Key Papers

- Victoria Spooner, Robert Stalker, Rob Wright, Gordon Graham (Scaled Solutions Ltd.); ‘Improving Scale Inhibitor Squeeze Design for Naturally Fractured Reservoirs’; SPE- 169755
- Chetan Chavan, Eshwar Rao, Mihir Jha, Shobhit Tiwari (Cairn India Limited), Robert Stalker, Gordon Graham (Scaled Solutions Ltd.); ‘Chemical Qualification and Field Application of a Nondamaging Scale Squeeze Treatment in the Mangala Field’; SPE- 168120
- Eyvind Sorhaug (Talisman), Myles Jordan, David Marlow (Nalco), Robert Stalker, Gordon Graham (Scaled Solutions Ltd.); ‘Achieving Extending Squeeze Life in Challenging Wells– A Non Conventional Approach’; SPE- 131093
- Gordon Graham, Sam Kidd, Robert Fitzpatrick, Rob Wright (Scaled Solutions Ltd.); ‘Appropriate Simulation of Field Treatments Using Core Flood Data’; SPE- 131131
- Amarpreet Kaur, Robert Stalker, Gordon Graham (Scaled Solutions Ltd.); ‘Simulating Squeeze Treatments in Wells Completed with Inflow Control Devices’; SPE- 190740
- Amarpreet Kaur, Dario Frigo, Robert Stalker, Gordon Graham (Scaled Solutions Ltd.); ‘Understanding Fluid Transport Mechanisms of Fracture Shale Formations by Modelling Squeeze Treatments’; SPE; 184537

Truly Independent Laboratory

At Scaled Solutions, our mission is to be recognised worldwide through our independent specialised laboratories as the leading supplier of bespoke equipment, training, consultancy and provider of solutions to challenges in Production Chemistry, Corrosion and Formation Damage.

We aim to exceed our customers’ expectations and improve our service to our customers on a continual basis through our key values: team work & communication, openness & transparency, continual improvement and trust.

Quality, Integrity, Safety and Excellence

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British Assessment Bureau — UKAS MANAGEMENT SYSTEMS 8289 — ISO 9001 QUALITY MANAGEMENT

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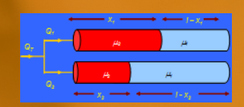


Place *iT*™

Scaled Solutions’ in-house near-wellbore simulation package, Place *iT*™, allows chemical placements and flowback return to be simulated either in the near wellbore area or in a single/dual linear core flood



How our services can help you



Industry Standard Squeeze Treatment Simulator

The Place *iT* v6 near wellbore simulator is an industry standard, tried and tested, chemical squeeze treatment simulator. This software allows the placement of chemical treatments to be simulated either in the near wellbore area or in a single/dual linear core flood by taking into account the surrounding rock properties and those of the injected fluid.

By allowing the end user to take into account factors which may hamper chemical placement along the near wellbore region, the Place *iT* software allows analysis of chemical placement in the presence of reservoir heterogeneity, pressure gradient and crossflow effects. Comparison of ‘best injection procedure’ by bullhead treatment may be simulated for field applications.

Applications

- Scale Inhibitor Squeeze Treatment
- Corrosion Inhibitor Squeeze Treatments
- Core Flood Return Modelling
- Fractured Well Squeeze Treatments
- Stage Diversion Treatments
- Skin Factor Modelling
- Wellbore Temperature Modelling

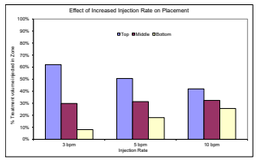


Scaled Solutions

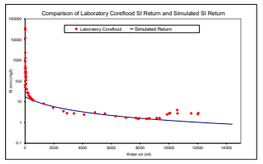
Core Field Modelling

Place *iT* v6 core flood model allows the simulation of core flood returns and optimisation of derived isotherms.

Place *iT* v6 features both a standard single core flood model and a dual placement core flood model.

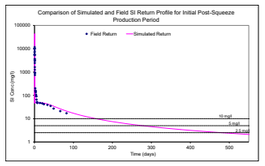


Treatment design can be optimised in the placement model to provide the optimal distribution of chemical in and around the near wellbore in heterogeneous wells.



Place *iT* v6 is a powerful utility to design and optimise a squeeze programme.

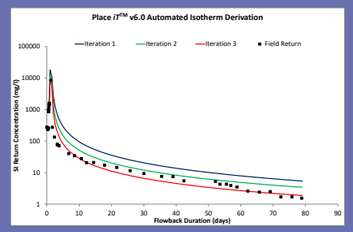
From initial core flood testing to treatment optimisation, Place *iT* v6 yields accurate matches to observed field return concentration giving confidence is predicted treatment lifetimes.



Automated Isotherm Derivation

The Place *iT* v6 automated isotherm derivation for core floods and field returns can fit isotherms and therefore save time.

