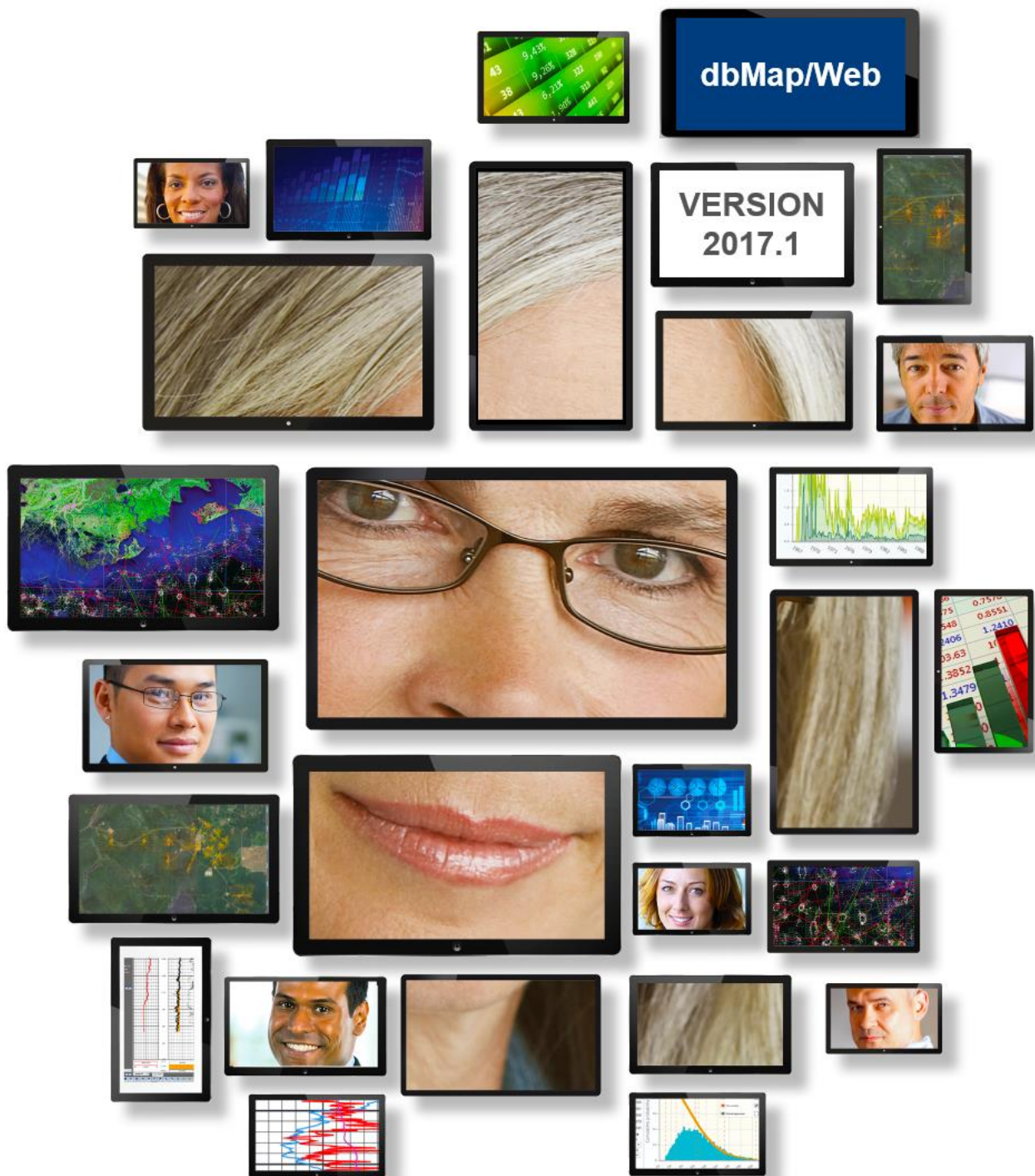


SOFTWARE RELEASE NOTES

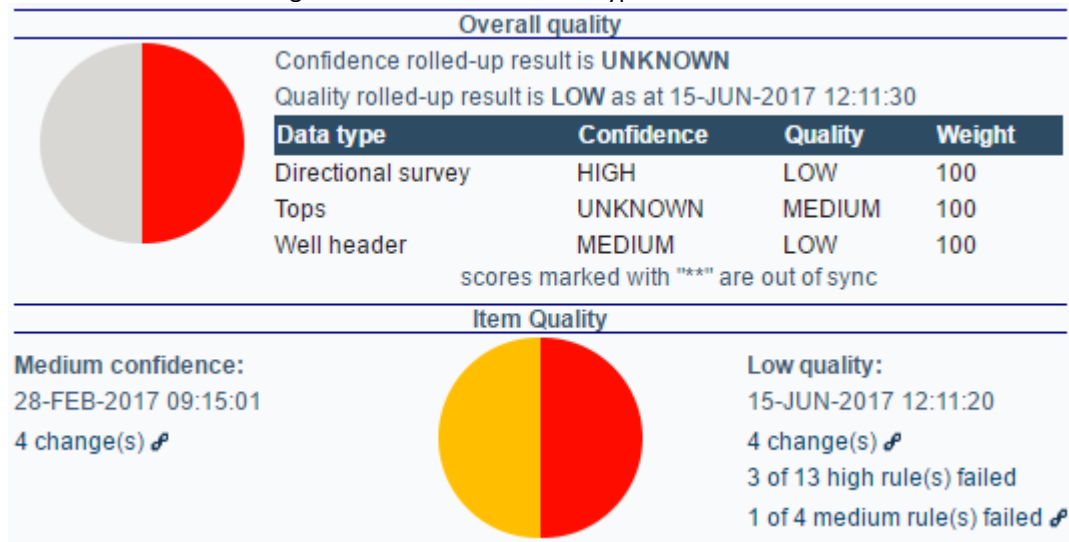
dbMap/Web Version 2017.1.3



Data Confidence and Quality

Petrosys data Confidence/Quality control is now included for PPDM 3.8 databases. This allows for data to be automatically or manually assigned a Confidence rating and be automatically rated for Quality - which is determined by a client's own business rules. Data Confidence is typically assigned by rules which are qualified by a person with expertise and domain knowledge – to express their Confidence in the data. While Data Quality is usually tested against relatively black/white rules on the data itself and relationships between data attributes.

