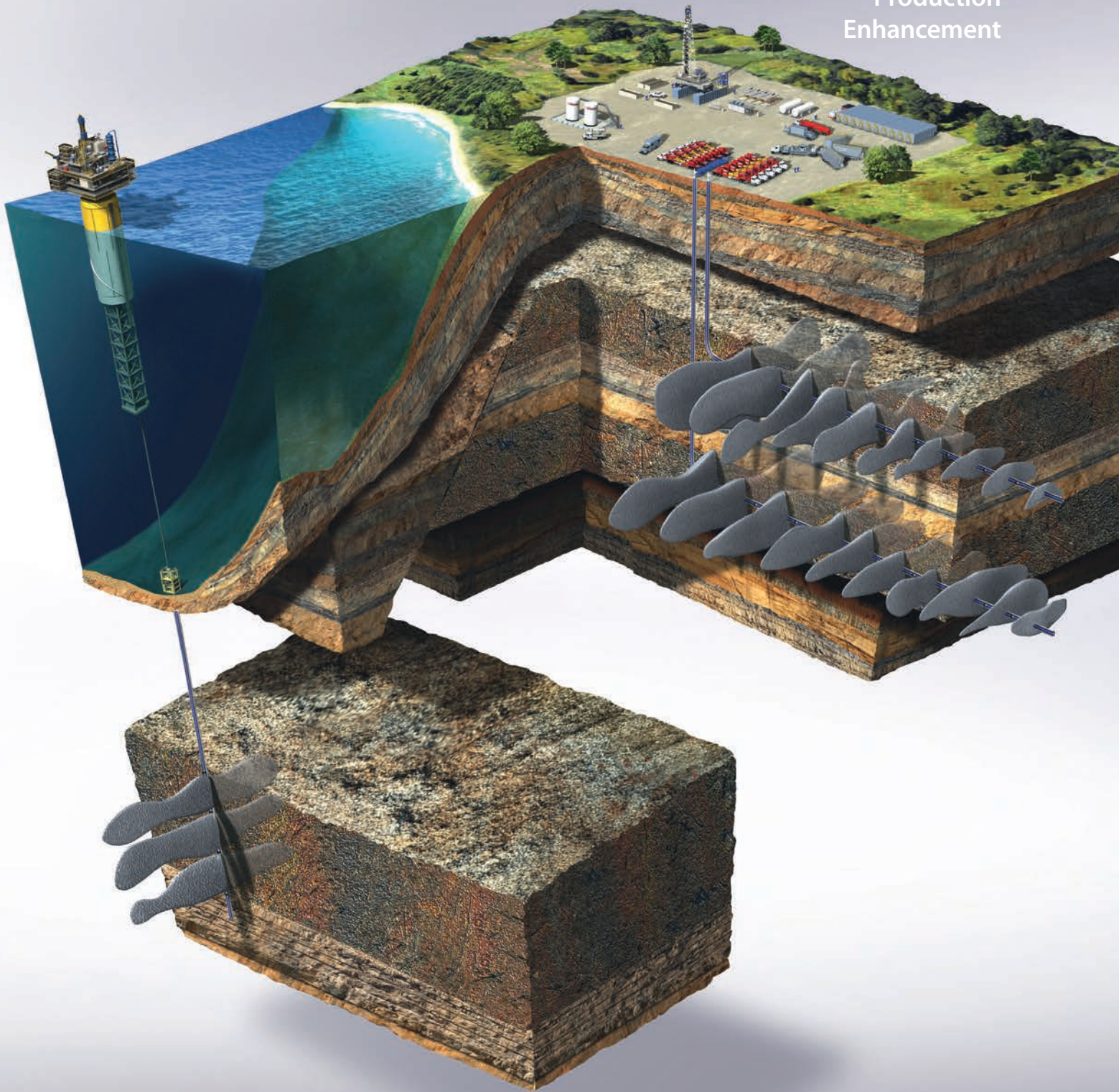


Production
Enhancement



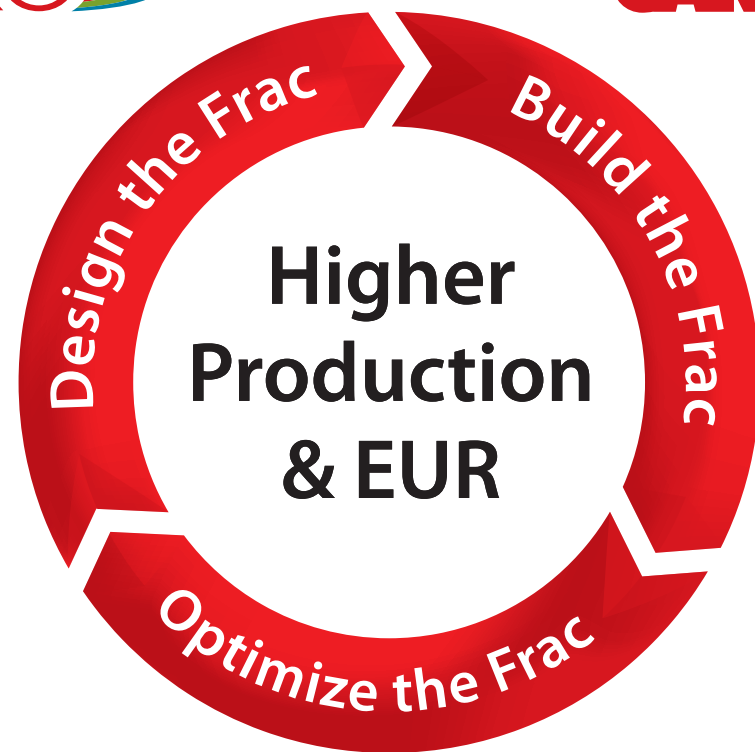
Design, build and optimize the frac

Fracture software, fracture technologies and fracture consulting services
focused on delivering optimum production for your economic objectives

CARBO
Production. Enhanced.

Higher production. Increased recovery.

As an industry-leading production enhancement company, CARBO integrates unique technologies and intellectual capital to deliver higher production and increased EUR from every fracture, helping clients to *design, build and optimize the frac*.



The unique combination of reservoir characteristics of each stimulated conventional and unconventional play and the operator's production and economic objectives all demand a unique approach.

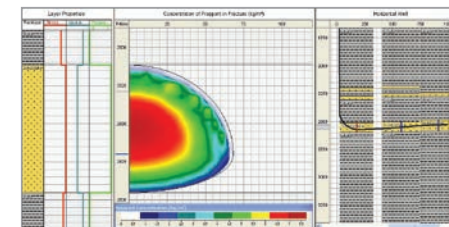
Whatever reservoir and production challenges you face, our unique portfolio of products and services helps you to *design, build and optimize the frac*®. The result is higher production and increased recovery, while lowering total finding and development costs per BOE.

We help you to get the most out of your asset and increase your return on investment through our unique approach to production enhancement.

Our unique approach to production enhancement

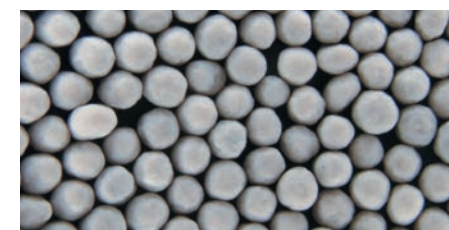
Fracture software

Design optimal fractures and safeguard execution using our industry-leading FRACPRO® fracture design, analysis and monitoring software portfolio that helps you to maximize recovery and increase ROI.



Fracture technologies

We help you build fractures using high-quality, high-performance proppant for increased contact, higher conductivity and greater hydrocarbon flow. Our proprietary proppant-delivered production enhancement technologies and services assure production, enhance flow and evaluate fractures to inform development.



By integrating CARBO® fracture technologies and services, our Production Services team delivers design, supervision, monitoring and evaluation support: developing production enhancement solutions that meet your production and economic objectives.