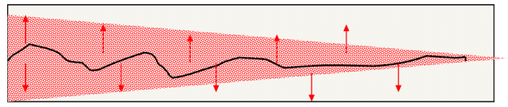
- Field and core flood returns
- Fits Freundlich isotherms
- Iteratively a good fit

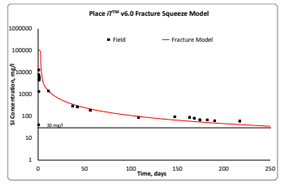


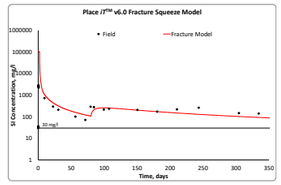
Dedicated Fracture Squeeze Model

For tight fractured formations such as shales, traditional matrix flow modelling techniques may fail to yield accurate treatment lifetime predictions. The dedicated Fracture model explicitly simulates diffusion and adsorption of scale inhibitor within reservoir fractures. The model has been successfully used for fractured shale wells where traditional matrix flow modelling falls down.[1]

- Diffusion Controlled Transport
- Adsorption Coupled with Diffusion
- Fractured Shale Wells

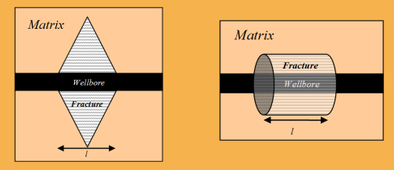






Fractured Well Modelling in Place *iT*

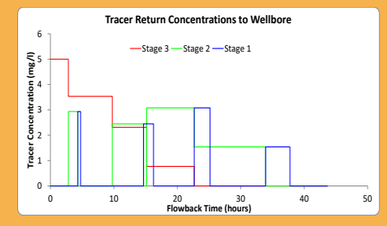
Placement effects due to proppant packed fractures can be simulated in Place *iT* v6 using the dual perm model. The dual adsorption capabilities can also be utilised to simulate scale inhibitor impregnated proppants.

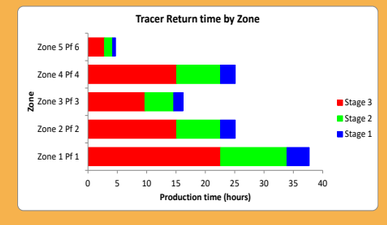


Tracer Return Modelling

In addition to multi stage treatment modelling, Place *iT* v6.0 features a tracer return model for inert water soluble tracers.

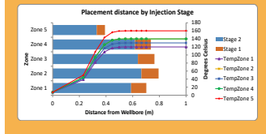
- Multistage Treatments
- Tracer Return Concentration by Stage

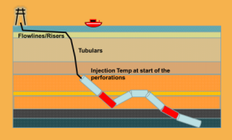




Temperature Modelling

The Place *iT* v6 temperature model has the capability to model the changing temperature of injection fluids during their passage from the surface to the wellbore. Cooling of the near wellbore by injection fluids is also modelled.





Advanced Adsorption Modelling

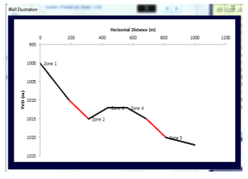
In such cases where the adsorption is temperature sensitive, a cold inner isotherm can simulated in the cooler near wellbore region with a hot isotherm active in the hot, deeper formation. The different adsorption properties of skins can be simulated in the dual adsorption model. Practical applications include:

- Adsorption In Skins & Proppant Packs
- ASP Breakthrough
- Temperature Sensitive Adsorption

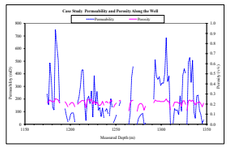


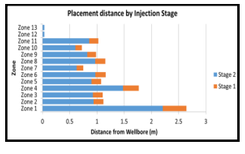
Advanced Multi-Zone Placement Model

The advanced algorithms in the Place *iT* v6 near wellbore simulator allow complex wells to be simulated giving an accurate prediction of placement and treatment lifetime. The placement model can simulate up to 20 distinct reservoir zones giving a high resolution model of the well. In addition to this, the model can simulate advanced factors that influence the placement distribution of injection fluids.



- Pressure/permeability Contrasts
- Placement in Complex Wells
- Skin and Stimulation Effects
- Geometry and Friction Effects
- Non Newtonian Fluids/Stage Diversion
- Crossflow Model
- Fluid Mobility





Training and Support

Training workshops are available to all licensed users of the software. Training workshops are given across 1-2 days at your location, or at SSL in the UK or Abu Dhabi. The content of the workshop can be tailored to the individual's requirements. The user friendliness of the Place *iT* v6.0 simulator makes it easy to use for both experienced modellers and those new to squeeze treatments.

- Comprehensive 10 Module Course
- Practical workshop with many field cases
- Field Data– Well Model
- Training workshop tailored to your needs
- Delivered by the developers at your location or ours
- Certificate at the end of the course

