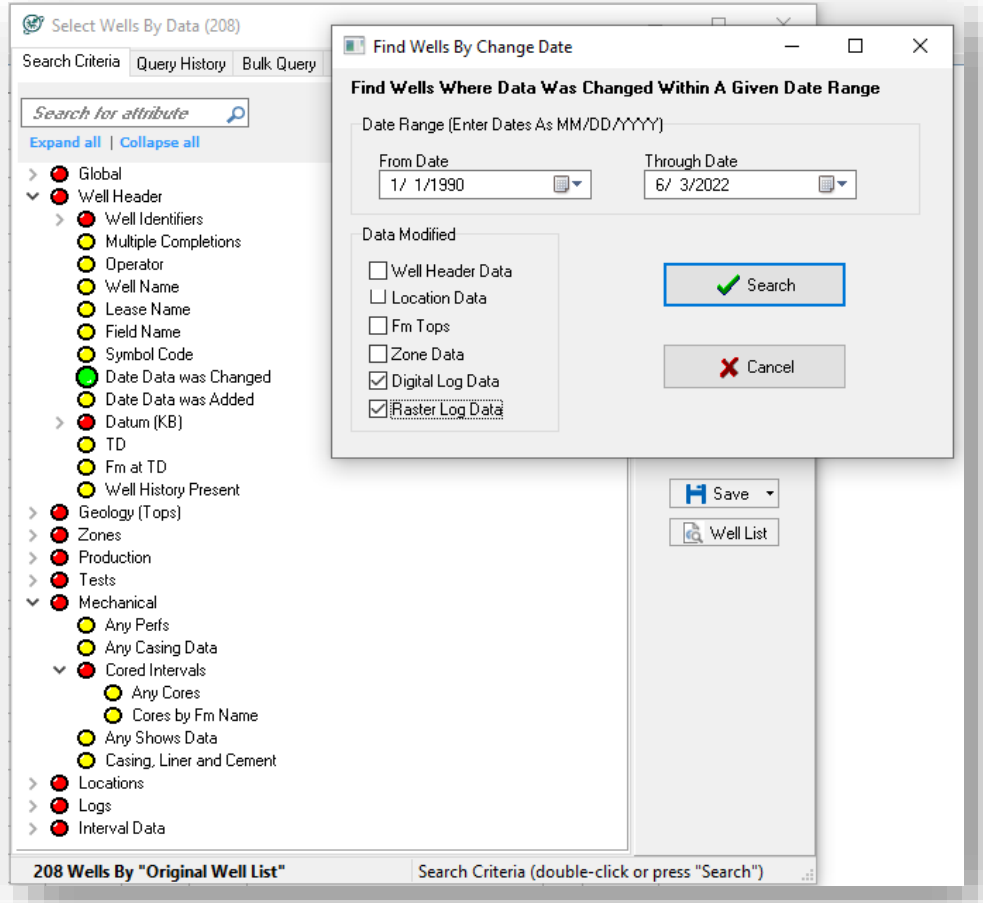


Benefits:

- *Easier project maintenance and cleanup for raster logs*

Main Functionality Improvements

- Zone order save/load template
- Queries:
  - > Raster and digital log import and modified dates
  - > Core by Formation Name
- Perf remarks added to header column
- Adjustable window boxes in ASCII importer



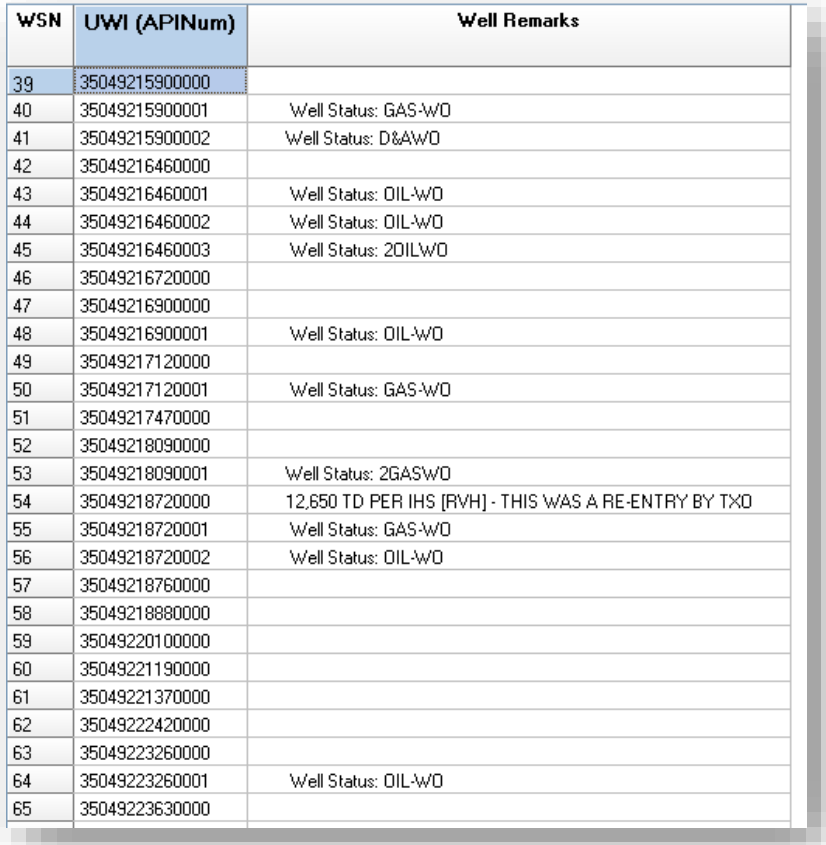
	Perf Type	Source	Fm Name	Top	Base	Interval	From Date	To Date	Comp Type	Remarks
	Active			8124	8183	59	08/10/2000	mm/dd/yyyy		Perf shot 1
	Active			9600	10444	844	08/10/2000	mm/dd/yyyy		Perf shot 2
	Active			9600	9752	152	08/10/2000	mm/dd/yyyy		Perf shot 3
	Active			9600	9686	86	08/10/2000	mm/dd/yyyy		Perf shot 4
	Active			9702	9752	50	08/10/2000	mm/dd/yyyy		Perf shot 5
	Active			9912	10444	532	08/10/2000	mm/dd/yyyy		Perf shot 6

