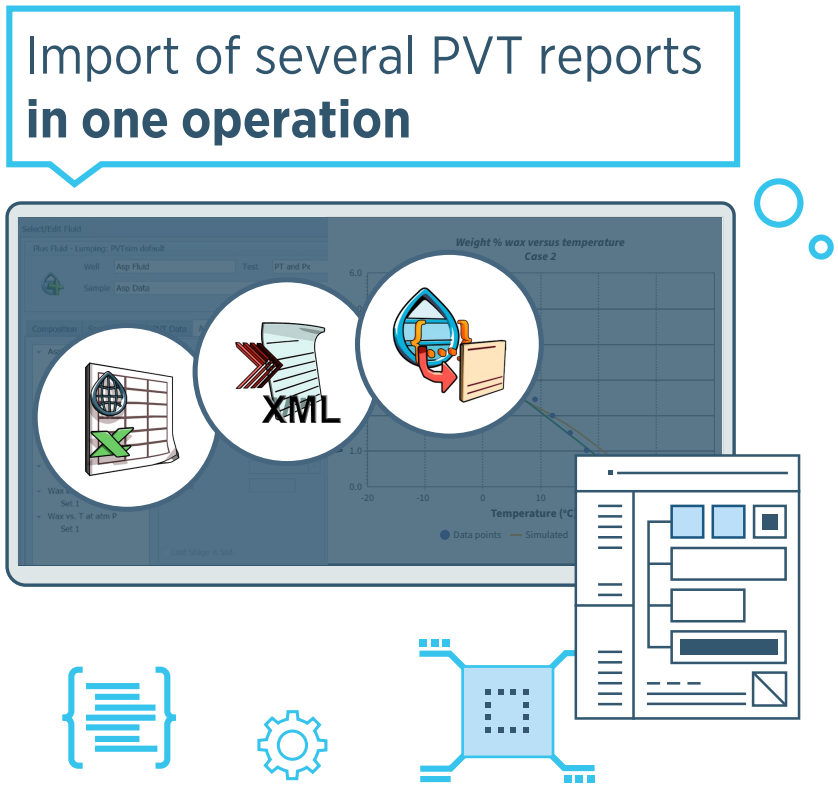
pvtsim nova

PVTsim Nova 7.0

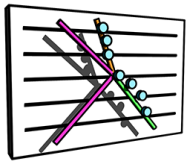
RELEASE HIGHLIGHTS



calsep

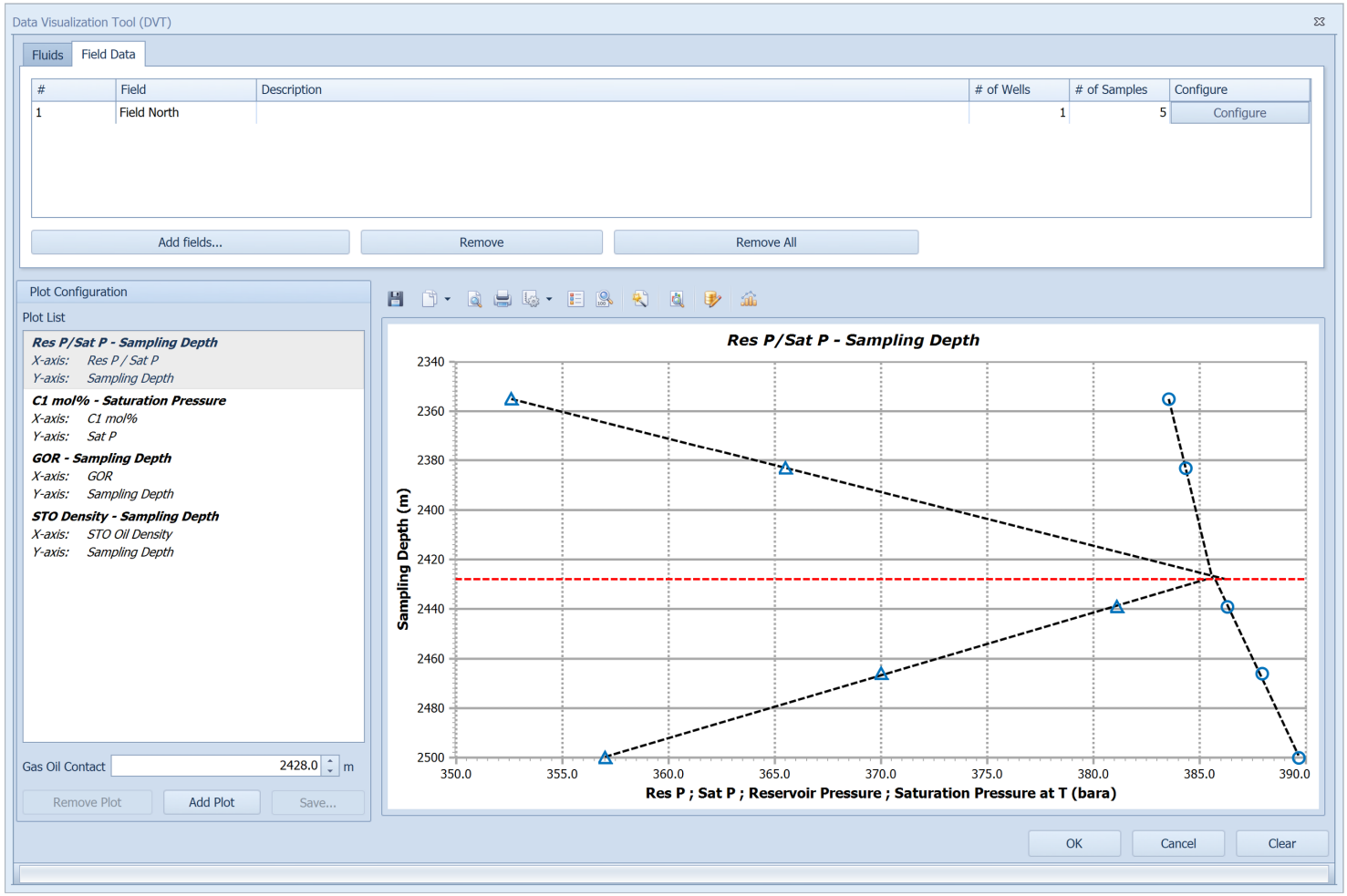
DATA VISUALIZATION TOOL (DVT)

