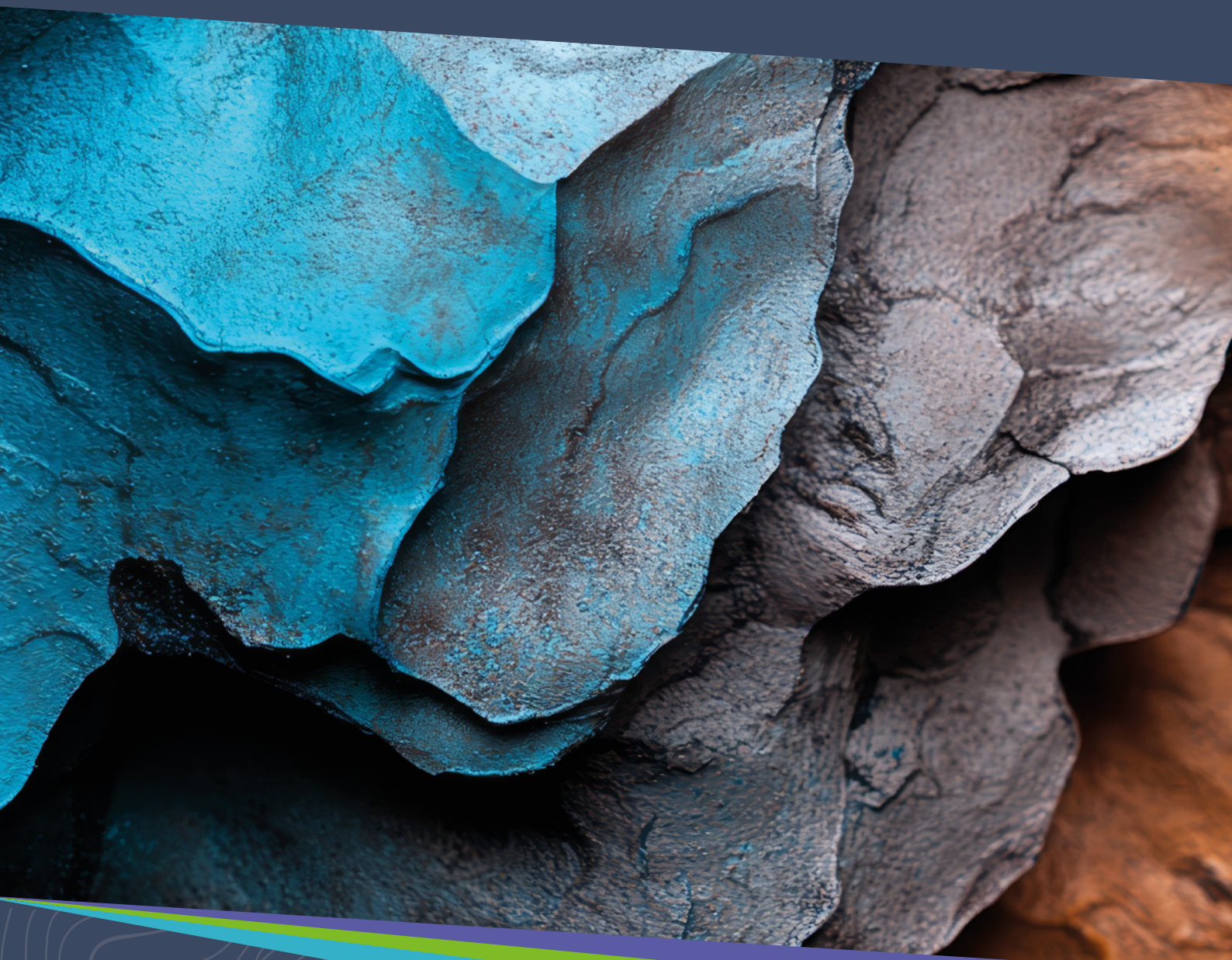