Benefits:

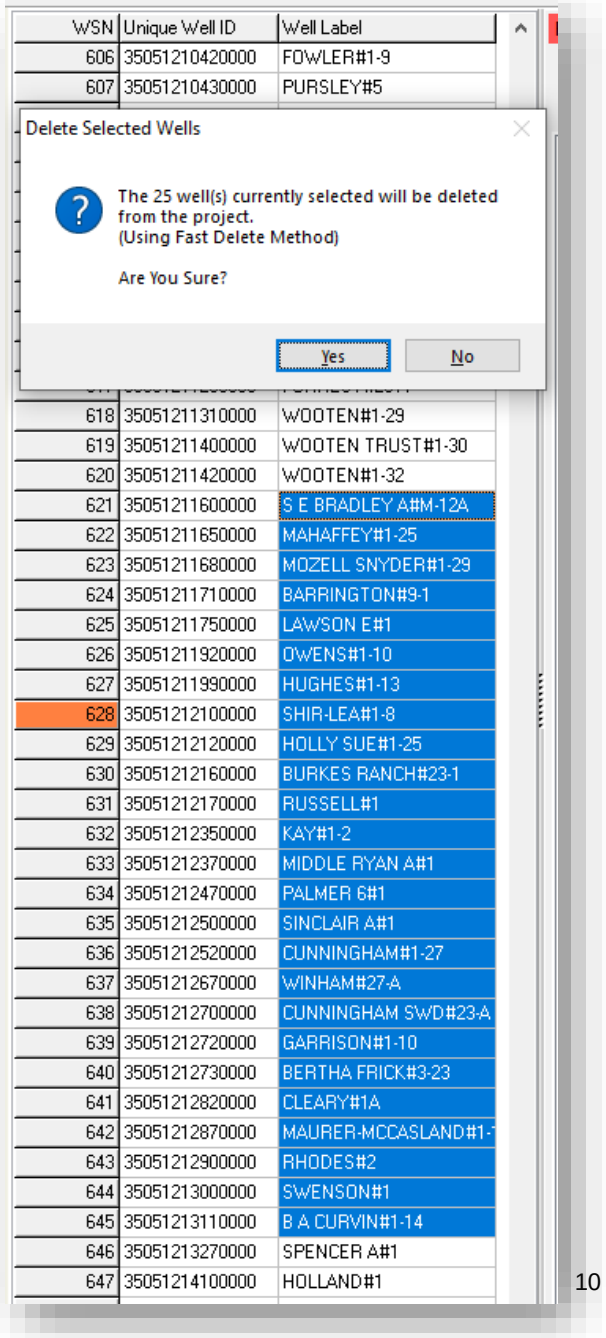
- *Small efficiency updates to speed up day to day workflows*

Main Functionality Improvements

- Logs statistics quality flag
- Jump to map with zoom level options
- Well remarks added to Spreadsheet
- Multi-well selection from well list pane
  - > Delete wells from database
  - > Highlight color and clear
  - > Add to WSN
  - > Drop from Main



WSN	UWI (APINum)	Well Remarks
39	35049215900000	
40	35049215900001	Well Status: GAS-WO
41	35049215900002	Well Status: D&AWO
42	35049216460000	
43	35049216460001	Well Status: OIL-WO
44	35049216460002	Well Status: OIL-WO
45	35049216460003	Well Status: 2OILWO
46	35049216720000	
47	35049216900000	
48	35049216900001	Well Status: OIL-WO
49	35049217120000	
50	35049217120001	Well Status: GAS-WO
51	35049217470000	
52	35049218090000	
53	35049218090001	Well Status: 2GASWO
54	35049218720000	12,650 TD PER IHS [RVH] - THIS WAS A RE-ENTRY BY TXO
55	35049218720001	Well Status: GAS-WO
56	35049218720002	Well Status: OIL-WO
57	35049218760000	
58	35049218880000	
59	35049220100000	
60	35049221190000	
61	35049221370000	
62	35049222420000	
63	35049223260000	
64	35049223260001	Well Status: OIL-WO
65	35049223630000	