Rapidly visualize compositions and key fluid property trends vs. depth. Fluid data can be integrated with field data, such as reservoir temperature, reservoir pressure, or saturation pressure without requiring a compositional sample. This data can be plotted vs. depth or used in cross plots to visualize and estimate fluid property trends in the reservoir.



Data Visualization Tool (DVT)

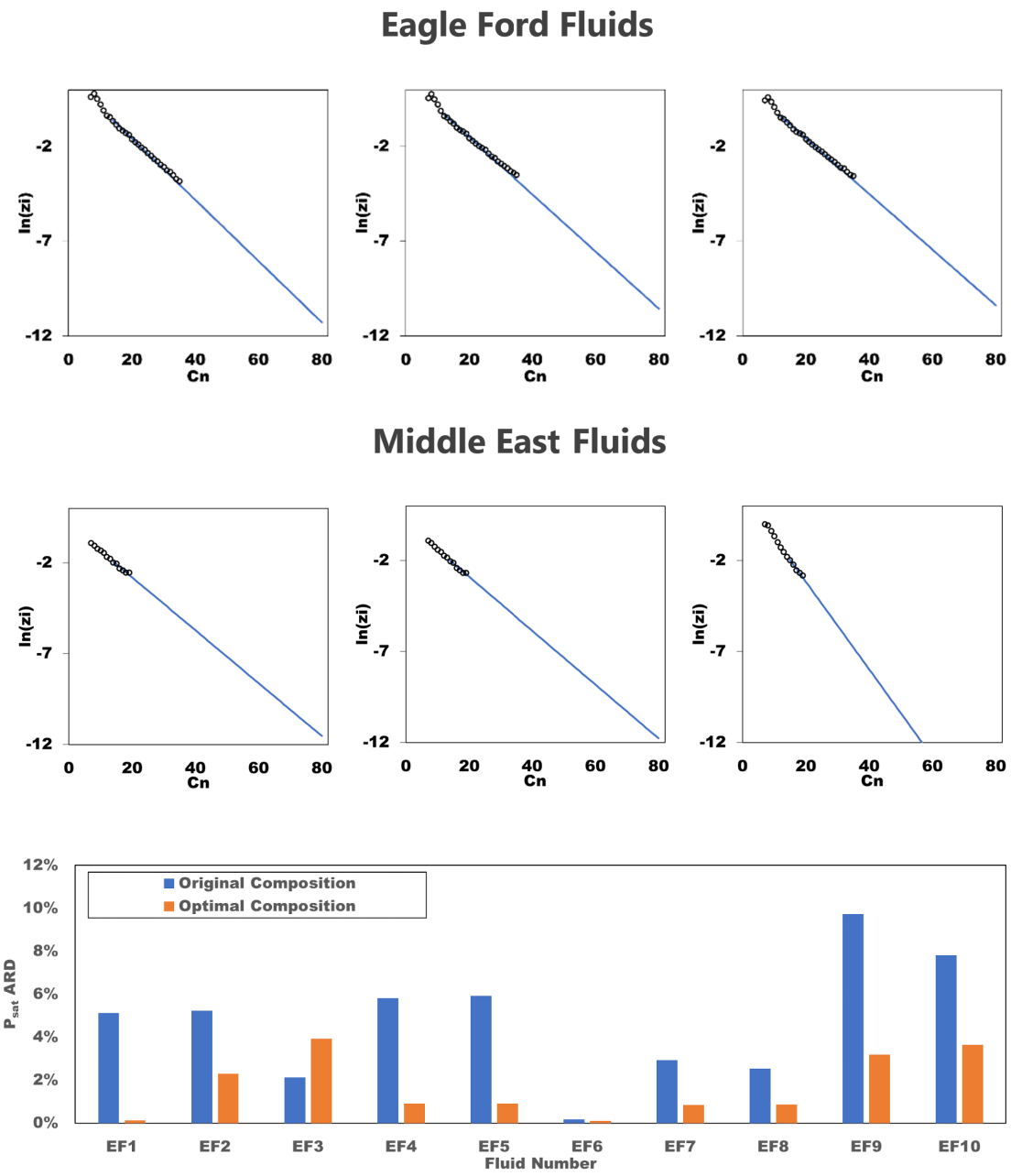
Field Data

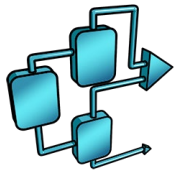


Fluid Preparation for EoS modeling

To address the uncertainty in reservoir fluid composition measurements, the Auto QC procedure in PVTsim Nova 7 has been updated to improve predictions of the phase behavior in gas condensates.