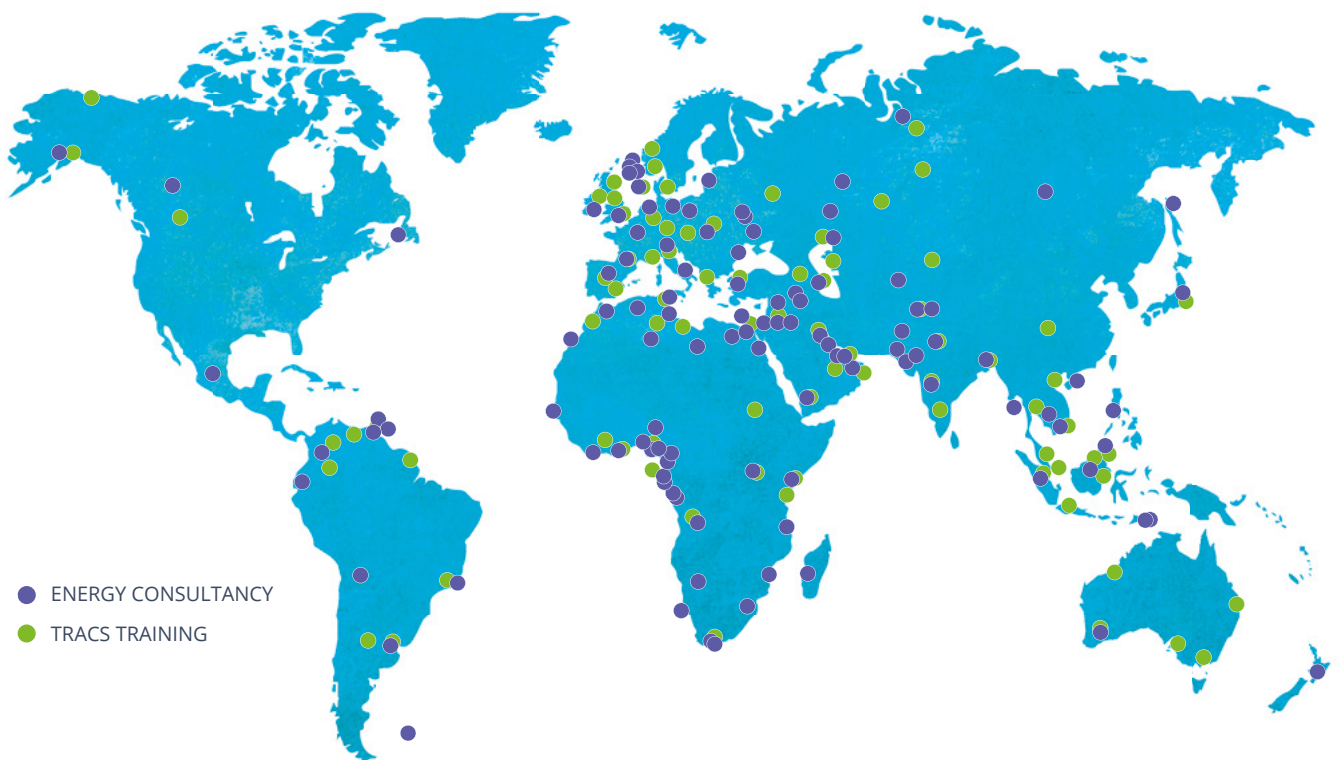