Fracture consulting services

Optimize your fracture designs, execution and field development.

Our STRATAGEN® fracture consulting services provide fracture design and evaluation, well performance evaluation, and onsite fracture supervision and advisory services to identify the optimal balance of contact and conductivity for the reservoir, as well as safeguard execution at the wellsite.



Empowering enhanced fracture design and execution

The versatile FRACPRO® software portfolio provides unparalleled fracture design, analysis and monitoring capabilities that enable the engineering and execution of fracture designs to optimize production, recovery and economic performance.

Enhance well performance

The FRACPRO design, analysis and monitoring software portfolio improves performance from your wells by using built-in knowledge and real-time data to continuously evaluate and develop successful stimulation designs for any formation type, permeability or location.

Powerful modeling to evaluate and optimize design

The modeling capabilities of the FRACPRO software portfolio help you determine the optimum fracture geometry, proppant conductivity and the required perforation area. Our software helps you understand proppant placement, conductivity improvements and fracture dimensions. You can also measure the effects of proppant damage due to crushing, embedment, stress cycling and non-Darcy and multiphase flow.

For horizontal wells, the software can simulate single and multiple treatments, allowing you to create multiple pump schedules and reservoirs in a single file. The software also enables simulations of foam fractures and acid fractures.

Fully integrated modules to enhance ROI

FRACPRO software contains integrated modules for fracture design and analysis, economic optimization and reservoir performance. The software can model almost limitless combinations of well configuration, proppant placement, conductivity improvements and fracture dimensions. It enables you to capture data in real-time, then export it to generate output reports, giving you full compatibility with IMEX®, VIP® and ECLIPSE® software.

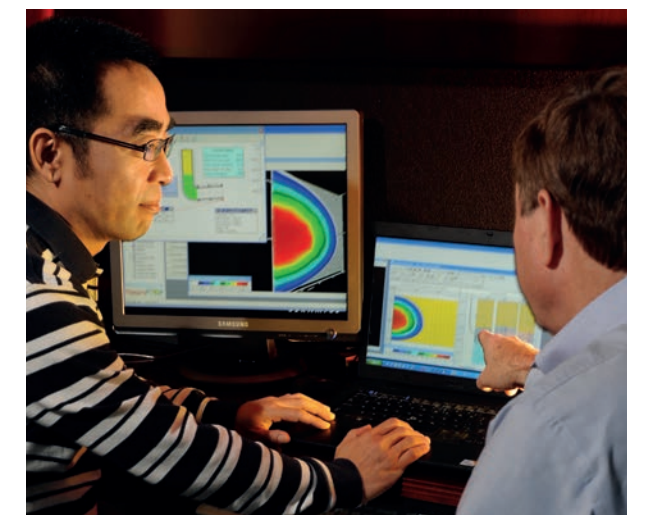
Real-time monitoring to safeguard fracture execution

The FRACPRO XCHANGE software module is optimized for fracture van visual displays to enable the monitoring and refinement of fracture execution. Together with the FRACPRO REMOTE fracture monitoring app, which allows you to connect remote expertise in real-time to the job, you can respond to any stimulation challenges and safeguard fracture execution.



The complete FRACPRO software portfolio

- FRACPRO fracture design and analysis software
- FRACPRO REMOTE real-time fracture operations monitoring app
- FRACPRO XCHANGE onsite fracture monitoring software
- NETWORKX® fracture network simulator model
- STIMPRO™ matrix acidizing analysis software



Build, enhance and maintain more space to flow

Our high-quality proppant helps clients build fractures with enhanced conductivity and greater hydrocarbon flow. Proprietary proppant-delivered production enhancement technologies assure production, further enhance flow and accurately evaluate your well to inform field development.

Enhance the performance of every fractured well

Our wide-ranging portfolio of high-quality, high-performance ceramic proppant enables operators to design and build fractures to address the unique characteristics of the formation in applications ranging from slickwater fracturing to the highest-stress downhole environments.