Petrosys can provide a set of default business rules or assist with the creation of site specific business rules. Under the 'Wells' module, automatic quality processing has been implemented for the Well Header, Tops, Directional Surveys and Checkshots, with individual ratings for each data type as well as an overall rating for the Well.

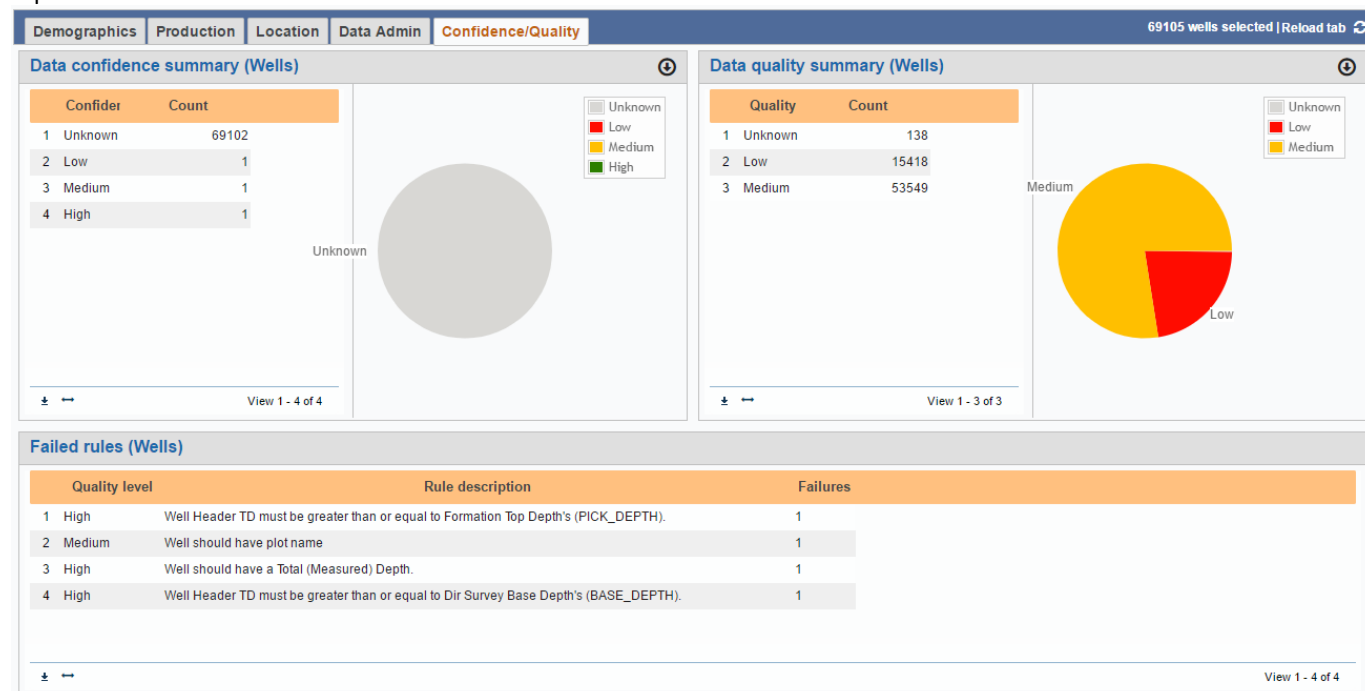


A summary of rule results is available for each item, allowing users to easily discover and fix data quality issues.

	Quality level	Passed?	Criteria
1	High	✗	Well should have a Total (Measured) Depth.
2	High	✗	Well Header TD must be greater than or equal to Dir Survey Base Depth's (BASE_DEPTH).
3	High	✗	Well Header TD must be greater than or equal to Formation Top Depth's (PICK_DEPTH).
4	Medium	✗	Well should have plot name
5	High	✓	Well should have a known Status.
6	High	✓	Well should have a known Source.
7	High	✓	Well should have a Reference Depth and Reference Type (e.g. "KB").
8	High	✓	If a Well has Water Depth recorded, it must also have a Water Depth Datum.
9	High	✓	Well Header TD must be greater than or equal to Formation Top's Depth (PICK_TVD).
10	High	✓	Well Header TD must be greater than or equal to Dir Survey Top Depth's (TOP_DEPTH).
11	High	✓	Well Header TD must be greater than or equal to Checkshot Base Depth's (BASE_DEPTH).
12	High	✓	Well Header TD must be greater than or equal to Checkshot Top Depth's (TOP_DEPTH).
13	High	✓	Well Header TD must be greater than or equal to Checkshot Monitor Depth's (MONITOR_DEPTH).
14	High	✓	Well Header TD must be greater than or equal to Checkshot Source Depth's (SOURCE_DEPTH).
15	Medium	✓	Well Name should be unique.
16	Medium	✓	Well Name should not be like other well names. Case insensitive fuzzy matching where '-', '_', and ' ' are treated as the same character.
17	Medium	✓	Well should have a location and a valid CRS

View 1 - 17 of 17

The Wells dashboard has been extended to include summary Quality/Confidence information. Each supported data type is represented and the usual dashboard filters can be used to summarise a subset of wells.