Energy Consultancy & Training

QUALITY. INNOVATION. EXPERIENCE.

At TRACS we understand that 'one size fits nobody' which is why we are proud to break the mould and create bespoke solutions to unique problems. We deliver quality and innovative solutions to exploration and development challenges and offer tailored training that embraces experiential learning.



Breaking the mould: Bespoke solutions to unique problems

TRACS has carried out over 200 reservoir studies in 5 years and delivered more than 100 technical and commercial training courses per annum in over 20 countries. This reaffirms our position as one of the most experienced and respected providers of reservoir management services and training in the business.



TRACS International

TRACS provides consultancy services and training to the upstream energy industry.

TRACS International Ltd (TRACS) was founded in 1992 to provide training and consultancy services to the upstream energy industry. Based in Aberdeen, TRACS has a worldwide client base and experience in every major producing basin.

Over 30 years of quality, innovation and independence.

“TRACS is one of the most experienced and respected providers of integrated reservoir management services and training in the energy business.”

Our track record covers the following:

- Over 200 reservoir studies in the last five years
- Over 100 CPRs and valuations in the last five years
- Delivering more than 100 technical and commercial training courses in more than 20 countries for over 2,000 participants per annum
- Authors of best-selling energy publications and technical papers

ENERGY CONSULTANCY

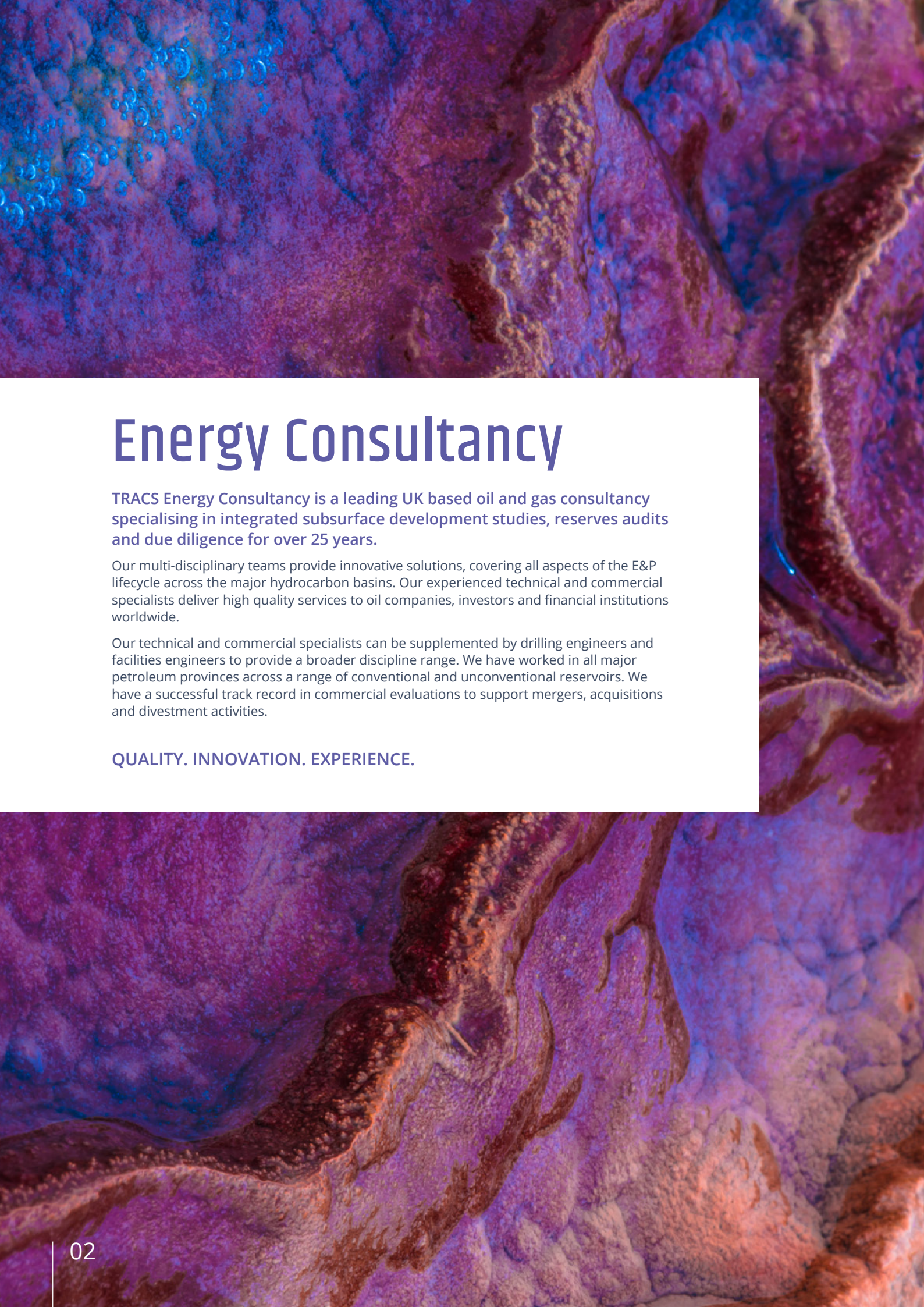
TRACS provides independent reservoir management advice to oil companies, government organisations, small and medium operators and investment groups.

Our activities include Field Development Studies, Evaluations (A&D support), Exploration, Geomechanics, Production Technology, and Carbon Capture and Storage (CCS) and Unconventionals.

From basin opening exploration opportunities to mature and complex producing asset portfolios, we are active across the entire E&P landscape. With their extensive experience, our multi-disciplinary teams have developed innovative tools and techniques to evaluate mature assets and portfolios.

TRAINING

TRACS Training tailors content to specific client needs allowing us to deliver classroom and field courses and programmes that are superior to the standard offering in the marketplace. The TRACS Training style embraces experiential learning and interactive delivery enabling us to offer distinct learning and development programmed globally.



Energy Consultancy

TRACS Energy Consultancy is a leading UK based oil and gas consultancy specialising in integrated subsurface development studies, reserves audits and due diligence for over 25 years.

Our multi-disciplinary teams provide innovative solutions, covering all aspects of the E&P lifecycle across the major hydrocarbon basins. Our experienced technical and commercial specialists deliver high quality services to oil companies, investors and financial institutions worldwide.

Our technical and commercial specialists can be supplemented by drilling engineers and facilities engineers to provide a broader discipline range. We have worked in all major petroleum provinces across a range of conventional and unconventional reservoirs. We have a successful track record in commercial evaluations to support mergers, acquisitions and divestment activities.

QUALITY. INNOVATION. EXPERIENCE.

QUALITY

The cornerstone of everything we do

INNOVATION

Studies tailored to the clients' needs using customised and innovative methodologies

EXPERIENCE

Highly skilled and experienced individuals from across the industry offer the expertise and knowledge base required to deliver the right solutions

Our team's core strength is its holistic approach to each project and its ability to combine subsurface knowledge with risk management experience to bring greater depth and value to our clients' projects.