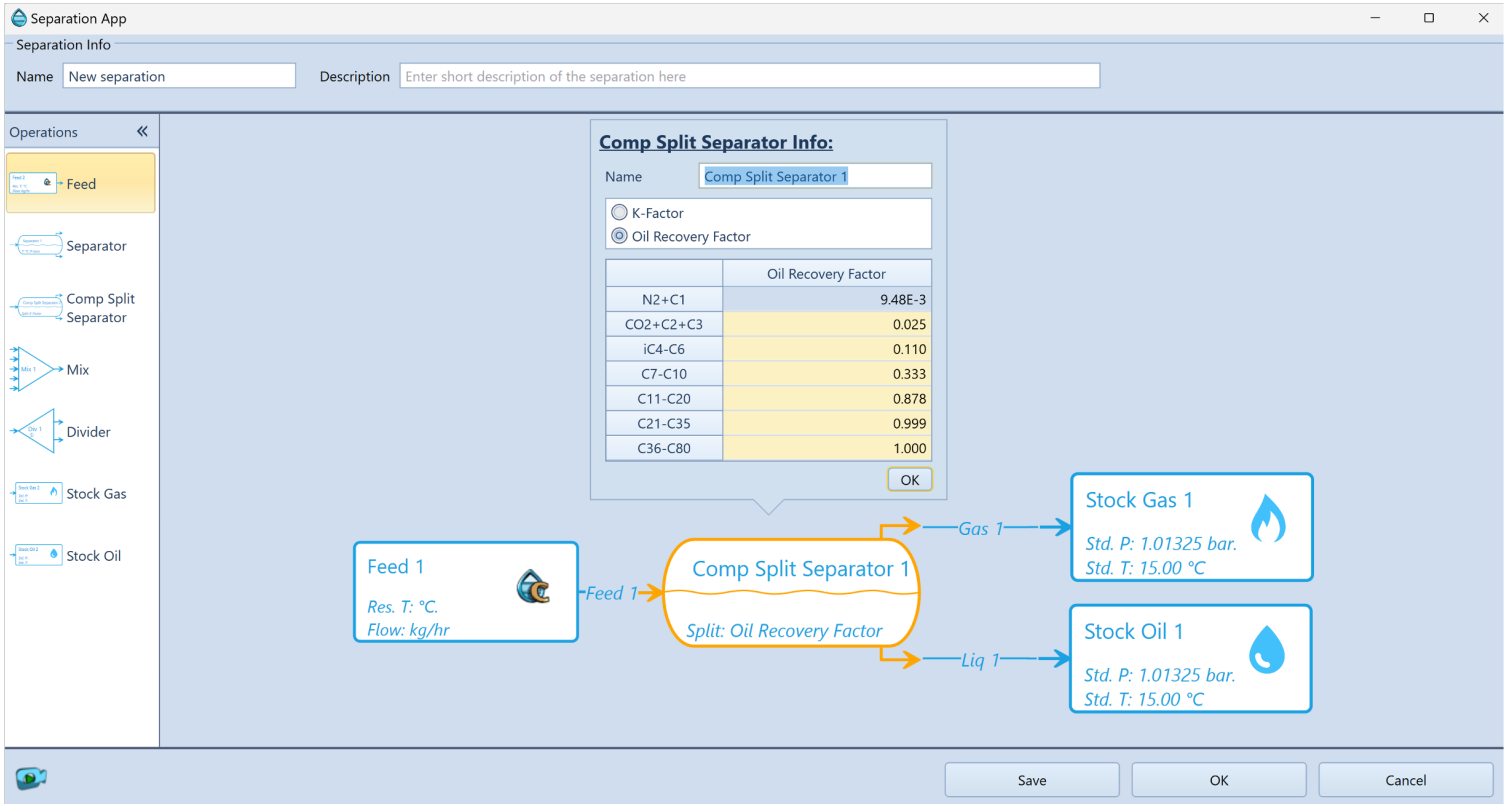
The new procedure uses a lump-back method while keeping the measured weight% composition constant (SPE-216783-MS).





Separation

In the Separation App, a separator can be specified by pressure and temperature. In PVTsim Nova 7, it is now possible to also specify a separator by component K-factors or Oil Recovery Factors.