The seismic module has also been extended to support Confidence/Quality processing and other data types can be extended as required.

CRS Functionality

dbMap/web 2017.1 now supports Projected CRS conversions from Latitude/Longitude to Easting/Northing and vice-versa. It is currently limited to converting values where the Latitude/Longitude Geographic CRS matches that of the Projected CRS. This is because conversion of Latitude/Longitude values between Geographic CRSs is not supported yet, however we plan to build on this going forward.

The functionality is available for SQL reports and is available using dbMap functions such as `ps_crs_convert_x` and `ps_crs_convert_y`.

Support for PPDM 3.8 Permit, Basin and Field modules

Permit, Basin and Field data types are now supported as “first-class” data types in PPDM 3.8 environments. This allows direct access to these data types from the dbMap/Web main menu. The Wells module has been extended to allow one or more Permit/Field/Basin to be associated to a Well while also being able to quickly see spatially related records. E.g. show me all the Fields within the Basin or Wells within the Permit.

Spatial relationships between Permit, Basin and Field are also readily available in the user interface.

Reference table management tools

Tools to assist in the analysis and clean-up of reference data have been integrated into the dbMap/Web interface. The tools can be accessed under “Help \ About \ Diagnostics & Utilities \ Reference table clean-up tool”; however, are only intended for use by data administrators and will only be available to users with the PETROSYS_ADMIN role.

The tool makes it easy to identify where and how often a reference value is used:

<div>Unselect all</div> <div>Delete</div> <div>Replace/Merge</div>									
Select	COUNTRY	Short name	Long name	Source	Total count	CONTRACT.COUNTRY	FIELD.COUNTRY	FIELD_VERSION.COUNTRY	LAND_RIGHT.COUNTRY
<input type="checkbox"/>	USA	United States	United States of America	ISO	54444		22		
<input type="checkbox"/>	UNKNOWN	UNKNOWN	UNKNOWN	PETROSYS	50636		1461		
<input type="checkbox"/>	GBR	United Kingdom	United Kingdom	ISO	4606		3		
<input type="checkbox"/>	AUS	Australia	Australia	ISO	4270		12		
<input type="checkbox"/>	ARG	Argentina	Argentina	ISO	3644				
<input type="checkbox"/>	CAN	Canada	Canada	ISO	3304		25		
<input type="checkbox"/>	NOR	Norway	Norway	ISO	1244		64		
<input type="checkbox"/>	NZL	New Zealand	New Zealand	ISO	631				

Potential duplicate values are easily identified, with options to Replace/Merge offending values:

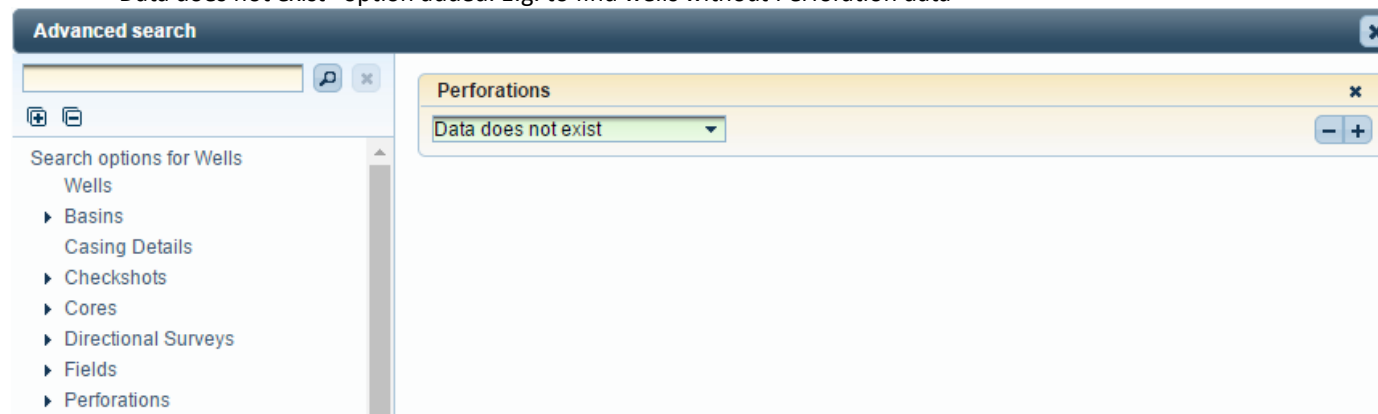
<div>Unselect all</div> <div>Replace/Merge</div>									
Select	COUNTRY 1	Name 1	Source	Count	COUNTRY 2	Name 2	Source	Count	Score
<input type="checkbox"/>	NEW ZEALAND	NEW ZEALAND	PETROSYSTEST	2	NZL	New Zealand	ISO	656	100

Notable Minor Enhancements

Advanced Search

The advanced search filter option has seen a few minor enhancements, including:

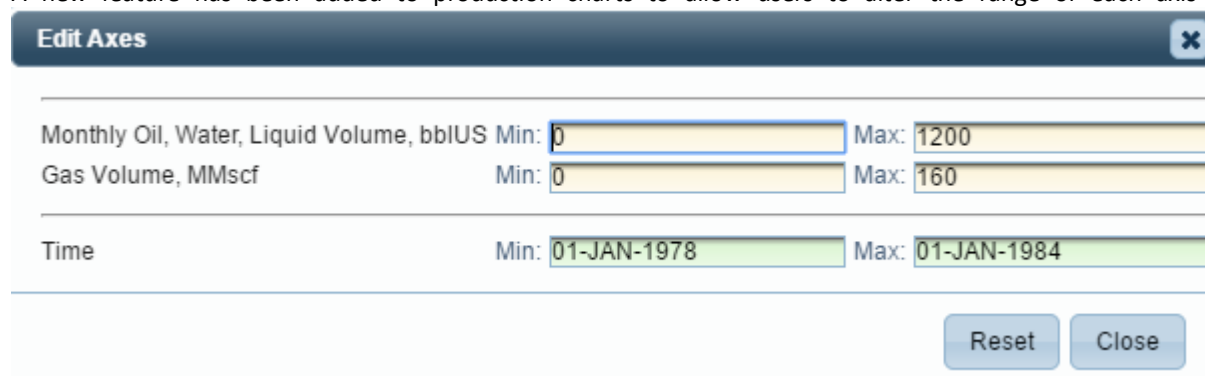
- Additional help information to guide users
- Lookups are restricted to values that are currently being used in the selected column. This is especially helpful when dealing with large datasets
- “Data does not exist” option added. E.g. to find wells without Perforation data



The screenshot shows the 'Advanced search' dialog box. On the left, there is a sidebar titled 'Search options for Wells' with a list of categories: Wells, Basins, Casing Details, Checkshots, Cores, Directional Surveys, Fields, and Perforations. The 'Perforations' category is selected. The main area of the dialog shows a dropdown menu for 'Perforations' with the option 'Data does not exist' selected. There are also search and close buttons at the top right of the dialog.

Production Charts

A new feature has been added to production charts to allow users to alter the range of each axis independently.



The screenshot shows the 'Edit Axes' dialog box. It has a title bar with 'Edit Axes' and a close button. The dialog contains three rows of input fields for setting the range of different axes. The first row is for 'Monthly Oil, Water, Liquid Volume, bblUS' with a minimum value of 0 and a maximum value of 1200. The second row is for 'Gas Volume, MMscf' with a minimum value of 0 and a maximum value of 160. The third row is for 'Time' with a minimum value of 01-JAN-1978 and a maximum value of 01-JAN-1984. At the bottom right, there are 'Reset' and 'Close' buttons.

Axis	Min	Max
Monthly Oil, Water, Liquid Volume, bblUS	0	1200
Gas Volume, MMscf	0	160
Time	01-JAN-1978	01-JAN-1984

New Filter Options

The “Database Polygon” filter option allows a spatial search based on one or more objects from the GIS/Culture system. Eg filter or limit the list of seismic lines to be only those within the UK Oil fields.

Group

Poly group name

19 UK Gas condensate fields

20 UK Gas fields

21 UK Oil fields

22 USA Counties

23 USA GOM Blocks

24 USA GOM Counties

25 USA GOM MMS Districts

View 1 - 32 of 32

Items

-

Poly name

1 ☒ 11/24-01

2 ☒ 14/18-01

3 ☐ 14/18B-12

4 ☐ 14/19B-23

5 ☐ 14/20-06Z

6 ☐ 14/20B-18

7 ☐ 15/13-02

☐

View 1 - 60 of 238

Find

Inside ▾

OK

Cancel

Clear

The “Cross Reference” filter option allows a search based on linked data types using a current or stored selection of that data type e.g. searching Wells related to a stored selection of Basins.

