

RESERVOIR SIMULATION SUITE



Building For The Future

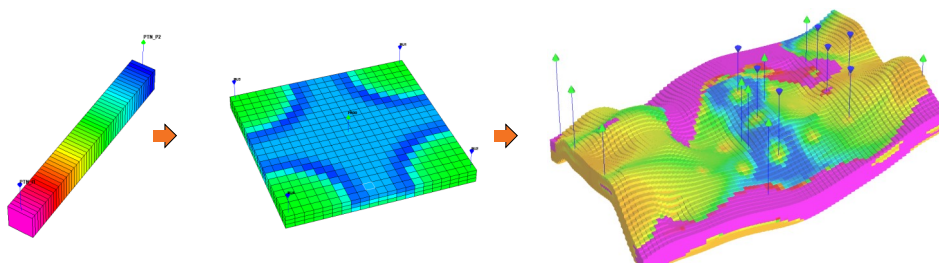
KEY FEATURES

- Fast Chemical EOR model building
- Build new models from scratch with a simple user interface
- Easy creation of sector models with accurate flux boundaries
- Add CEOR processes (polymer, surfactant, ASP, tracers, geochemistry)
- Well pattern designer
- Advanced injection slug and production schedule designer
- Engineering decisions can be saved as templates for future use
- Export as full Meteor or UTCHEM CEOR models

BENEFITS

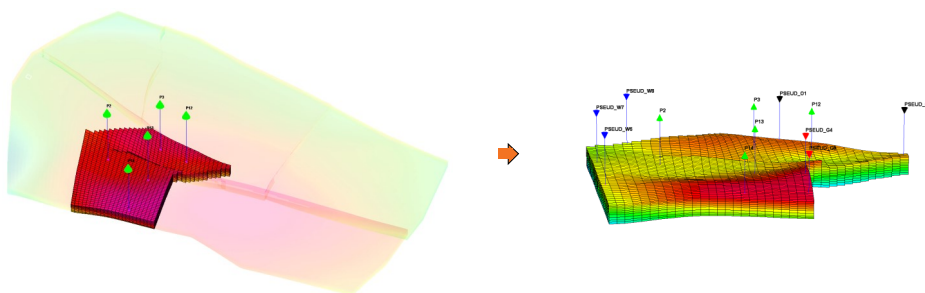
- Quick and easy CEOR simulation model building
- Fast and highly configurable sector model generation
- Automatic calculation of boundary fluxes
- Easy definition of chemical properties for Meteor/UTCHEM CEOR modelling
- Interactive injection/production schedule creation
- Simple injection slug design, including CEOR chemical concentrations
- Massively increases productivity

S3quickbuild is an easy-to-use tool for the rapid creation of chemical EOR simulation models for Meteor/UTCHEM. Models can be built from scratch using the **S3quickbuild** simple wizard interface or generated as sector models (or full conversions) from full-field models in ECLIPSE. The resulting simulation models can be exported to Meteor/UTCHEM or ECLIPSE. CEOR applications include coreflood modelling, simulation of CEOR pilot studies and full-field CEOR simulation. Sector models can be used for quick studies of problem areas of a field (in ECLIPSE) or to assess the impact of CEOR processes in pilot areas of the real field (in Meteor/UTCHEM), or even for full-field CEOR conversion.



Build new models for coreflood or pilot studies, up to the full field

S3quickbuild's builder has a sophisticated but intuitive interface that allows reservoir simulation models to be generated via a simple wizard: grid geometry and properties and well patterns are defined, and reservoir/fluid properties specified. Wells can be added and edited, individually or in patterns. All data defining the generated models can be saved to templates for later reuse. **S3quickbuild** is supplied with a set of basic simulation model and data templates that cover many CEOR modelling workflows (1D corefloods, spot patterns, etc.). It also includes full model templates enabling one-click simulation model creation.



Create sector models in a few clicks

Sector model generation in **S3quickbuild** is equally straightforward: sectors may be selected by several different methods, including polygon selection. Accurate flux boundary conditions, calculated from the output of the full-field simulation, can be applied using highly configurable pseudo wells placed at the edge of the sector region. The sector may also be refined.