- A TRACS project manager is assigned to lead the study and act as single point of accountability
- Integrated project teams work together to deliver an integrated solution
- Project framing is used to engage with the client and project team at the earliest stage of the project
- Peer assists ensure TRACS entire knowledge base is accessed giving confidence to the client
- Through a dedicated Uncertainty and risk Group, each project has access to industry-leading practices in the identification and quantification of risks and uncertainties
- Novel approaches, creative solutions and customised methodologies – giving our clients innovative solutions where traditional ones falter

Our activities include:

- Field Development Studies: providing support for field development decisions
- Evaluations: supporting A&D and other commercial activities
- Exploration: from frontier to near field, exploring all avenues
- Geomechanics: bespoke support from wellbore to reservoir scale
- Production Technology: optimising engineering solutions to complex well problems
- CCS: TRACS has been providing support in CCS projects since 2010

Field Development Studies

PROVIDING SUPPORT FOR
FIELD DEVELOPMENT DECISIONS

Integrated Field Development Studies represent the core services of Reservoir Management in the UK.

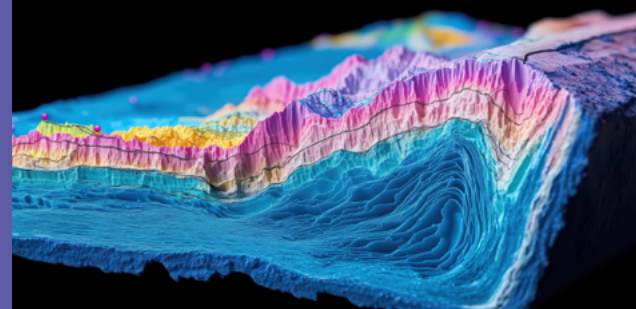
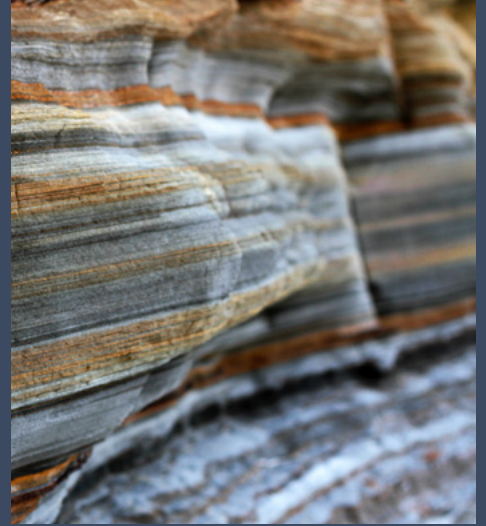
TRACS addresses clients' objectives for field development planning in an integrated manner selecting the most appropriate teams and tools for the study.

TRACS specialises in addressing project uncertainty and risk. This generally involves creating a range of discrete deterministic subsurface models to address the key subsurface uncertainties for testing a range of possible development options. We specialise in development planning and concept screening including economic analysis of field and hub development options.

We have delivered reservoir studies in the majority of the hydrocarbon provinces of the world, covering a comprehensive range of reservoir types, structural styles and depositional environments.

We provide support over the entire Life of Field:

- Exploration
- Field appraisal
- Concept Selection
- Production optimisation
- Infill opportunities
- Late life redevelopment
- Abandonment



Evaluations & Due Diligence

SUPPORTING ACQUISITIONS AND DIVESTMENTS
AND OTHER COMMERCIAL ACTIVITIES



TRACS has extensive experience of providing valuations for private and national oil companies, government organisations, banks and financial institutions.

We supply Competent Person's Reports to support a range of commercial activities including Acquisitions and Divestments and flotation on stock markets. We deliver Independent Engineer Reports as part of the Due Diligence process for reserves based lending. We also offer Reserves Audits and certifications prepared in accordance with international standards and have reviewed and developed reserves reporting guidelines for oil companies and national regulatory bodies.

Our Evaluations teams consist of commercial and technical specialists with extensive experience in subsurface analysis, reserves auditing, commercial evaluations and business consultancy.

From basin-opening exploration opportunities to mature and complex producing asset portfolios, we are active across the entire E&P landscape.

We provide support over the entire Life of Field:

- Exploration
- Field appraisal
- Concept Selection
- Production optimisation
- Infill opportunities
- Late life redevelopment
- Abandonment



Exploration

FROM FRONTIER TO NEAR FIELD, EXPLORING ALL AVENUES

We provide expertise in a broad range of exploration activities, from regional play fairway analysis through prospect evaluation and well planning services. TRACS also has a history of delivering successful near-field and infrastructure led exploration evaluations.