Cross Reference - Filter by links to other data types

Data Type

Basins ▾

☐ Current selected

☒ Stored selection list

Selection list

OK

Cancel

You May Have Missed dbMap/Web Version 1.7

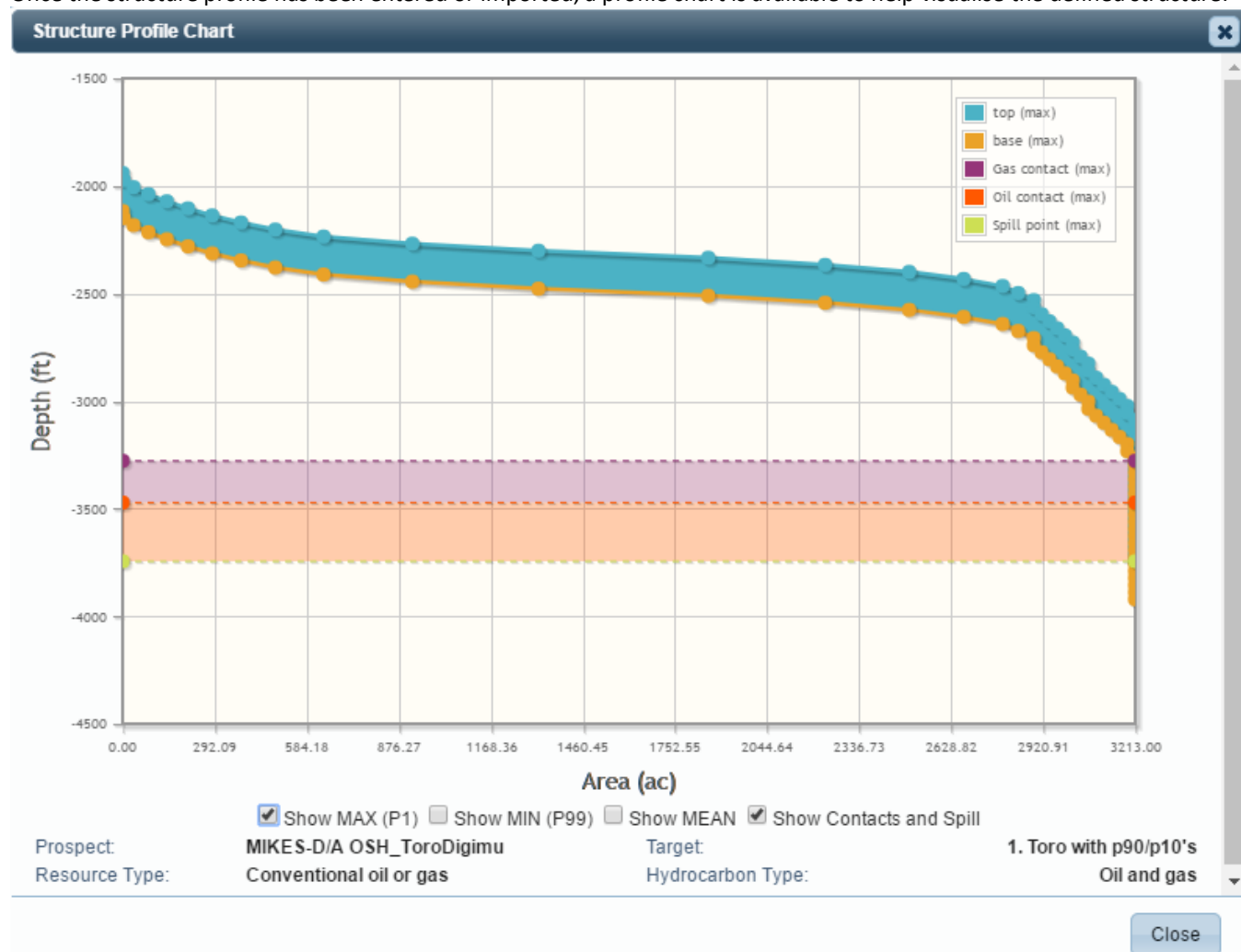
Prospects & Leads - Added support for structure profile definitions to depth area computation

New Depth-Area compute methods have been added to Prospect & Leads (PLDB) to allow structure profile definitions:

Depth-Area Base (Constant Thickness)	Depth-Area Method Base Structure: Depth-Area pairs, constant vertical thickness
Depth-Area Base (Variable Thickness)	Depth-Area Method Base Structure: Depth-Area pairs, vertical thickness can vary with depth
Depth-Area Top & Base Structure	Depth-Area Method Top & Base Structure: Depth-Area pairs for Top, Depth-Slice area pairs for Base
Depth-Area Top (Constant Thickness)	Depth-Area Method Top Structure: Depth-Area pairs, constant vertical thickness
Depth-Area Top (Variable Thickness)	Depth-Area Method Top Structure: Depth-Area pairs, vertical thickness can vary with depth

Top Structure Depth-Area	Geology	Oil	Associated Gas	Non-Associated Gas	Gas liquids	Probability factors	Correlation	Results - Oil	Results - Associated Gas	Results - Non-Associated Gas	Results - Gas liquids	
Depth (m)	Variable	Minimum (P99)	Low Side (P90)	Median (P50)	Mean	Constant/Mode	High Side (P10)	Maximum (P1)	Distribution Type			
1940.289 Top Area (ac)						0.000			Constant			
1973.097 Top Area (ac)		3.954	3.954	3.954	3.954		3.954	3.954	Lognormal			
2005.906 Top Area (ac)		34.348	34.348	34.348	34.348		34.348	34.348	Lognormal			
2038.714 Top Area (ac)		81.792	81.792	81.792	81.792		81.792	81.792	Lognormal			
2071.522 Top Area (ac)		140.355	140.355	140.355	140.355		140.355	140.355	Lognormal			
2104.331 Top Area (ac)		207.321	207.321	207.321	207.321		207.321	207.321	Lognormal			
2137.139 Top Area (ac)		284.170	284.170	284.170	284.170		284.170	284.170	Lognormal			
2169.948 Top Area (ac)		375.599	375.599	375.599	375.599		375.599	375.599	Lognormal			
2202.756 Top Area (ac)		484.325	484.325	484.325	484.325		484.325	484.325	Lognormal			
2235.564 Top Area (ac)		637.529	637.529	637.529	637.529		637.529	637.529	Lognormal			

Once the structure profile has been entered or imported, a profile chart is available to help visualise the defined structure:



Prospects & Leads - Improved import capabilities of depth area data including volumetrics depth area pairs produced by Petrosys Pro

The import options for depth area data have been improved to support easy import of depth area pairs produced by Petrosys Pro. The import capabilities also support import from a structured spreadsheet, with user interface options allowing selection of how the data should be imported.

Equivalent columns selector ✕

Please, select your distribution type and relevant parameters

Depth entry equivalence

Distribution type	Lognormal ▼
Depth	Depth ▼
Minimum (P99)	P99 ▼
Low Side (P90)	Please, choose your column ▼
Median (P50)	Please, choose your column ▼
Constant	Please, choose your column ▼
High Side (P10)	Please, choose your column ▼
Maximum (P1)	P1 ▼

Thickness equivalence

Distribution type	Lognormal ▼
Minimum (P99)	Please, choose your column ▼
Low Side (P90)	Please, choose your column ▼
Median (P50)	Please, choose your column ▼
Constant	Please, choose your column ▼
High Side (P10)	Please, choose your column ▼
Maximum (P1)	Please, choose your column ▼

OK

Cancel

Prospects & Leads - Import prospect polygon without dependency on Petrosys Pro

Shapefiles and Petrosys polygon files can now be loaded directly into dbMap/Web without a dependency on Petrosys Pro.