Across the range, our high-quality, high-performance proppant is manufactured to have a low internal pellet porosity so that it is strong and durable enough to withstand pressure cycling and avoid the creation of fines. That means the proppant will maintain *more space to flow*® for the life of the well.

Low-density proppant for increased contact and conductivity

Our portfolio includes high-quality, high-performance low-density ceramic (LDC) proppant engineered to deliver both high conductivity and high contact for exceptional production and economic performance in typical reservoir stress conditions (5,000 ft to 12,000 ft). Compared to market-leading intermediate-density ceramic (IDC) proppant, our high-performance LDC requires 20% less proppant to create the same reservoir contact and delivers higher conductivity, which reduces treatment cost and provides a lower F&D cost per BOE.

CARBO high-performance LDC also enables operators to achieve higher production compared to their offset sand wells, with no increase in AFE.

Protect the space with proppant-delivered production assurance

Multiple production challenges can dramatically impair production systems and negatively impact flow rates. The GUARD family of proppant-delivered production assurance technologies delivers highly efficient and long-term protection against these issues, without compromising fracture conductivity.

These technologies deliver production chemicals exactly where they are needed and avoid chemical wash-out—reducing chemical consumption and treatment costs.

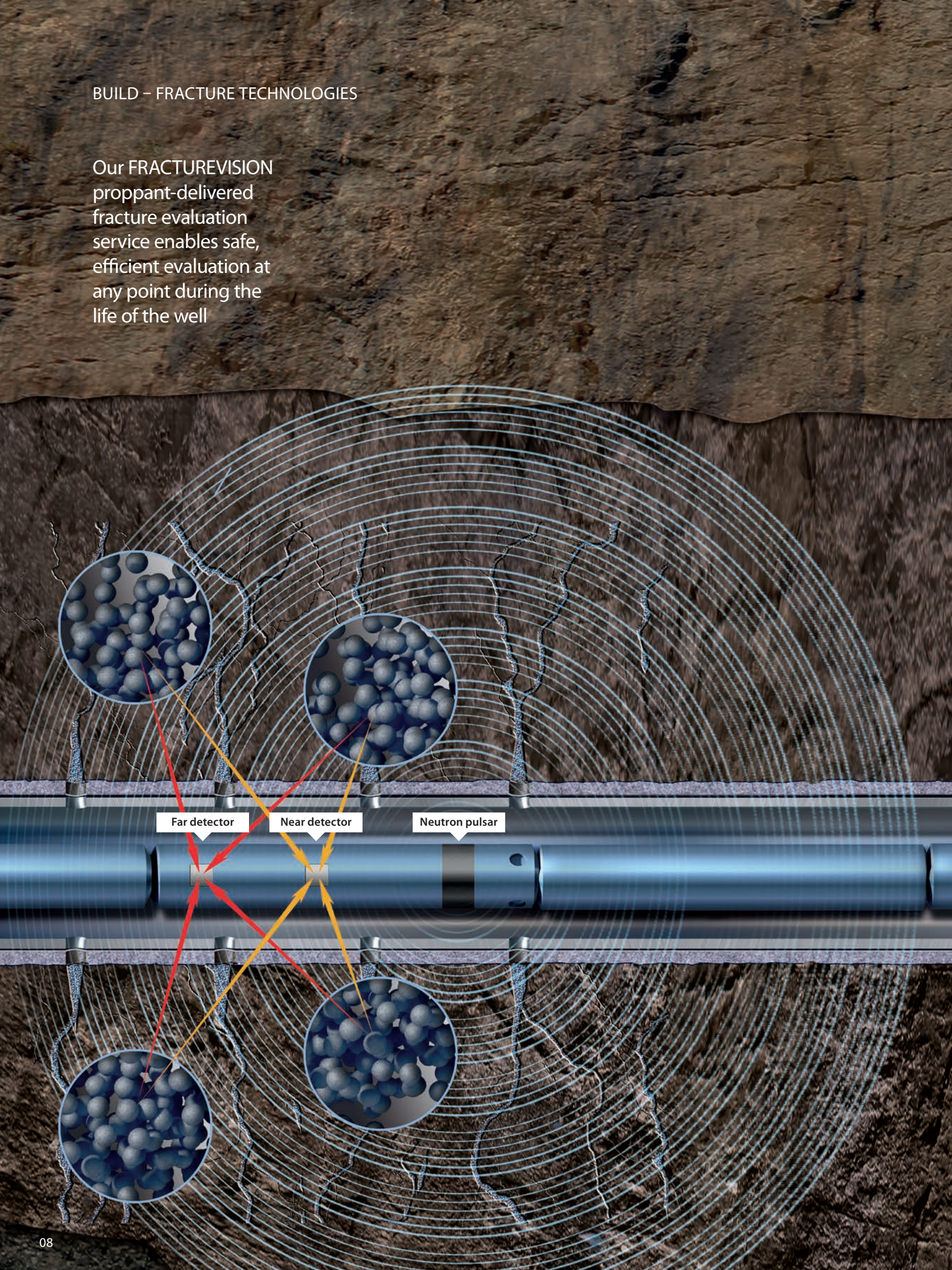
SCALEGUARD® proppant-delivered scale-inhibiting technology, a part of this offering, is a ceramic proppant infused with scale-inhibiting chemicals, and features a unique controlled release technology. It is placed throughout the entire fracture as part of the standard fracturing process to maintain optimum production.