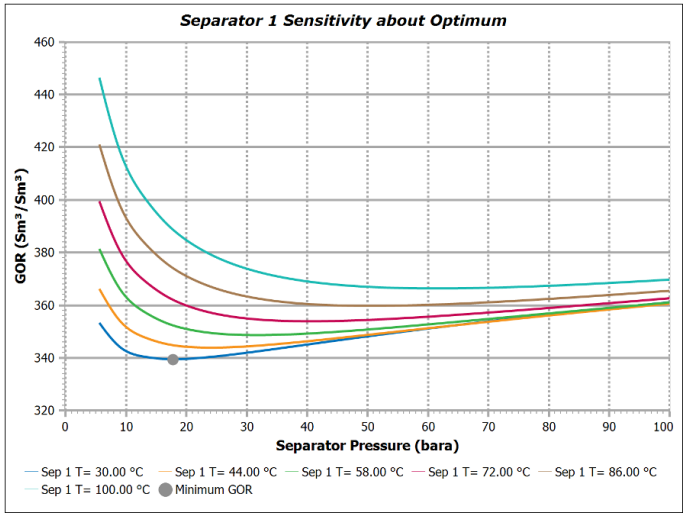


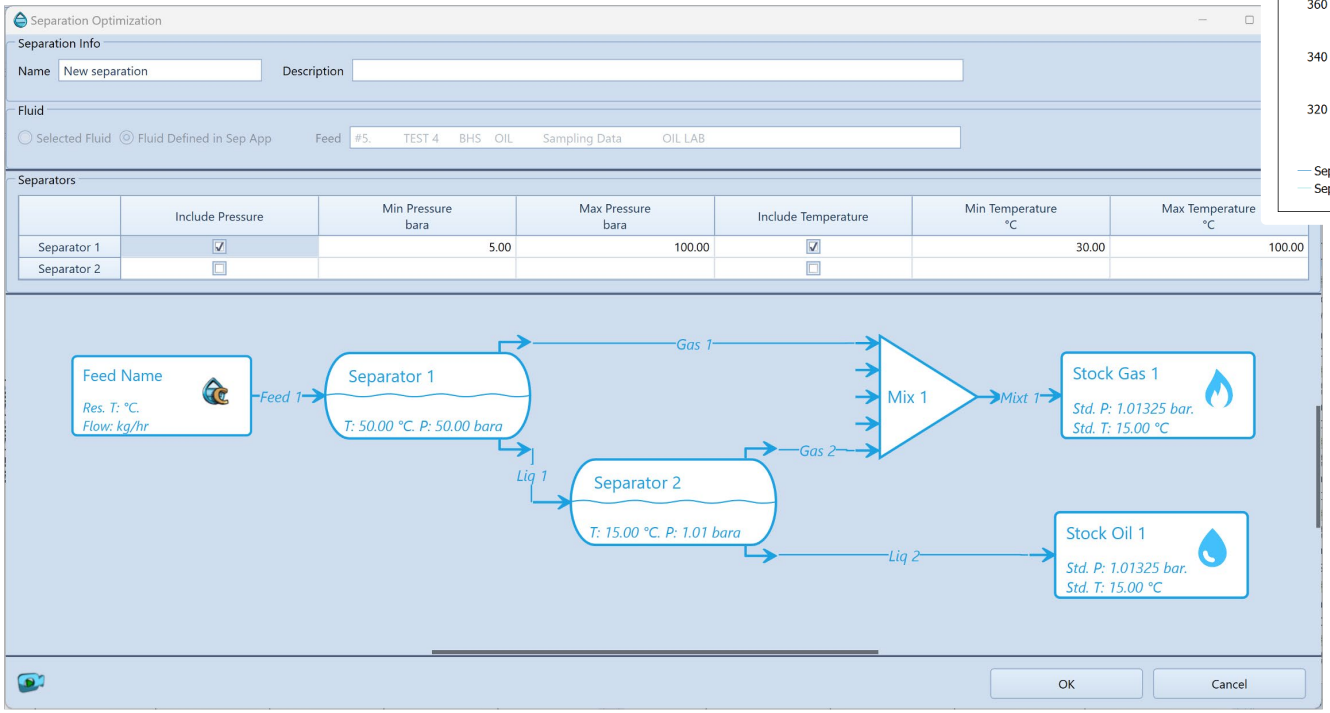
Comp Split Separator input Options

- K-Factor
- Oil Recovery Factor

The new Separator Optimization option finds the temperature and pressure of the separators that provide the lowest GOR (highest liquid yield) of a separation process. This option can be used for separation processes simulated in the Separation App.

Optimize Conditions





New PVTsim LedaFlow API.

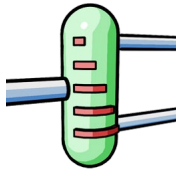
Use PVTsim as the thermodynamic engine
in LedaFlow Composition Tracking simulations.

New Interfaces

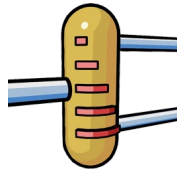
Reveal (IPM)