Prospect polygon
Import polygon...
Polygon editing is available by running Lists/Prospects and Leads within Petrosys mapping.

☐ Shape file ☒ Petrosys polygon file
Polygon file: No file chosen
Geographic CRS:

ID	Polygon name
No records to view	

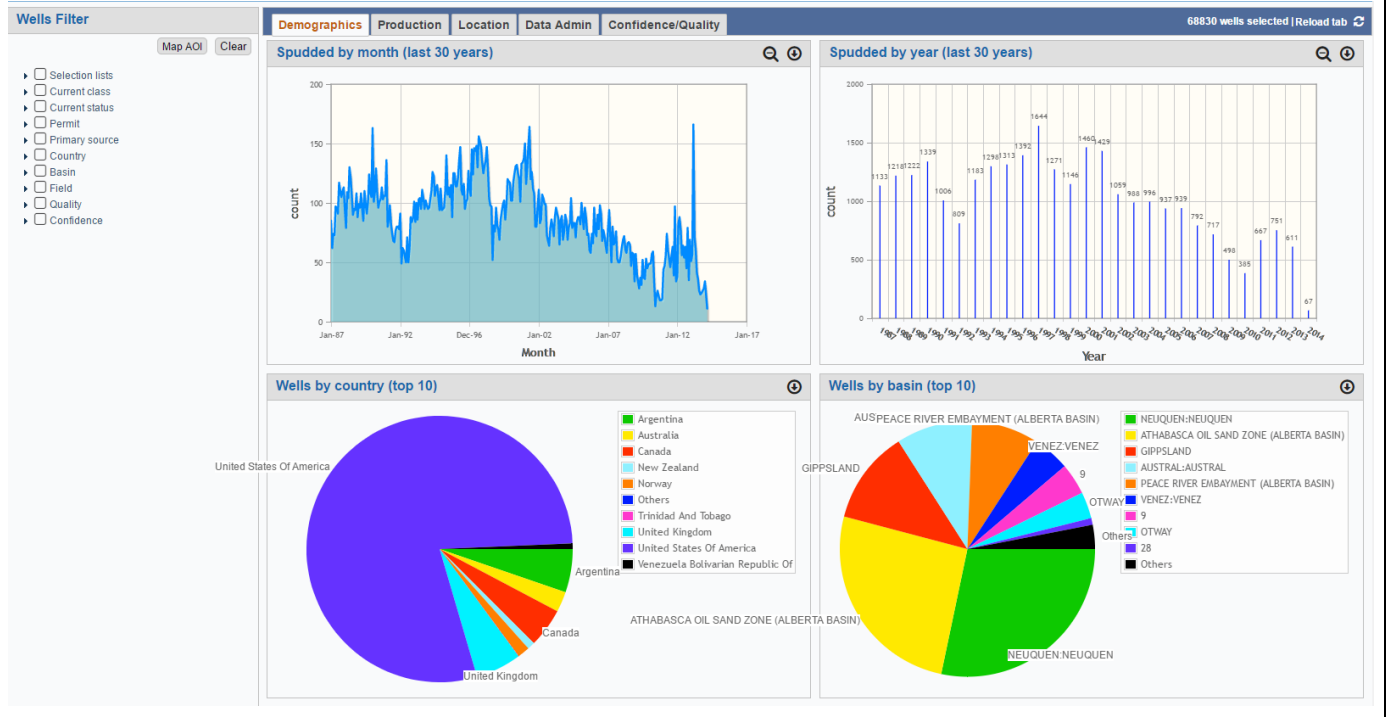
Note: This currently only supports a limited set of coordinate reference systems.

Reporting - Added support for Petrosys SQL functions

Added support for a subset of the Petrosys SQL functions that are currently supported in Petrosys Pro. These functions can be used in reports to process query results and compute additional values e.g. to compute a TVD from a measured depth. The list of available functions can be found under "Help \ dbMap/Web Help \ SQL Reference \ Petrosys Functions".

Dashboards - Added PPDM 3.8 Wells Dashboard

Dashboard functionality has been added to the PPDM 3.8 Wells module, to summaries information about selected wells. The dashboard is configured with a default set of information and can be configured to suit user requirements.



Detailed Release Notes Summary dbMap/Web 2017.1.3

Enhancements

dbMap/Web - Client

[68547](#) Reservoir Summaries - Chronostrat Enhancements (Santos)

0 entries

Detailed Release Notes Summary dbMap/Web 2017.1.3

Bug Fixes

Petrosys Release dbMap/Web 2017.1.3

Detailed Release Notes

[dbMap/Web - Client](#) [Enhancements](#)

Reservoir Summaries - Chronostrat Enhancements (Santos)

68547

The 'dbMap/Web - Wells \ Reservoir Summaries - Chronostrat' screen, loader and report queries have been updated to reflect the new input template structure.