Key skills areas are:

- Play fairway analysis
- Portfolio management
- Prospect evaluation and ranking
- Uncertainty and risk evaluation
- Economic valuation
- Well planning services

These exploration activities have been utilised to support bidding rounds, license delivery activities and asset & portfolio evaluations.

Our dynamic, creative and experienced teams have worked in a variety of basins, play types and structural styles. This broad skill set results in the delivery of robust interpretations grounded by experience and an understanding of the key exploration risks. Areas of expertise and historical projects span the globe from South America through Europe, Africa, the Indian Sub-Continent, Asia and on to Australasia.

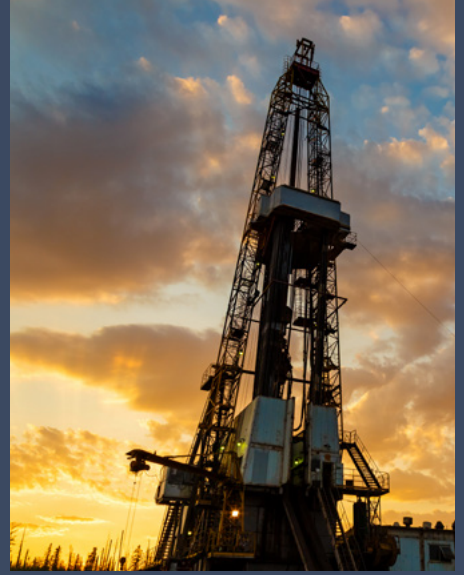
Strong integration with TRACS other key disciplines such as Field Development Studies, A&D support and Production Engineering further strengthens and adds value to TRACS exploration evaluations.

"Many thanks for the excellent evaluation report ... I was impressed by the team who got to grips with the data room very quickly and transcribed their findings into a good and concise write up."

Small Operator, Japan

Energy Transition

PROVIDING INNOVATIVE SOLUTIONS
TO NEW CHALLENGES



TRACS continues to harness its skill and experience in reservoir characterisation and resource classification to support the Energy Transition.

TRACS has adapted and expanded its subsurface skillset to support the CCS and geothermal arenas.

TRACS provides training to the next generation scientists picking up the decarbonisation baton.

CARBON CAPTURE AND STORAGE (CCS)

TRACS offers innovative solutions to new challenges in the quest to help the UK to become a Carbon Net Zero economy.

From Screening through Execution, TRACS has supported clients over the CCS project life cycle:

- Feasibility screening
- Detailed screening
- Modelling: Reservoir (static and dynamic) and Geomechanical
- Appraisal well planning and execution support
- Monitoring programmes
- Risk assessment at all stages
- Licensing and regulatory requirements

GEOTHERMAL

TRACS has adapted its subsurface skillset to support geothermal projects.

Subsurface support:

- Reservoir characterisation and modelling
- Dynamic (thermal) modelling <=> Geomechanical modelling
- Resource estimation, audits & assurance reviews
- Due Diligence (subsurface)
- State-of-the-art-software
- Collaboration with academia
- Advisory role on small projects
- Research support on larger projects



TRACS has over
15 years' experience
of supporting
Carbon Net Zero

"TRACS contribution to the technical documentation for the License Round application bid was of the highest quality. The enthusiasm of your team and their timely delivery of products was essential to the project and a successful Round application."

Large Operator, North Sea

Production Engineering

OPTIMISING ENGINEERING SOLUTIONS TO COMPLEX WELL PROBLEMS

By delivering the right blend of field proven techniques and leading edge technologies we add value to our clients' projects and operations.

Early integration of completion design and production technology with the subsurface and well engineering disciplines is crucial for selecting the optimum development concept. As new technologies enable field developments with fewer wells than ever before, it is increasingly important that each well delivers its objectives. We work closely with our clients and TRACS well and drilling engineers to deliver safe and high quality production technology solutions.

Our engineers provide solutions in areas such as:

- Reservoir inflow performance
- Wellbore and flow line performance
- Flow assurance
- Dynamic multi-phase flow simulation
- Innovative completion and stimulation design
- Wellbore stability
- Pore pressure and fracture gradient prediction

Integrated within these engineering services we have proven capability in the geomechanics arena covering topics such as borehole stability, casing damage, well failure, reservoir compaction and safe well operating limits during production and injection. Our team of geologists, geophysicists and geomechanics experts also provide integrated geomechanical modelling and 4D seismic services.



"We have used the services of TRACS to provide us with independent assessments of a number of assets, and have found TRACS to be responsive and flexible in providing a high quality product. Their independence and technical depth ensures that their reports and Competent Person's Reports are recognised and valued by both financial and energy institutions."

Dotun A.

Lekoil – African focused E&P company

CASE STUDY #184

TRACS generated an extensive prospect portfolio for an area near producing fields, West of Shetland (UKCS).