WSN	Unique Well ID	Well Label
606	35051210420000	FOWLER#1-9
607	35051210430000	PURSLEY#5
618	35051211310000	WOOTEN#1-29
619	35051211400000	WOOTEN TRUST#1-30
620	35051211420000	WOOTEN#1-32
621	35051211600000	S E BRADLEY A#M-12A
622	35051211650000	MAHAFFEY#1-25
623	35051211680000	MOZELL SNYDER#1-29
624	35051211710000	BARRINGTON#9-1
625	35051211750000	LAWSON E#1
626	35051211920000	OWENS#1-10
627	35051211990000	HUGHES#1-13
628	35051212100000	SHIR-LEA#1-8
629	35051212120000	HOLLY SUE#1-25
630	35051212160000	BURKES RANCH#23-1
631	35051212170000	RUSSELL#1
632	35051212350000	KAY#1-2
633	35051212370000	MIDDLE RYAN A#1
634	35051212470000	PALMER 6#1
635	35051212500000	SINCLAIR A#1
636	35051212520000	CUNNINGHAM#1-27
637	35051212670000	WINHAM#27-A
638	35051212700000	CUNNINGHAM SWD#23-A
639	35051212720000	GARRISON#1-10
640	35051212730000	BERTHA FRICK#3-23
641	35051212820000	CLEARY#1A
642	35051212870000	MAURER-MCCASLAND#1-
643	35051212900000	RHODES#2
644	35051213000000	SWENSON#1
645	35051213110000	B A CURVIN#1-14
646	35051213270000	SPENCER A#1
647	35051214100000	HOLLAND#1

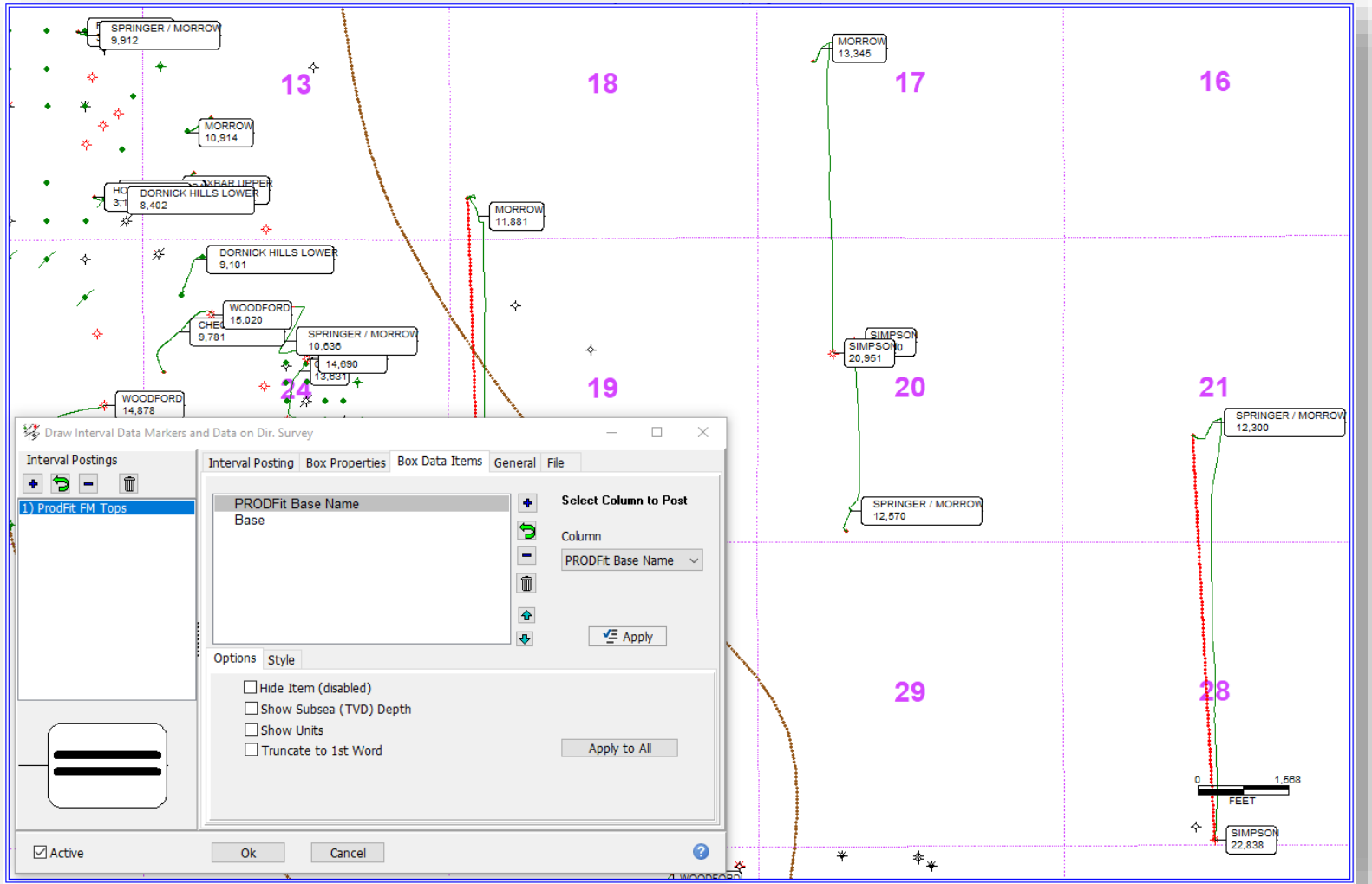
Benefits:

- *Small efficiency updates to speed up day to day workflows*

Map Module Enhancements and New Features

Deviated Borehole Data Posting

- Post data along worm-track
  - > Interval data Z value and text items
  - > Perf labels:
    - – Top and Base Depths
    - – Remarks
  - > Zone attribute items

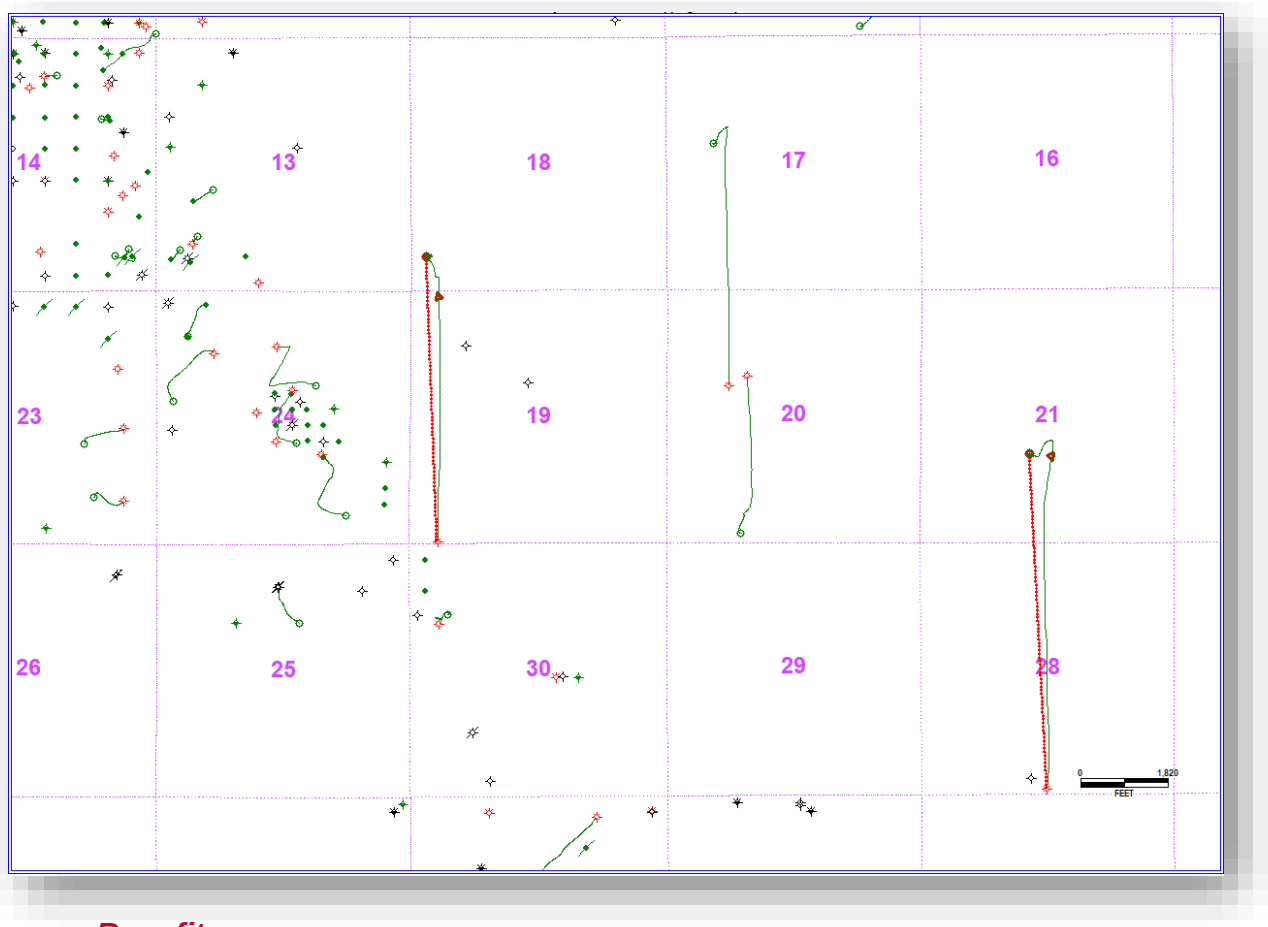


Benefits:

- *More options for posting and visualizing well and production data along a deviated borehole*

Map Module Enhancements

- Plot multiple deviation surveys on Map
- Select overlay polygons with digitized polygon
- Expanded zoom options:
  - > Jump to Map (from Main) updated
  - > Zoom on center point
- Smooth/simplify multiple overlay lines
- Bubble Map Updates
  - > New Legend tab added
  - > Legends applicable for normal and pie bubble mode in one-color
- Grid Volumetrics option to compute for zoomed in map area



Benefits:

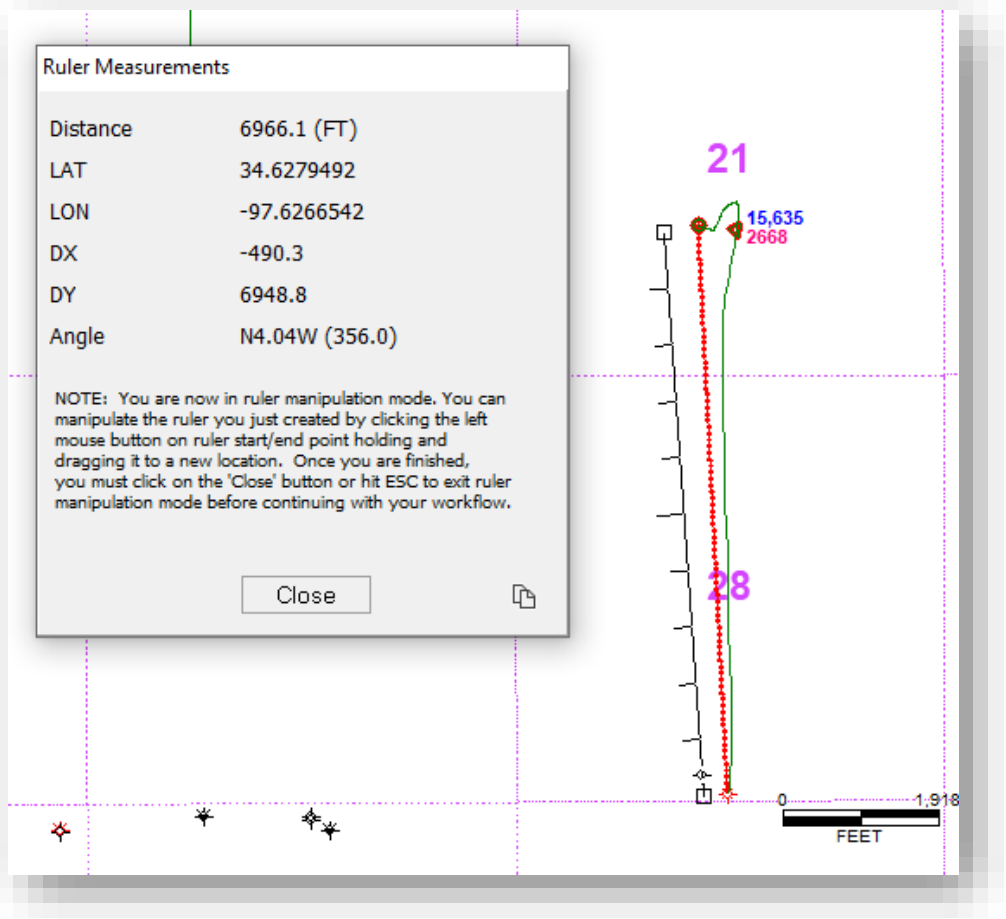
- *Option to see planned/proposed and drilled surveys posted per well*

Map Module Enhancements

- Data Posting:
  - > Landing location spot posting added
  - > Turn off Wells in Quick List without turning off Data Posting
- WSN/DWL Quick List:
  - > List sorting
  - > Expanded number of file adds to QL
- Ruler and Polygon:
  - > Moveable vertices with updated measurements
  - > Measurement dialog able to be copied to clipboard

Benefits:

- *Updated data posting to accommodate landing location*
- *Dynamic measurement updates*