SCALEGUARD

A superior alternative to other methods of inhibiting scale

Our FRACTUREVISION proppant-delivered fracture evaluation service enables safe, efficient evaluation at any point during the life of the well



Enhance the space with proppant-delivered flow enhancement

Our proppant-delivered flow enhancement technologies can increase effective fracture conductivity, length and permeability, and reduce the pressure drop related to multiphase flow effects.

RPM™ relative permeability modification technology alters proppant wettability to neutral, preventing the retention of water-based fracture fluids in the pore throats of the fracture. This increases fracture fluid clean-up and permeability, which leads to higher production and increased ultimate recovery.

Understand your sand and ceramic completed wells with proppant-delivered fracture evaluation services

The FRACTUREVISION™ proppant-delivered fracture evaluation service provides high-definition measurements that help you to understand your propped fractures, and identify the optimal stage, perforation and well spacing for your ceramic and sand completed wells.

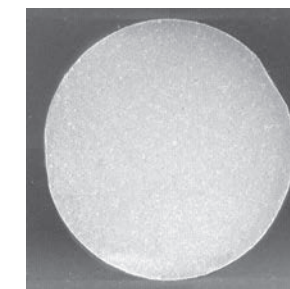
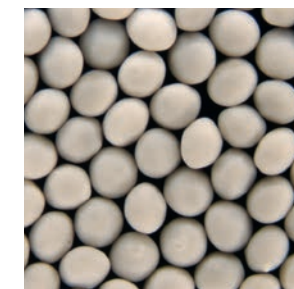
In ceramic completed wells, the service is enabled by CARBONRT® inert tracer technology. The tracer is manufactured into each proppant grain which allows the precise detection of proppant placement and provides a direct measurement of propped fracture height.

In sand completed wells, proppant manufactured with CARBONRT ULTRA tracer technology, a variant of our tracer technology designed for use in sand completions, is blending at an engineered ratio to provide effective detection of the tracer within the non-traceable sand proppant.

As the tracer is inert and can be permanently detected, this allow safe and efficient well fracture evaluation throughout the life of the well, which enables you to optimize production, completion efficiency and field development.

KRYPTOSPHERE: The most conductive proppant technology ever made

Our groundbreaking KRYPTOSPHERE® ultra-conductive proppant technology is engineered to maximize conductivity and sustain hydrocarbon flow rates for the life of the well, even at the highest closure stresses. This breakthrough in conductivity is due to the superior size, shape, strength, smoothness and roundness of the proppant, made possible by our material science and manufacturing expertise.