Prospects and leads were mapped from seismic data and we developed Gross Depositional Environment maps based on integration of well data, geological concepts and seismic attribute analysis.

The prospects and leads were evaluated using Common Risk Maps and ranked in terms of potential resource and prospect-specific risks.

CASE STUDY #461

TRACS carried out a feasibility study for the drilling and completion of a high angle HP/HT well on a new field (Central Graben, UKCS).

The analysis included casing and completion design, a review of borehole stability and sand control issues and an assessment of required metallurgy and potential tubing sizes.

CASE STUDY #553

TRACS investigated the sub-surface issues of Carbon Sequestration in saline aquifers (Southern North Sea).

The project included the characterisation of the aquifer, the simulation and prediction of fluid movement and pressure build up, appraisal well planning and the design of the long-term monitoring programme.



CASE STUDY #744

TRACS delivered a Due Diligence report to inform the Client on a bidding decision to acquire a significant interest in an Onshore Mining License (Nigeria).

We carried out a technical and commercial review of the Information Memorandum and supporting data. The portfolio included several brown field developments, further exploration potential and large-scale infrastructure projects.

CASE STUDY #756

TRACS evaluated several complex deep water turbidite fields, offshore West Africa.

We generated a range of reservoir models capturing key static and dynamic uncertainties such as sand extents, sand quality and connectivity.

We then developed these into a range of simulation models for history matching and production performance prediction.



TRACS Training

At TRACS Training we believe a successful learning event requires more than the simple presentation of information.

Long-lasting learning calls upon the delegate group to engage with enthusiasm and for the tutors to deliver inspirational events which allow a chance to think, discuss and debate.

Experiential learning is therefore core to our events, with tutors motivated not only to pass on knowledge and skills, but to pass on their enthusiasm for the business, their passion for their subject and their experiences from their daily work as practising technical professionals in the E&P business.

TRAINING ON SIX CONTINENTS

We believe the success of a course is ultimately determined not only by good delivery but also by tailored design.

Our training courses are distinguishable from the industry standard by being tailored to the specific needs of a client audience.

TRACS Training: On course, of course.

WE INSPIRE

Successful learning is more than presenting information. TRACS tutors deliver inspirational events which give room to think, discuss and debate. Experiential learning is at our core.

WE MOTIVATE

Our knowledge and skills are passed to you with our tutors' enthusiasm for the business, passion for the subject and their experiences from daily industry practice – always at the forefront of new trends in energy.

WE LISTEN

Good delivery is bespoke delivery. Our courses are tailored to become YOUR courses.

If our training list does not feature your course, contact us, and we often have the right tutor to build the course you need.

IMMERSIVE. INSPIRING. MOTIVATING. BESPOKE.

- 40 tutors
- 100 courses and field trips a year
- 6 continents
- Knowledge and experience that stick

The TRACS Training approach:

- Constantly evolving course content to meet the needs of a changing industry
- Course materials are custom-developed
- The right training provided by the right tutors
- The structure of the programme is adapted to fit the client's needs
- The courses combine classroom-based learning with practical application

CAPABILITY FRAMEWORKS

TRACS Training consultants have been involved in building capability frameworks for BP (UK commercial), Shell (SE Asia and central training centre) and Amerada Hess.

INTEGRATED EVENTS

TRACS Training specialises in designing and running integrated events, especially for early career, 'on-boarding' groups, notably for Petronas (Malaysia), BP (globally), Shell, ADNOC (Abu Dhabi), OMV (globally) and Wintershall (Germany). We have also run mid-career technical integration events (e.g. BP, Shell and YPF Argentina) and later career events for senior management (e.g. BP, Hess).

SPECIALIST EVENTS

We run a selection of specialist courses in areas matching the expertise of our tutor pool. These range from exploration, through the petroleum and well engineering disciplines to surface facilities design and commercial evaluation. We have 50 courses currently available 'off the shelf', with an offer to develop more on request.

**More than 30,000 people
have taken part in TRACS
Training courses**

TRACS Training Series

TRACS TRAINING HAS A GLOBAL REACH



Our material is divided into several Training Series, with each Series having a distinct character and typical course groupings. New courses, tailored to clients' requests, can be offered within any of these Series.



ENERGY TRANSITION The Energy Transition and Renewables Series, includes courses with classroom or online virtual instructor-led options for customised training. Many are run with multiple leading experts from industry and Heriot-Watt University.

EARLY DEVELOPMENT The Early Development (Graduate Onboarding) Series is designed for groups of new entrants to the industry, such as graduate intake. The courses are typically multi-disciplinary in content and audience and may extend to complete course programmes. The courses typically include a team-building component.