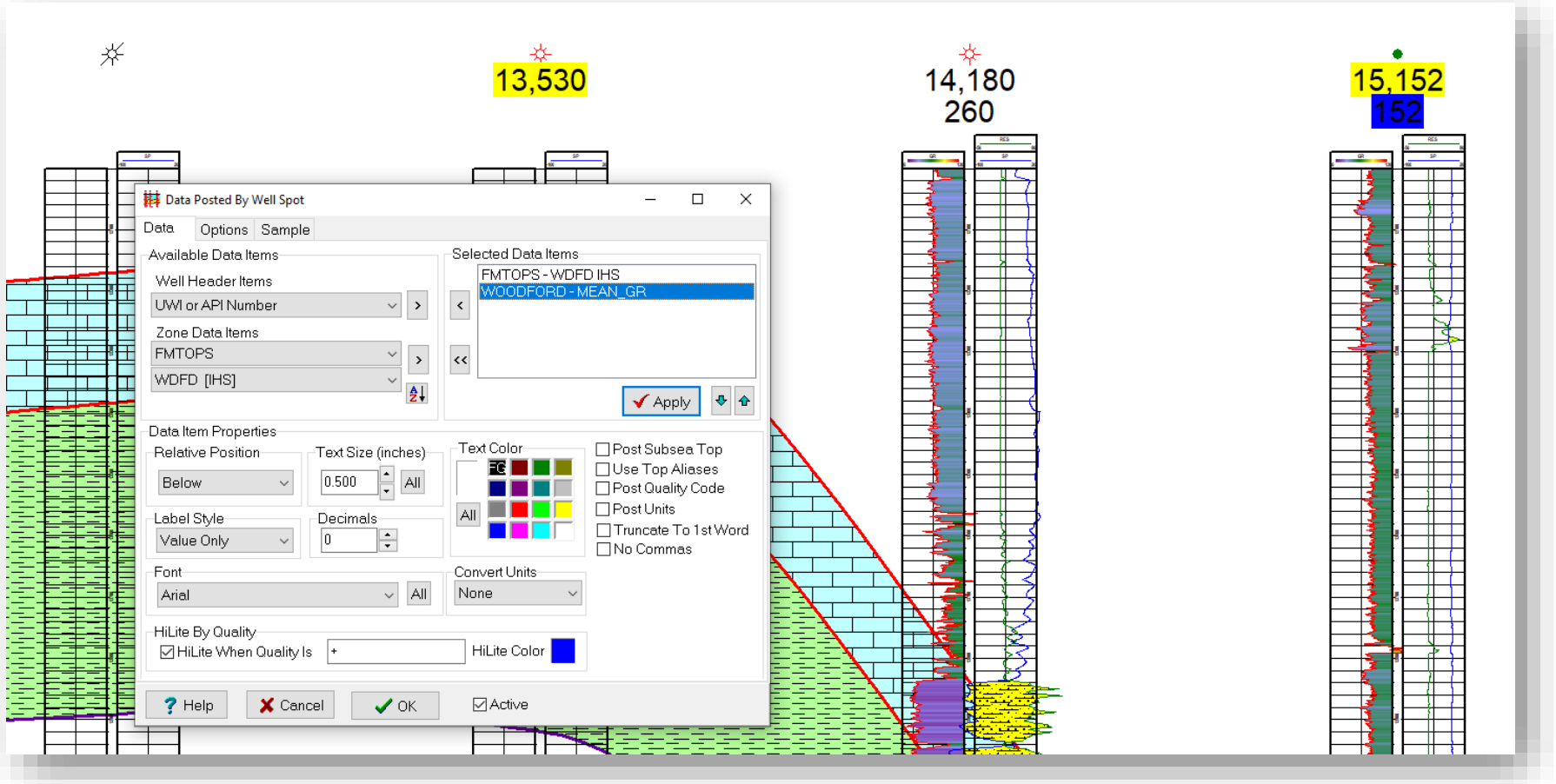
Cross-Section Enhancements and New Features

Cross-Section Enhancements

- Hide top from Single Well
- Highlight by Quality added to Data Posted by Well Spot

Benefits:

- *Visually identify key wells while in Cross Section*



Petra 2023 Road Map

Petra 2023 and **Beyond** Roadmap Overview

- **Petra/Kingdom Project Data Sync Tool**
  - Well data
  - Production
  - Zones
  - Digital Logs
  - Grids

- **Main**
  - Direct Connect migration to Bulk Logs database (same as Kingdom and Well Log Downloader)
  - Direct Connect migration to North American ADM content database
  - Updates to latest Blue Marble version
  - Work-flow builder and automation tool
  - Import file format updates
  - Export updates
  - Added parameters to Deviation Survey computes
  - Remarks section for Project Tab
  - Client feedback enhancement requests

- **Map**
  - Continued overlay updates
  - Borehole sticks/Worm tracks colored by attribute selection
  - Multiple Map Modules
  - Client feedback enhancement requests

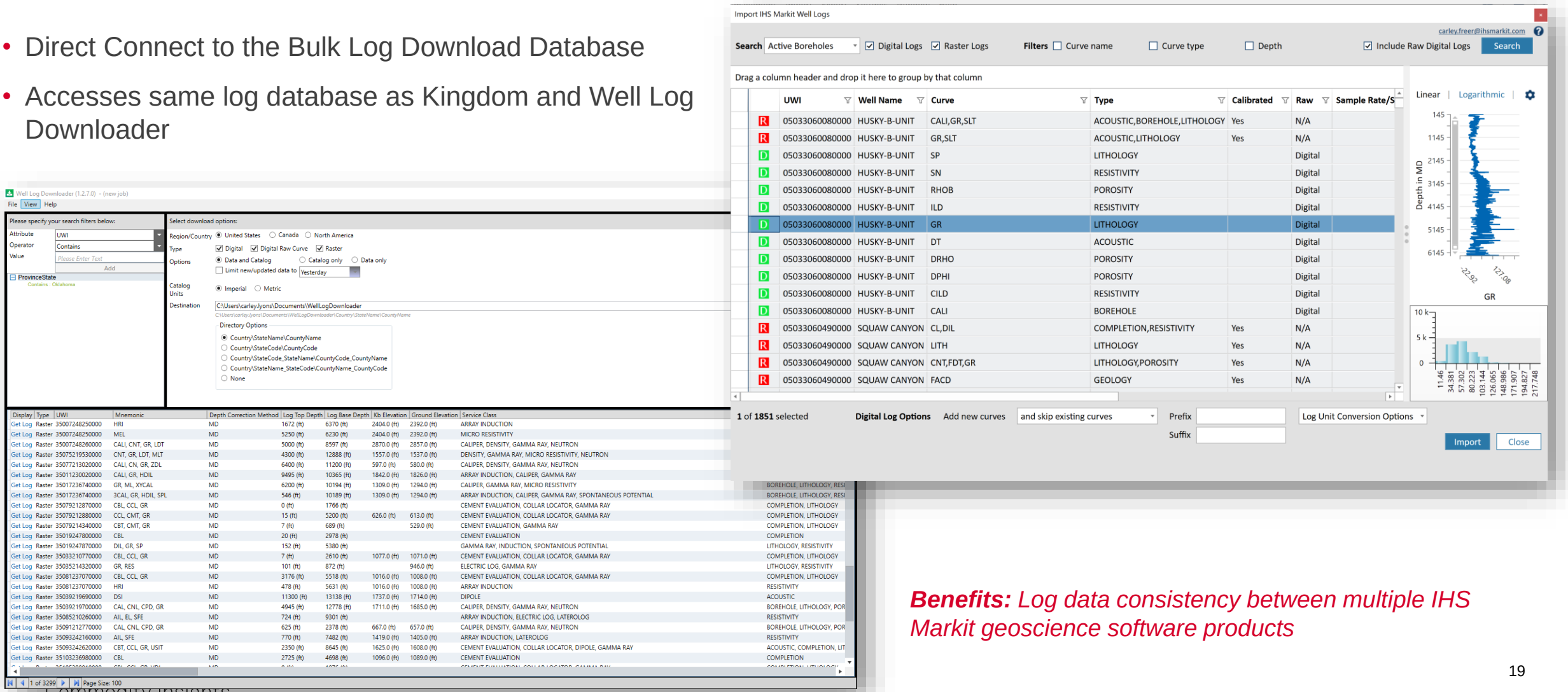
- **Cross-Section & Directional Well Module**
  - Data posting location options (SHL/BHL)
  - Gun-barrel/Wine-Rack diagrams
  - Multiple Cross-Sections
  - Client feedback enhancement requests