KRYPTOSPHERE HD
Mono-size and superior shape with exceptional microstructure.

Identify the optimal balance of contact and conductivity

From pre-stimulation reservoir engineering to production optimization, our fracture-oriented services help operators enhance production, increase ultimate recovery and optimize field development plans faster based on their economic objectives.

Our STRATAGEN fracture consulting services provide fracture design and evaluation, well performance evaluation and onsite fracture supervision. We also provide advisory services such as identifying the optimal balance of contact and conductivity for the reservoir, and safeguarding fracture execution.

Our team uses its unique knowledge and experience in reservoir characterization, fracture design and treatment, as well as the application of fracture technologies to deliver a range of industry-leading fracture consulting services that can be applied at any level, from individual stages to entire fields.

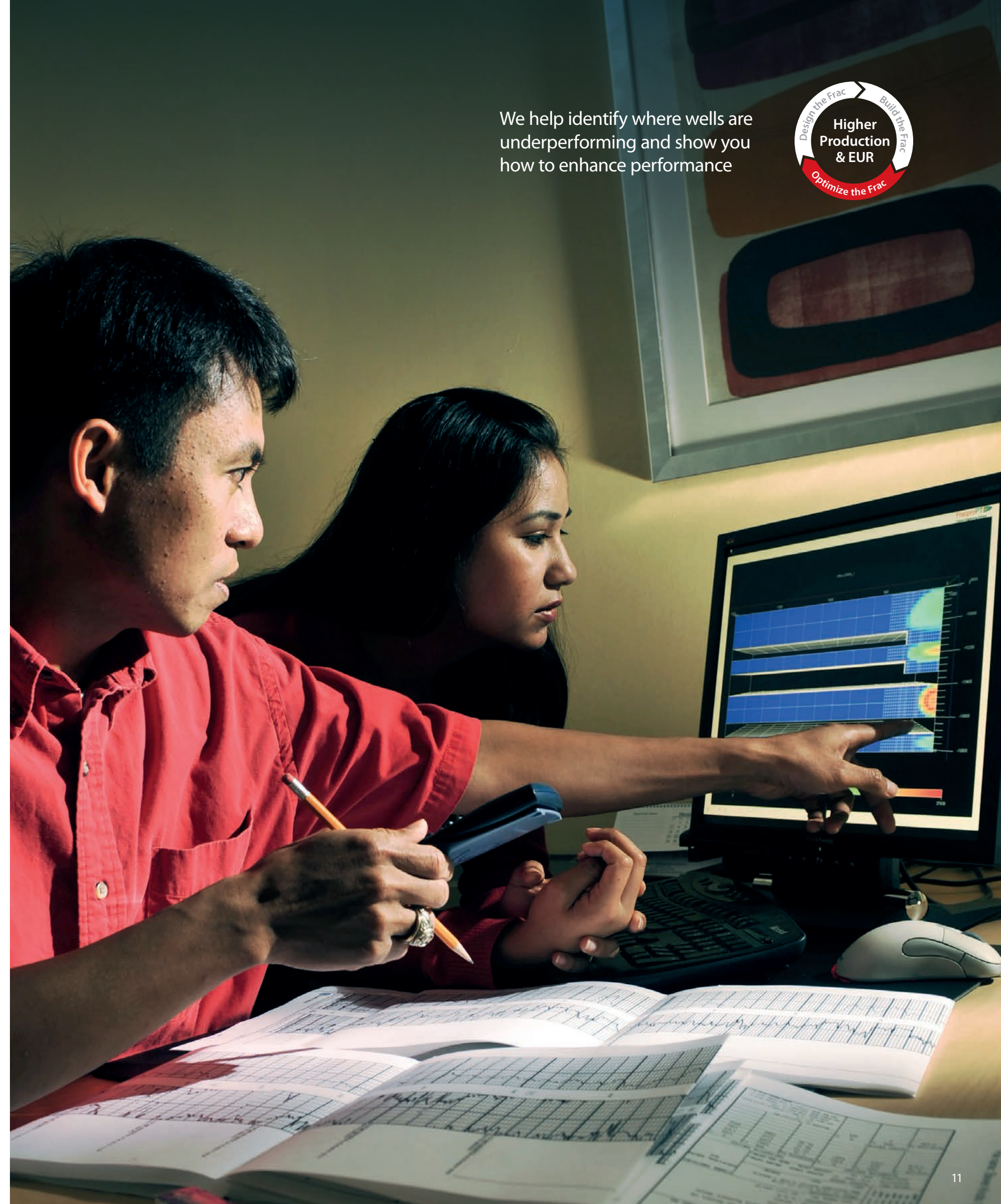
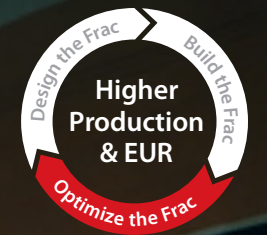
This unique capability ensures our clients increase production and recovery for the life of the well, while lowering finding and development cost per barrel.