Harmony

Updated export of EoS parameters

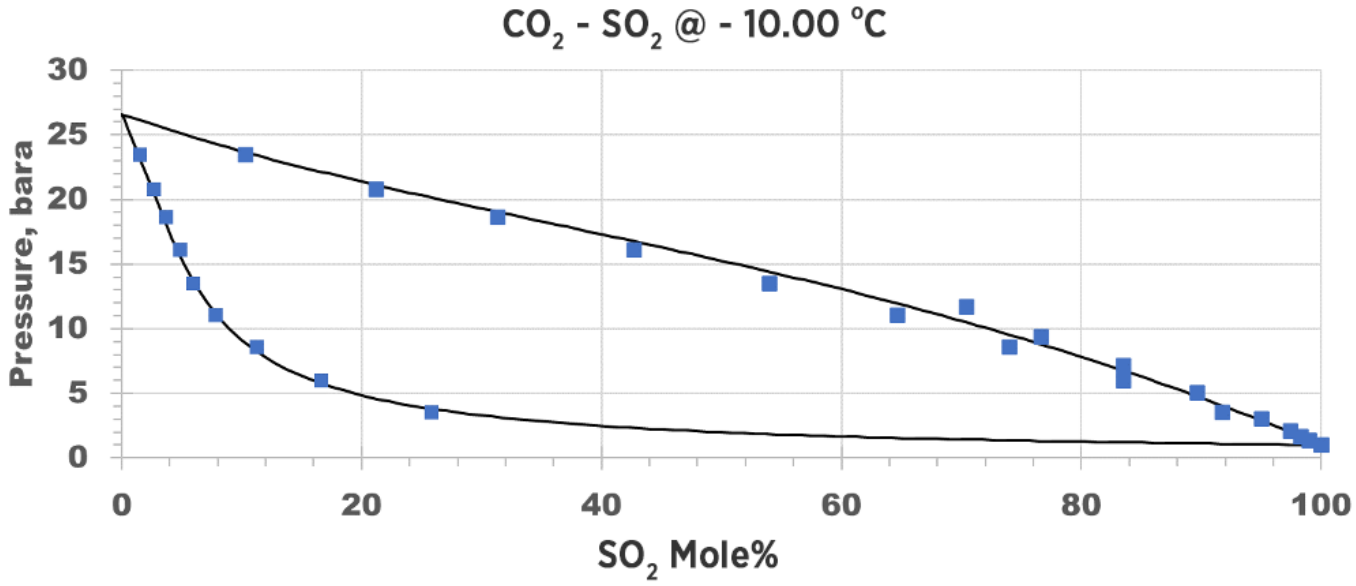


UniSim:
T-dep kij & LBC coefficients



Hysys:
LBC coefficients & CSP correction factors

pvtsim nova CCS



New components

- NO_x
- SO_x
- NH_3

New functions

- Saturate fluid with salt water
- Saturate salt water with impure CO_2

New Interfaces

UniSim Hysys

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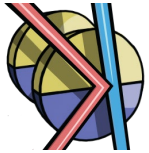
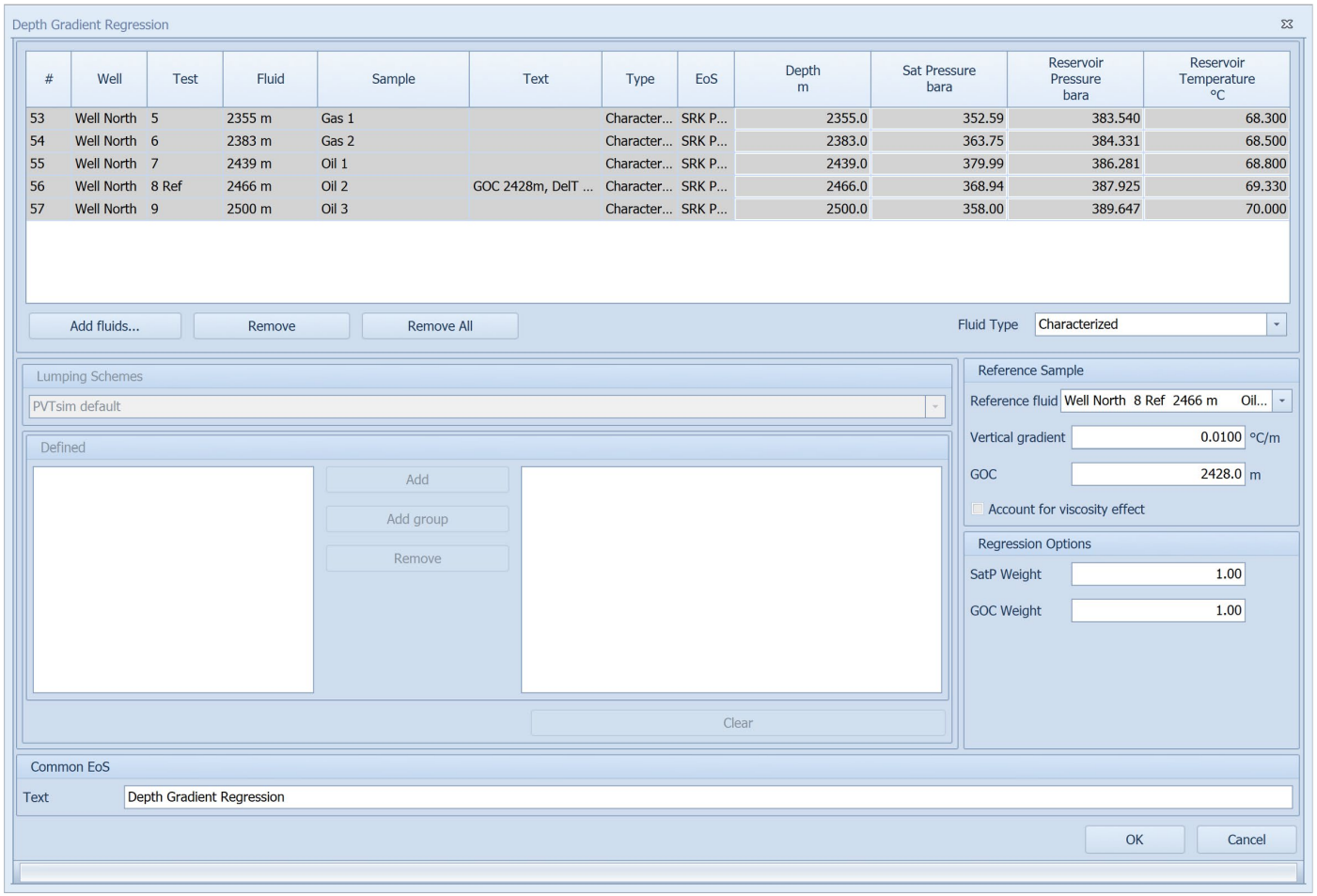
Depth Gradient Regression



Depth Gradient Compare with Data

PVTsim Nova 7 allows for regression to saturation pressure and Gas-Oil Contact (GOC) data in addition to compositions at different depths.