Detailed Release Notes Summary dbMap/Web-2017.1.2

Enhancements

dbMap/Web - Client

[67310](#) Labels changed on chronostrat reservoir summaries (Santos)

[67025](#) Tree filter added to well header (Santos)

dbMap/Web - General

[66857](#) Edit axis feature of production charts improved

Detailed Release Notes Summary dbMap/Web-2017.1.2

Bug Fixes

dbMap/Web - Client

- [67387](#) PLDB - Map AOI option for prospects restored in desktop version (Santos)
- [67547](#) NaN display in well pressure test details when 2 records have the same depth fixed (Santos)
- [67488](#) Well pressure test gradient calculated correctly when units do not match the well units (Santos)
- [67510](#) Well pressure test screen storing pressure in psia (Santos)

dbMap/Web - PLDB

- [67639](#) PLDB - Fixed wrong play interval displayed on RHS for targets
- [67389](#) PLDB - Error when editing drilling opportunity Easting/Northing coordinates fixed
- [67277](#) PLDB - Portfolio type incorrectly set to mandatory in prospect screen
- [68052](#) PLDB - Prospect Targets - Allow filtering by Target UID
- [67232](#) PLDB - Unable to edit values on cost screen

Petrosys Release dbMap/Web-2017.1.2

Detailed Release Notes

[dbMap/Web - Client](#) [Enhancements](#)

Labels changed on chronostrat reservoir summaries (Santos) 67310

The chronostrat summary screen has been changed to display more meaningful labels and complementary information.

Tree filter added to well header (Santos) 67025

In the SANTOS branch, the well header now has a tree filter for record selection, as it's already done for the standard PPDM distribution.

[dbMap/Web - Client](#) [Bug Fixes](#)

PLDB - Map AOI option for prospects restored in desktop version (Santos)

67387

The Map AOI search option for prospects, which had been accidentally removed, has been restored.

NaN display in well pressure test details when 2 records have the same depth fixed (Santos)

67547

A bug, causing the gradients to be displayed as NaN (not a number) in the well pressure test details screen when 2 consecutive records have the same depth value, has been fixed.

Well pressure test gradient calculated correctly when units do not match the well units (Santos)

67488

Fixed a bug on "dbMap/Web - Wells \ Well Pressure Tests \ Detailed Test Data" causing incorrect pressure gradients to be displayed when viewing wells with metric units.

Well pressure test screen storing pressure in psia (Santos) 67510

Fixed a bug causing the "dbMap/Web - Wells \ Well pressure tests" screen to store pressure values as kPaa for metric wells. The screen has been change to always store pressures in psia.

Note: This was fixed in the Santos production environment prior to this release version.

[dbMap/Web - General](#) [Enhancements](#)

Edit axis feature of production charts improved 66857

The "edit axis" feature of dbMap/Web's production charts has been re-factored and improved. It has also been added to the Santos specific customisation.

PLDB - Fixed wrong play interval displayed on RHS for targets 67639

A bug causing the play interval of a target to be displayed incorrectly - although correctly stored in the database - has been fixed.

PLDB - Error when editing drilling opportunity Easting/Northing coordinates fixed 67389

A bug preventing the user from entering eastings and northings for drilling opportunities has been fixed.

PLDB - Portfolio type incorrectly set to mandatory in prospect screen 67277

A bug causing the portfolio type fields to be (wrongly) flagged as mandatory in the prospect screen has been fixed.

PLDB - Prospect Targets - Allow filtering by Target UID 68052

Fixed a bug preventing user from filtering on "Target UID" on the "dbMap/Web - Prospect & Leads \ Prospects \ Prospect Targets" screen.

PLDB - Unable to edit values on cost screen 67232

A bug making all cost related screens in PLDB read-only has been fixed. Cost figures can now be added and changed.

Petrosys Release Web-2017.1.1

Enhancements

dbMap/Web - Client

[67777](#) WSC - Auto select UTM zone based on well longitude - Origin

[67840](#) WSC - Display estimated pressure to one decimal place - Origin

[67841](#) WSC Report - Added note to indicate that no mudlogging programme was specified - Origin

Petrosys Release Web-2017.1.1

Bug Fixes

dbMap/Web - Client

- [67838](#) WSC - Allow user to specify formation thickness - Origin
- [67842](#) WSC - Estimated Pressures - Depth displayed as midpoint of formation - Origin
- [67839](#) WSC - Formation pressures - Code being shown instead of formation name - Origin

Petrosys Release Web-2017.1.1

Detailed Release Notes

[dbMap/Web - Client](#)

[Enhancements](#)

WSC - Auto select UTM zone based on well longitude - Origin 67777

"dbMap/Web - Well Spec Card / Well Details" screen will automatically select the correct UTM zone to convert latitude/longitude to easting/northing.

WSC - Display estimated pressure to one decimal place - Origin 67840

'dbMap/Web - Well Spec Card / Estimated Pressures' changed to display pressures to one decimal place.

WSC Report - Added note to indicate that no mudlogging programme was specified - Origin 67841

Well Spec Card report was updated to indicated if no mudlogging programme was specified.

[dbMap/Web - Client](#)

[Bug Fixes](#)

WSC - Allow user to specify formation thickness - Origin 67838

"dbMap/Web - Well Spec Card / Prognosed Tops" screen has been changed to allow formation thickness to be entered by the user.

WSC - Estimated Pressures - Depth displayed as midpoint of formation - Origin 67842

'dbMap/Web - Well Spec Card / Estimated Pressures' depths were changed to display midpoint of formations.

WSC - Formation pressures - Code being shown instead of formation name - Origin 67839

WSC's Formation Pressures screen (and resultant Well Spec Card pdf) now shows the full name of the Formation of the referenced Well Test, instead of the abbreviated formation code.