Optimize the design of every fracture to the reservoir

Based on an in-depth understanding of reservoir characteristics, and using our STRATASHALE™ shale-based reservoir stimulation workflow, our team will efficiently identify the optimum number of stages, fracture placement and zone coverage, as well as effectively diagnose issues.

With our extensive knowledge of fracture technologies and design, we are able to select the correct proppant and advise on how to efficiently build and maintain the required contact and conductivity for the life of the well, enhancing performance regardless of specific stimulation, completion and production enhancement challenges.

We help identify where wells are underperforming and show you how to enhance performance





Execute the optimal fracture design at the wellsite

Our onsite advisors provide fracture supervision and advisory services to ensure that your fracture design is executed to plan. They also perform any real-time engineering required to overcome any challenges experienced during stimulation.

Our advisors conduct pre-stimulation audits of equipment and testing of materials while using the latest technology to make recommendations on fluids, additives and proppant selection, thereby ensuring you use the most cost-effective or best available technology for each job.

In addition to pre-treatment Diagnostic Fracture Injection Test (DFIT) and analysis, our advisors can undertake post-stimulation analysis to recommend how to optimize the next stage.

Optimize field development faster

Our well performance evaluation services predict well performance and identify why wells are not performing as expected. These insights accelerate the development of enhanced fracture and completion designs, improving well production and economics.

Services include single well reservoir and fracture modeling, multi-well data modeling and analysis, as well as production and economic forecasting.

Our innovative WELLWORX well performance analysis service delivers valuable production insights. It provides an index of key completion success indicators to help you identify sub-optimal approaches, discover new recovery opportunities and accelerate optimal fracture and completion design engineering—ensuring maximum return from emerging and mature reservoirs alike.