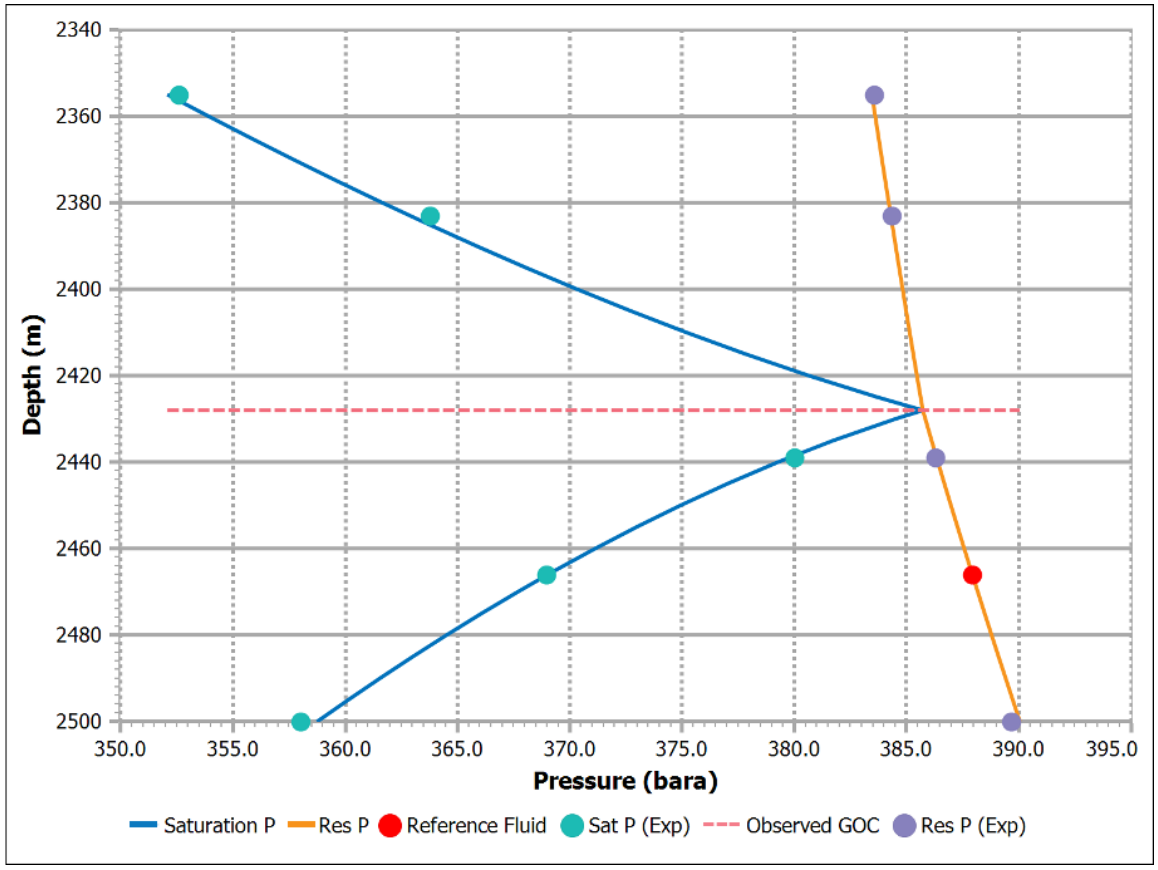


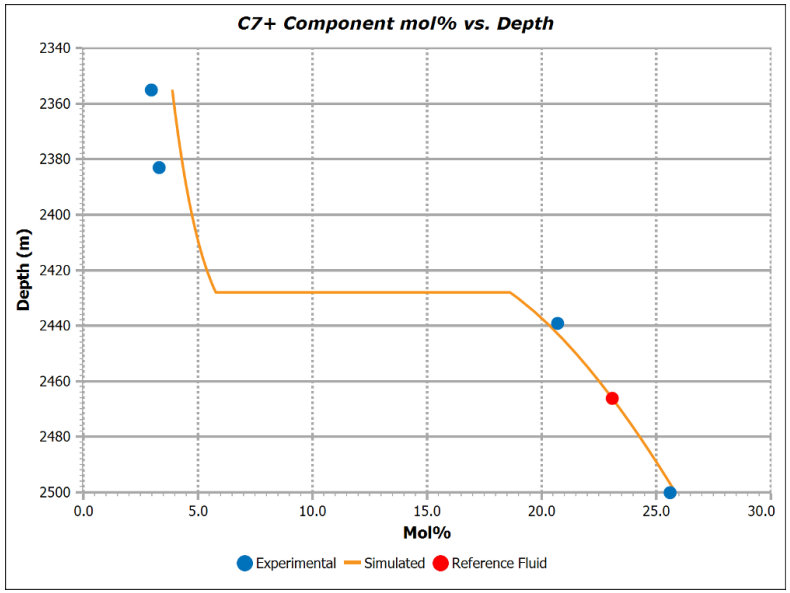
Plus fluids or tuned Common EoS model

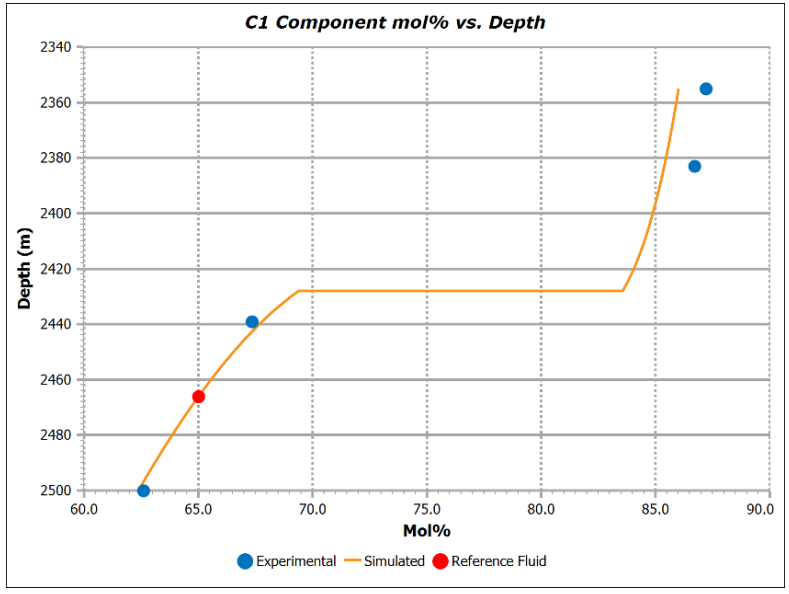
Reference fluid Temperature gradient (GOC)

Regression weight

Improved match of GOC, saturation pressure, and composition variation with depth.