Petrosys Release dbMap/Web 2017.1

Enhancements

dbMap/Web - Client

[62530](#) Modified addRowtoEndOfList JavaScript method to accept a list of rows (Repsol)

[64988](#) Well Specification Cards (Origin)

[66732](#) Well / Test - Changed units from psi to psia (Origin)

dbMap/Web - General

[50700](#) Data Does Not Exist option added to advanced search

[62492](#) Added Cross reference and database polygon search options to other screens

[64123](#) Added ability to import a shapefile and link it to a basin

[64965](#) INT seismic viewer integrated to dbMap/Web

[64962](#) INT well log curves viewer upgraded to version 2.2

[61443](#) PPDM38 - Added Permits / Basins / Fields Screens and functionality to standard deliverable

[62453](#) Production charts - Added ability to edit axis ranges

Petrosys Release dbMap/Web 2017.1

Bug Fixes

dbMap - Client

- [65420](#) Filter on tool type column in RFT runs screen fixed (Santos)
- [65718](#) Well Treatment Frac - Fixed total proppant pumped actual which was not being displayed (Santos)

dbMap/Web - Client

- [66722](#) Changed Petrosys function PS_SQL_EXP to ignore expressions with division by zero
- [66584](#) Lab Analysis - Fixed incorrect units on panel (Santos)
- [66125](#) Added ability to specify plot name or well name filter in URL (Origin)
- [66767](#) Added summary report to Chrono Summary loader (Santos)
- [65717](#) Frac CSG Loader - Mini-frac flag is loaded correctly (Santos)

dbMap/Web - PLDB

- [65344](#) PLDB - Drilling opportunity names are now unique within a prospect.

Petrosys Release dbMap/Web 2017.1

Detailed Release Notes

dbMap - Client

Bug Fixes

Filter on tool type column in RFT runs screen fixed (Santos) 65420

A bug preventing a user from filtering records by test tool type in the RFT runs screen has been fixed.

Well Treatment Frac - Fixed total proppant pumped actual which was not being displayed (Santos) 65718

Fixed an issue on the "Well / Well Treatment (Frac) / Treatment Stage / Frac" screen with the "Total proppant pumped" field on the "Actual" tab not being populated when loading data using the CSG loader.

dbMap/Web - Client

Enhancements

Modified addRowtoEndOfList JavaScript method to accept a list of rows (Repsol) 62530

The JavaScript function that handles adding rows to a grid list has been modified to accept a list of ids as well as a single id. This is useful for clients who write their own custom user interface logic to add multiple rows to a grid list. This also provides a performance improvement as it is faster to add multiple rows at once rather than adding rows one at a time.

Well Specification Cards (Origin) 64988

Well specification card system implemented to allow management of the planning and approval process for new wells.

Well / Test - Changed units from psi to psia (Origin) 66732

Changed the "Well / Tests" screen to show pressure units as 'psia' instead of the previous 'psi'.

dbMap/Web - Client

Bug Fixes

Changed Petrosys function PS_SQL_EXP to ignore expressions with division by zero 66722

When using the Petrosys PS_SQL_EXP function in a report and dividing one column value by another, if the column used to divide had a zero value, the whole report failed and an error message containing an Oracle error was displayed. This has now been fixed. A divide by zero now results in a blank value and the report runs successfully..

Lab Analysis - Fixed incorrect units on panel (Santos) 66584

There was a mismatch of units between the "Wells / Lab Analysis" list and the panel. The list was showing the top and base measured depth in the correct units, however the panel was incorrectly showing the depth in the units of the well header. The panel has been changed to use the same units as the list.

Added ability to specify plot name or well name filter in URL (Origin)

66125

Previously a search term could be added to the url to go directly to a pre-searched list. However this was restricted to the common search fields. An additional 'searchin' parameter has been added to allow different fields to search on. This enables additional configured search options to be searched for e.g. well name and plot name.

Added summary report to Chrono Summary loader (Santos)

66767

Added overall summary report for the job run for Chrono Summary Loader.

Frac CSG Loader - Mini-frac flag is loaded correctly (Santos)

65717

Fixed a bug causing a DFIT record to be created, even when the 'Mini frac flag' was set to 'NO' on the Frac CSG Loader.

[dbMap/Web - General Enhancements](#)

Data Does Not Exist option added to advanced search

50700

Advanced search has been enhanced by the addition of a "data does not exist" general option; previously, only "data exists" and column related criteria were available. Now it's possible to easily find records for which certain subordinate records do not exist.

Added Cross reference and database polygon search options to other screens

62492

The database polygon search functionality has been added to wells, seismic lines, seismic surveys, fields, facilities, titles and leases. The cross reference search functionality has been added to wells, basins, seismic lines and seismic surveys. This enables greater searching capabilities between data types.

Added ability to import a shapefile and link it to a basin

64123

The ability to import a shapefile and associate it to a basin, thus defining a basin polygon, has been added to dbMap/Web.

INT seismic viewer integrated to dbMap/Web

64965

INT seismic file viewer integration has been added to dbMap/Web, allowing for graphical view of SEG Y files.

INT well log curves viewer upgraded to version 2.2

64962

The INT well log viewer integrated to dbMap/Web has been upgraded to version 2.2.

PPDM38 - Added Permits / Basins / Fields Screens and functionality to standard deliverable

61443

Added Permit, Basin and Field data types to the standard PPDM 3.8 version of dbMap/Web. These data types are now available as a top level menu item and can be associated with a well. Screens are also provided to list the spatial relationships between these data types.

Production charts - Added ability to edit axis ranges

62453

Production charts have been improved to allow the x and y axes ranges to be edited via an 'Edit Axes' button. This makes it easier to customise what data is displayed on the chart and to ignore outlying data to improve resolution of the displayed data.

PLDB - Drilling opportunity names are now unique within a prospect.

65344

To provide a better user experience and data integrity, drilling opportunity names are now restricted to be unique within the same prospect in the PLDB module.