***Completed feature**

Tentative list as of June 2022

IHS Markit Log Data Connections

- Direct Connect to the Bulk Log Download Database
- Accesses same log database as Kingdom and Well Log Downloader



Benefits: *Log data consistency between multiple IHS Markit geoscience software products*

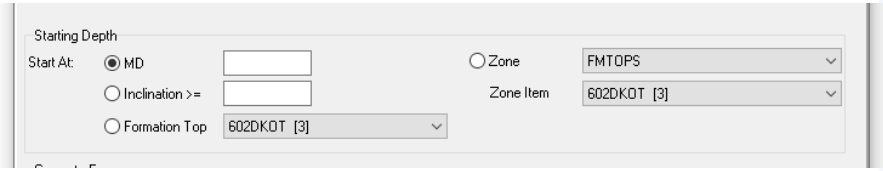
Directional Well Module: Wine-rack/Gun-Barrel Diagram View

- **Wine-rack/Gun-Barrel view:**
  - Aids in well-spacing analysis and pad planning and design
  - Advanced analysis to visualize the midpoints of a wellbore in relation to other wellbores and formations
  - Cross-section perpendicular to the lateral length

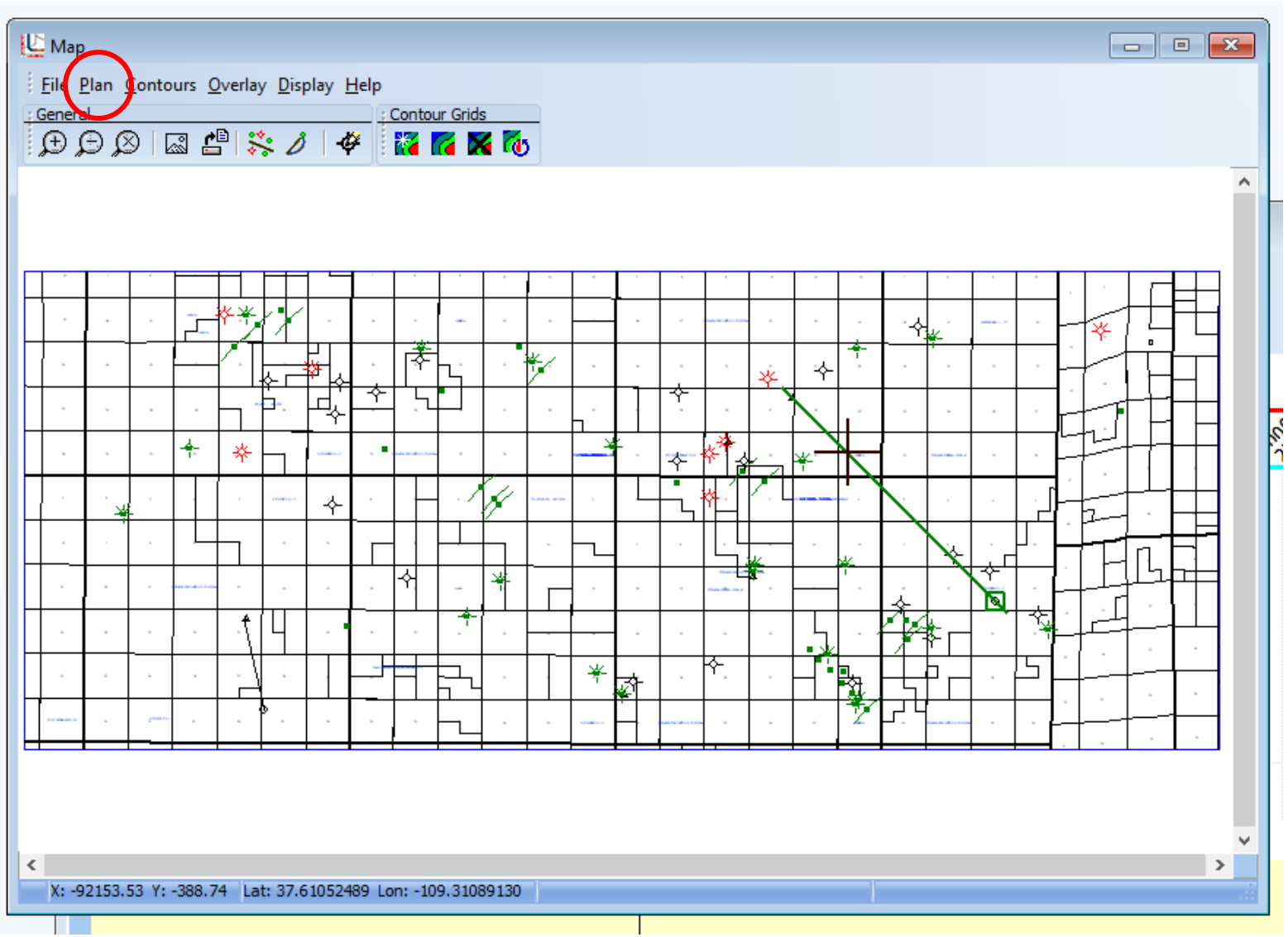
- **Well data inputs:**
  - Deviation surveys
  - Grids and Fm tops
  - Zone data, production data