EXPLORATION AND PRODUCTION OVERVIEW The E&P Overview Series is aimed at those audiences, often non-technical, looking for a succinct summary of the E&P business. The courses are typically short (one-to-three days) but can range in duration from just one hour to one week.

RESERVOIR The Reservoir Series includes the technical subsurface courses from geophysics through to geology, petrophysics and reservoir engineering. These can be given as courses for 'other disciplines' as well as introductory-level courses within-discipline.



WELLS The Wells Series includes the wells-based technical courses from completion design through to introductory drilling and well planning. These are offered for non-wells disciplines in addition to drilling and completions staff.

BUSINESS The Business Series embraces the non-technical business courses such as petroleum economics and risk analysis, strategy and planning, and standard operating procedures (SOPs). These have been run both as traditional classroom courses and as workshop-style programmes, often for large groups (50+).



UNCERTAINTY AND RISK The Uncertainty and Risk Series is designed to help navigate how to make commercial decisions in the face of inherent unknowns in petroleum developments. These courses are typically delivered over 1-2 days, delivering the highest impact when the participants work in multi-disciplinary teams.

OPEN AIR™ The Open Air™ Series takes training events to outdoor locations. It combines classroom teaching with sessions on rock outcrops which serve as reservoir analogues. The teaching is pitched at multi-disciplinary audiences as well as geoscience groups. Most courses from other Series can be offered in this format.





Energy Transition

THE ENERGY TRANSITION IS ON THE WAY.

The TRACS training portfolio contains courses on Energy Transition and Renewables, many with classroom or online virtual instructor led options for customised training.

At-scale projects in renewable energy pose challenges at various stages of the development that threaten their viability. Choice of scale and type of energy resource will depend on location, infrastructure, legislation, societal acceptance, market developments and affordability.

Courses available (timings can be flexed to suit clients needs):

The Energy Transition for Business

The Energy Transition – Key Components

Modelling for CCS Projects

Energy Transition in a Day

Carbon Capture and Storage (CCS)

Geomechanics Integration

Geothermal Energy

Short modules available 'Engineering the Energy Transition' in collaboration with EP Consult Energies. Topics include:

Engineering the future of energy

Handling the load

Where the wind blows

We follow the sun

Well grounded: location, geothermal, location.

From grey to green

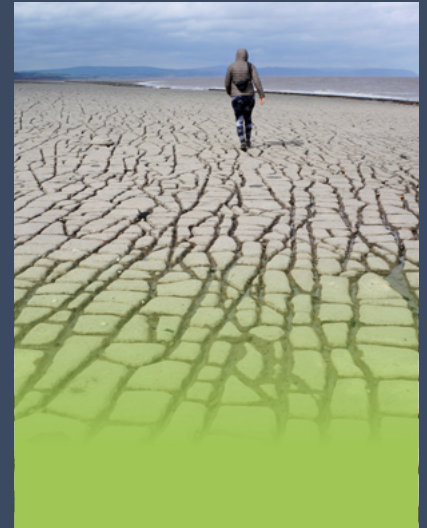
The lighter side: hydrogen energy storage.

And in the end...

How do we pay for it?

Open Air™ Courses

THE CREAM OF THE OUTCROP



The Open Air™ Series takes training programmes to outdoor locations, combining classroom teaching with outdoor sessions on rock outcrops which serve as analogues for oil and gas reservoirs.

The Open Air™ Series is based on the idea that effective learning need not be classroom-based, and that courses with aspects of rock outcrop fieldwork should not be limited to geologists.

The Open Air™ courses are therefore pitched at multi-disciplinary audiences as well as traditional geoscience groups, and most courses from the other Series can be offered in this format. Geoscience, petrophysics, reservoir engineering and well-based training have all been delivered this way, sometimes in combination.

Typical Open Air™ courses are based at locations with conference facilities which are close to the analogue rock outcrops. The schedules are a blend of classroom- and outdoor-based teaching, the balance of which depends on the location, content and weather.

Open Air™ courses have ranged from short three-day programmes to two-week courses covering a range of discipline areas, and can be themed according to client needs. Previous course themes include basin analysis, field development planning and reservoir modelling, all of which have been run for multidiscipline groups.



"By tailoring content to specific client needs, TRACS Training delivers Open Air™ events that are superior to the standard offered in the marketplace."

The TRACS training style, which embraces experiential learning and interactive delivery, combined with a history of teaching in 45 countries, enables us to offer distinct learning and development programmes globally."

Arndt Peterhänsel

Global Head of Training,
TRACS International

"As usual, the scores on the evaluation forms are very good. This is also my impression from speaking to some of the participants. They all say that you are 'gifted' when it comes to presenting the material in an intuitive, interesting and useful manner."