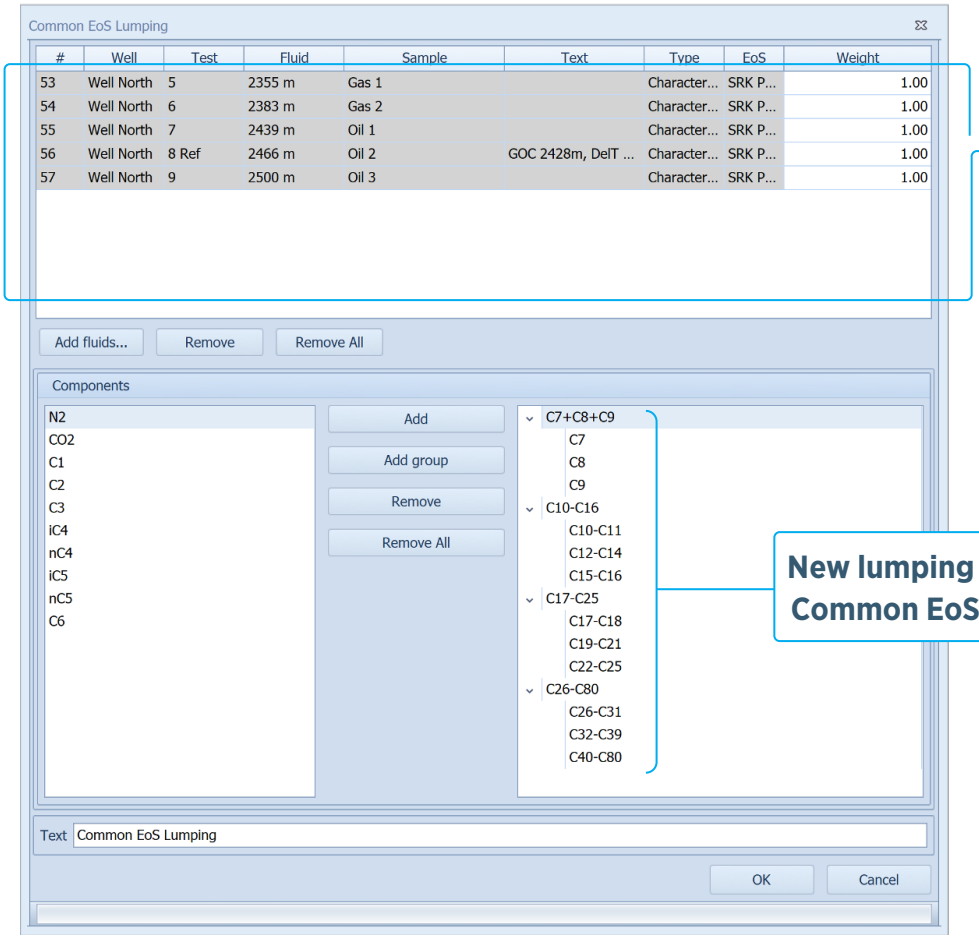




Additional updates

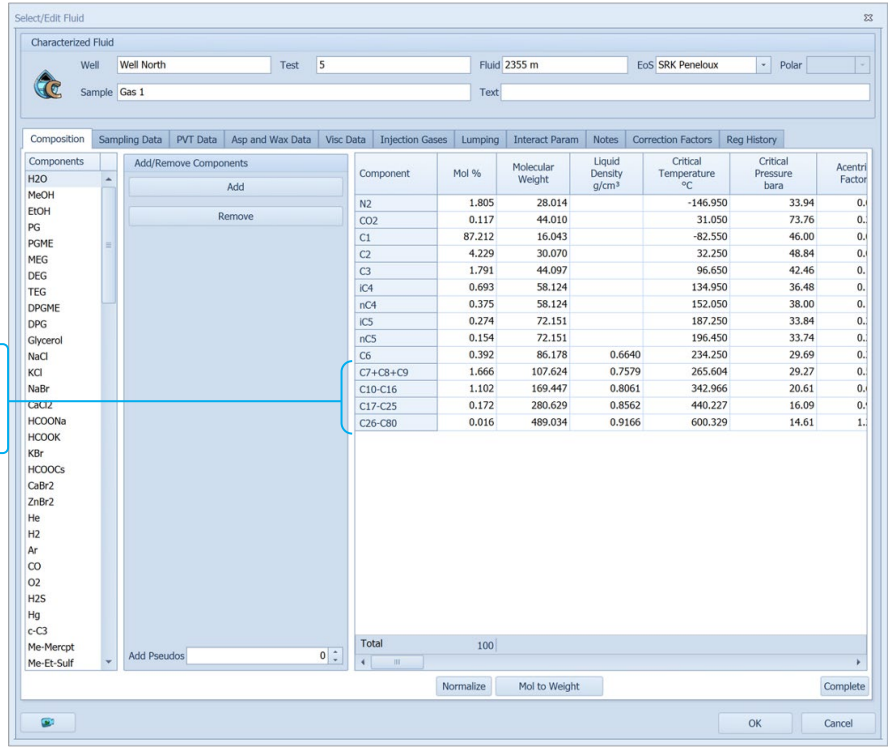
- Single menu for editing Common EoS model parameters
- Bulk edit of fluid name and Sampling Data in the Fluid Explorer
- Lumping of existing common EoS models