Directional Well Module: Wine-rack/Gun-Barrel Diagram View

- **Plan > “Wine-rack Profile”**
- Select wells >
  - Well by well
  - Line and corridor
- Give option to select depth reference point by:
  - Toe
  - Heel (based off calculations like dev surv extract)



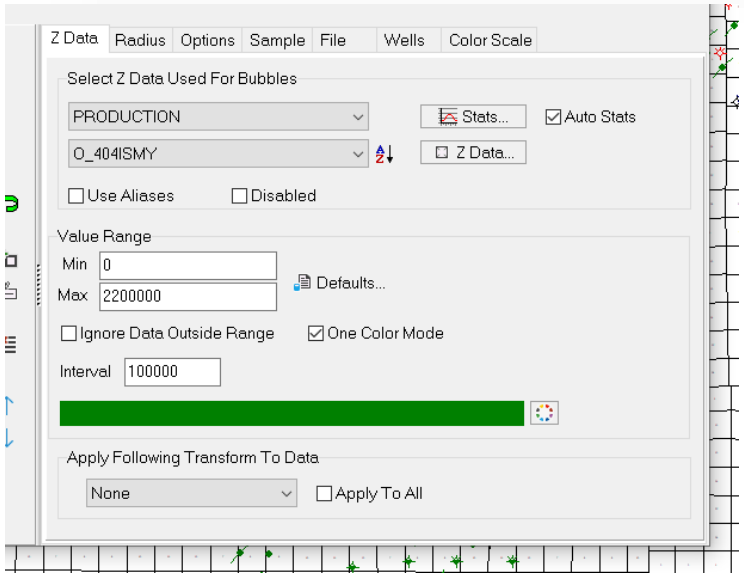
  - Midpoint
- Go to Profile View

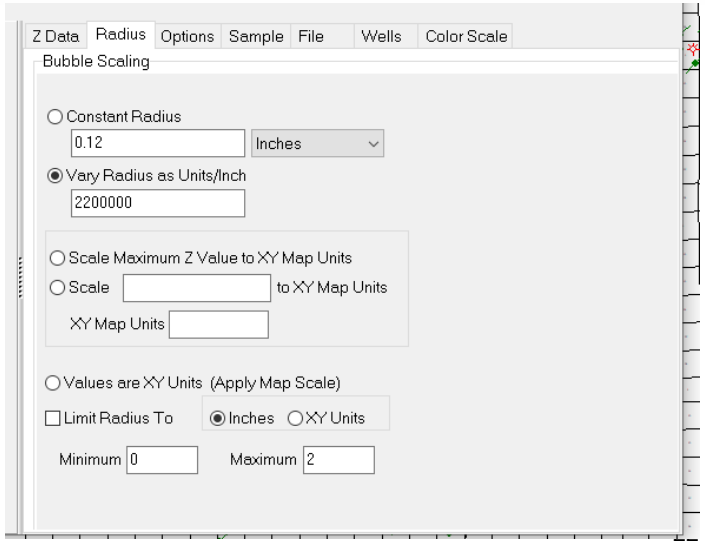


Directional Well Module: Wine-rack/Gun-Barrel Diagram View

- Gun-barrel (hole sizing) with option to “Size by”
  - Default (standard size on the screen)
  - Based on zone attribute
  - Defined radius (similar to Bubble map)

- Go to DWM Profile View
  - Y axis: depth
  - X axis: distance
- Additional option to plot Fm tops or grids





Questions? Feedback?

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