Quick model building

- Coreflood and spot patterns supported
- Reservoir property definition
- Fluid properties, PVT and initial reservoir conditions
- Wells can be added and edited

Sector model generation

- Accurate flux boundary conditions from full-field simulation output
- Pseudo-well implementation of flux boundaries is highly user configurable
- Sector refinement

Schedule profile designer

- Simulation schedules defined by time or injected pore volume
- Slug profile designer allows complex injection/production profiles to be created, saved and reused
- Schedule profiles can be created for groups of wells in a single step
- Fast schedule creation from existing slug designs and schedule templates

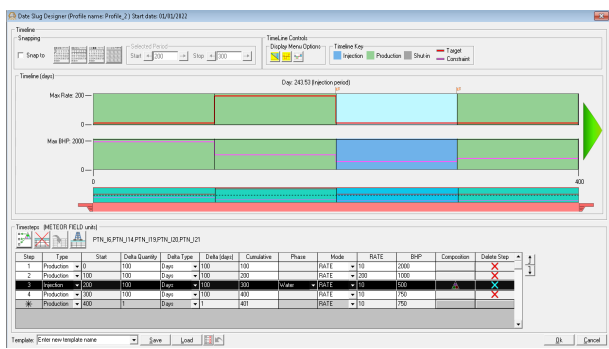
Chemical EOR modelling

- Meteor/UTCHEM CEOR components and properties can be specified
- Polymer, surfactant/polymer and ASP schemes
- Reactive and non-reactive water tracers for Single Well Tracer Tests
- Chemical properties and complete CEOR schemes can be saved to templates

Project files

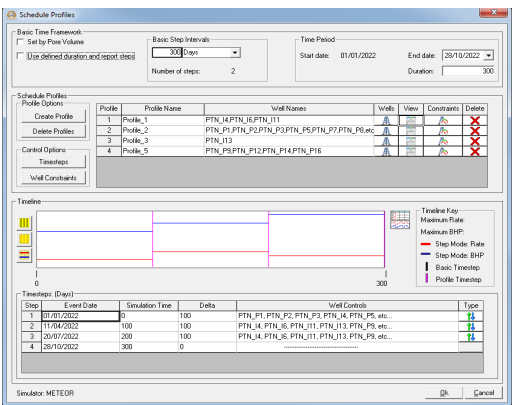
- Builder and sector models along with any schedule designs and EOR setting can be saved as a project file for later use

The schedule designer allows the user to set up a basic *schedule profile*. A *schedule profile* consists of a timeframe sub-divided into a series of injection/production *slug* periods. The number and duration of *slugs* can be altered using the input table or by



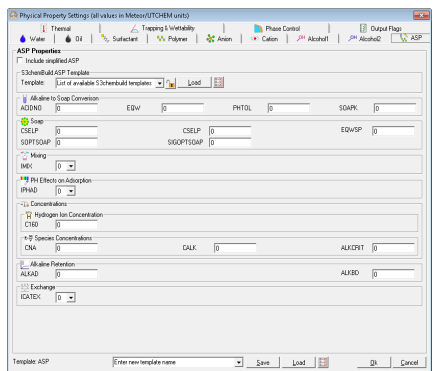
Schedule Designer— 4 slugs set by time

The profile designer shows the collection of *schedule profiles* which can be set by time or by pore volume. The profile designer has options to create new profile designs as well as updating or deleting existing. Also included are options to set individual profile well constraints, UTCHEM timestep intervals and the inclusion of a basic timestep framework.

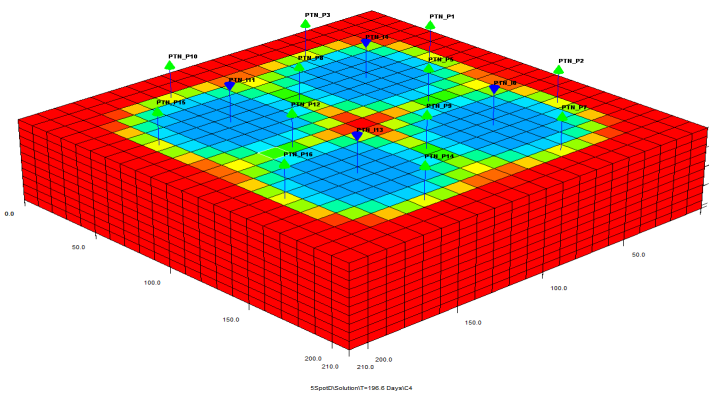


Profile Designer— 4 schedule profiles set by time

The chemical EOR designer comprises of a series of pages split into 8 main components {water, oil, surfactant, polymer, anion, cation, alcohol1 and alcohol2/gas}. There are additional pages for specifying ASP, thermal, foam and wettability & trapping parameters. The chemical designer incorporates a Tracer designer for setting reactive and non-reactive water tracers and gas tracers.



ASP Designer



CEOR model with tiled 5-spot pattern



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