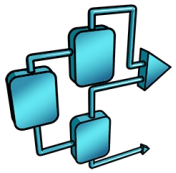
Common EoS Lumping



Existing Common EoS group

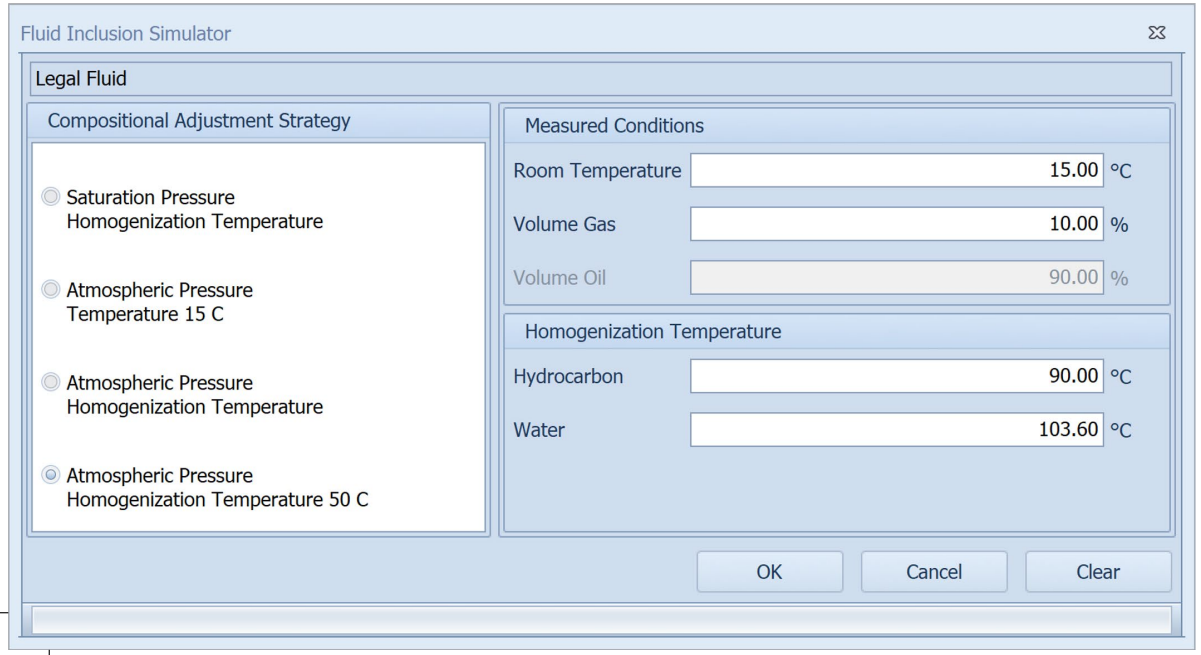
New lumping for the Common EoS group

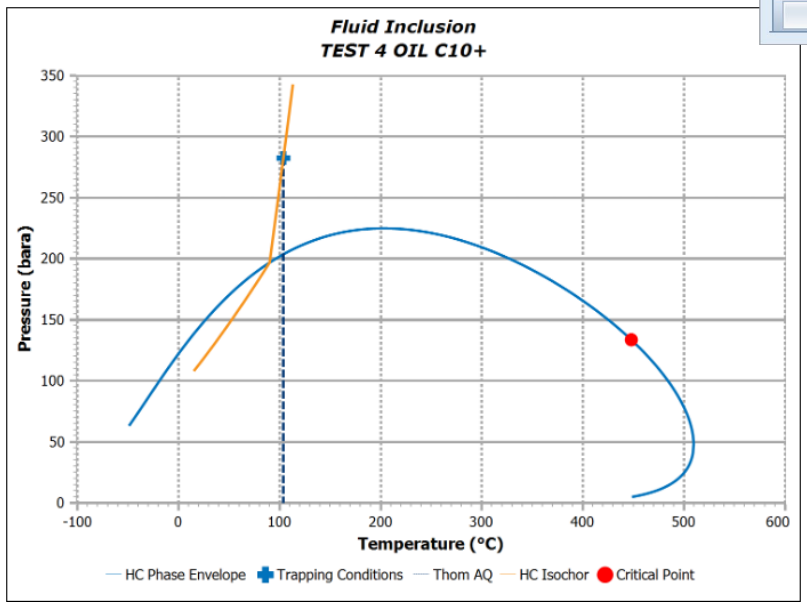




Fluid Inclusion Simulator

Developed to interpret optically derived micro-thermometric and volumetric data from hydrocarbon bearing fluid inclusions.





Optimum Composition					
Homogenization Conditions		**Room Conditions**		**Trapping Conditions**	
Temperature	90.00 °C	Temperature	15.00 °C	Temperature	103.60 °C
Pressure	196.89 bara	Pressure	108.05 bara	Pressure	282.40 bara
Molar Volume	174.48 cm³/mol	Molar Volume	174.48 cm³/mol		
Average Density	0.7338 g/cm³	Average Density	0.7338 g/cm³		
Surface Tension	16.012 mN/m	Volume% Gas	10.00 %		
Volume% Gas	0.00 %	Volume% Oil	90.00 %		
Volume% Oil	100.00 %	STP GOR	94.8 Sm³/Sm³		

A composition is calculated, which satisfies the values of HC homogenization temperature and volume percent gas at room temperature.

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