Training co-ordinator
Equinor



"I enjoyed the tutors' method of back and forth between presentations and tasks."

"I enjoyed pretty much all topics."

"As a person who has taken a 2-week version of this course and now a 1-week version, I highly recommend this course."

Course Participants
Young Professionals Training
AkerBP



"Instructors knowledge and long experience in Geomodelling, Sed-Strat and Simulation was evident."

"Valuable book to read and continue to learn from during and post the course. Field guide was simple enough with the right amount of information for the day-to-day."

"Huge care for the group and logistics were excellent. Attention to the safety as a top priority in the field was evident."

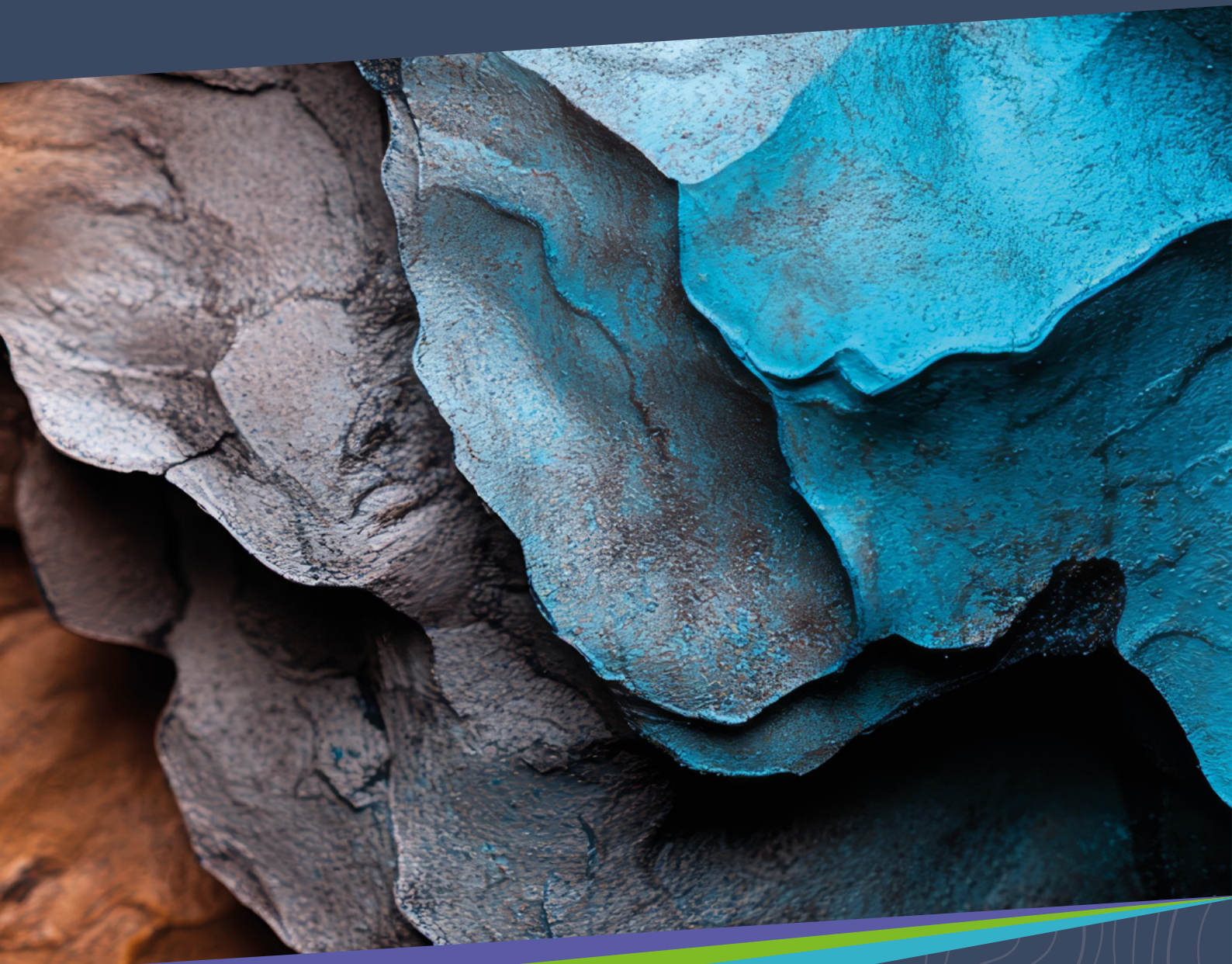
Participants
Pyrenees Open Air Event

BP



"I greatly appreciated your contribution to our programme for new graduates and mature hires... it was a very dynamic programme of work-place learning which we adapted as we went along. You did a great job of identifying needs, and creating and then pulling together the elements of the programme. This went well beyond my expectations."

Team leader
Shell



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