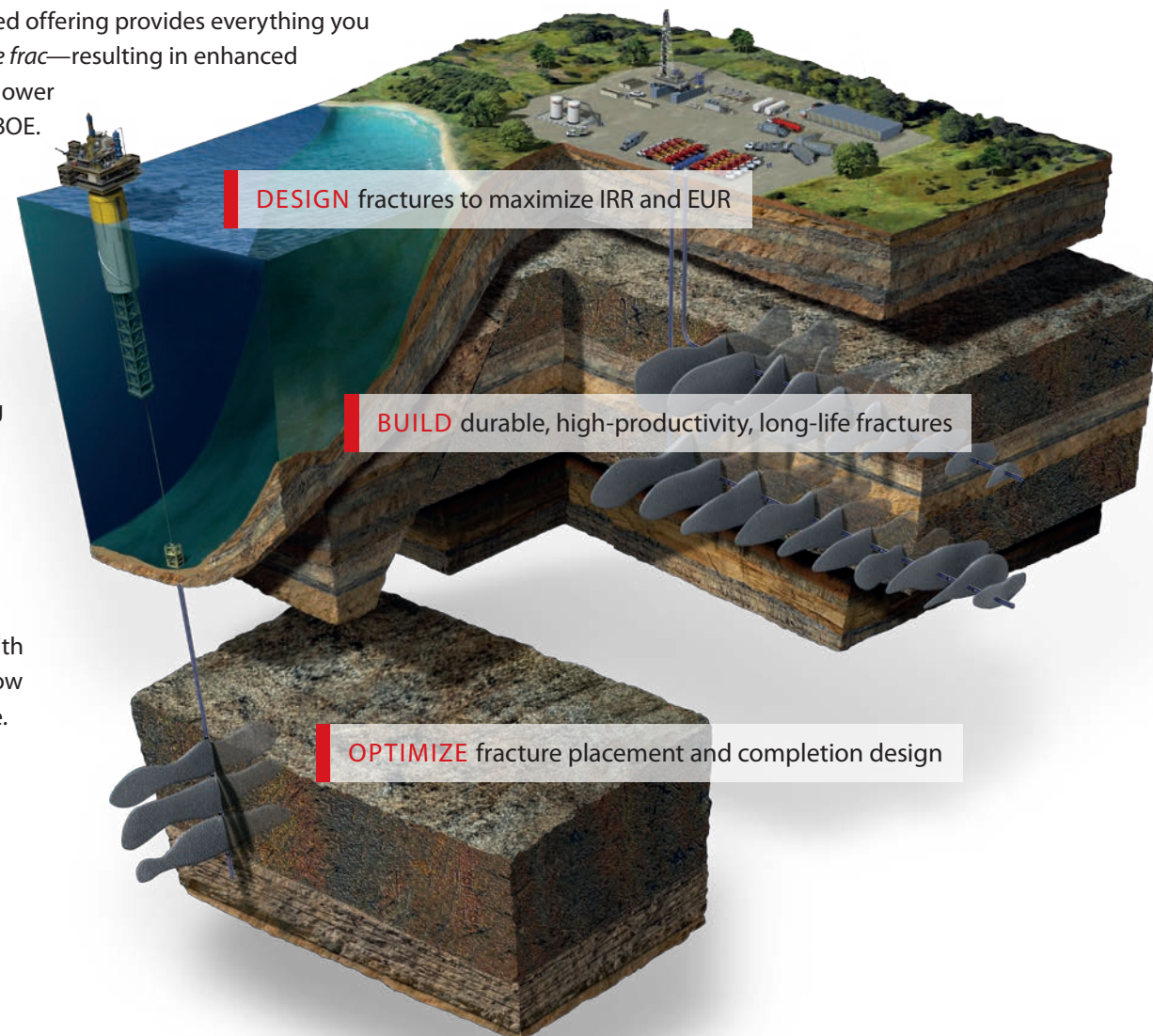
A complete service to enhance your production

The CARBO Production Services team integrates fracture technologies and services from our innovative portfolio, providing services and developing solutions that enable you to achieve your production and economic objectives.

From designing long-term production assurance programs to delivering precise fracture measurements throughout the life of the well, we provide design, supervision, monitoring and evaluation service support across our proppant-delivered production assurance, flow enhancement and fracture evaluation technologies and services.

Our Production Services team collaborates closely with the STRATAGEN fracture consulting services business to provide integrated fracture design and evaluation, well performance evaluation and onsite fracture supervision and advisory services.

Together, this unique fracture-focused offering provides everything you need to *design, build and optimize the frac*—resulting in enhanced production, increased recovery and lower finding and development costs per BOE.



Fracture Software

Enhance the design and engineering of optimized fractures.



Fracture Technologies

Evaluate fractures and build them with enhanced conductivity, improved flow and long-term production assurance.



Fracture Consulting Services

Enhance fracture design, field development plans and reservoir recovery.

CARBO® is an industry-leading production enhancement company that integrates technologies and intellectual capital to design, build and optimize fractures. Our products and services enable clients to increase production and recovery for the life of the well by identifying the optimal balance of contact and conductivity for the reservoir, and building it efficiently to lower total finding and development costs per BOE.

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