



Sampling and Injection Solutions

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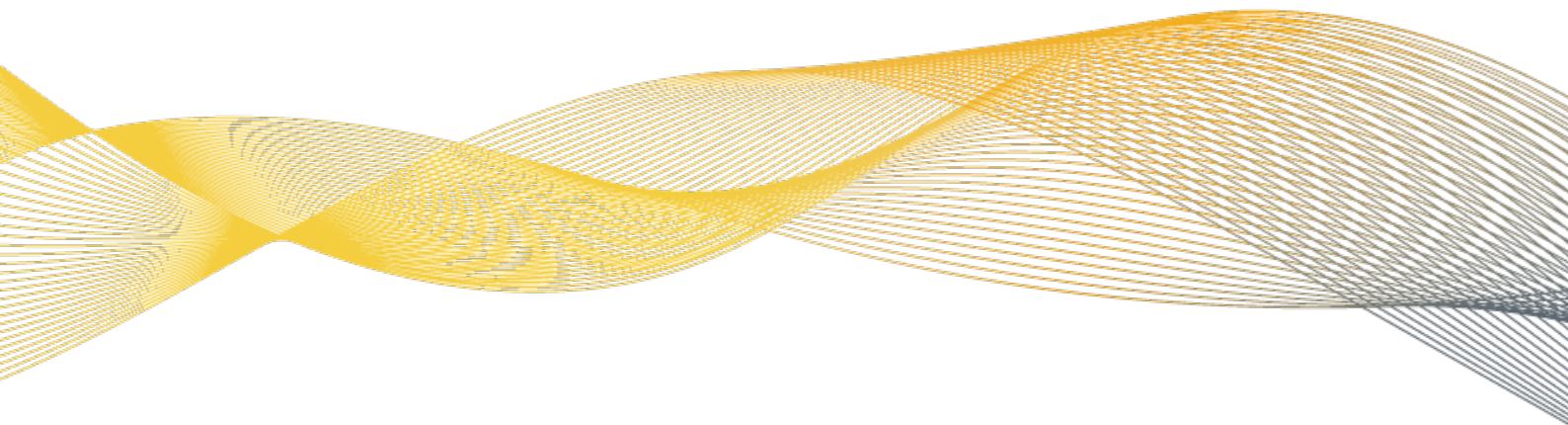
Proserv provides cutting-edge technologies to our customers to support the entire lifecycle of an asset, improving reliability, optimising performance and extending the life of critical infrastructure.

By combining our technical ingenuity with our engineering, manufacturing and field service expertise, we create innovative, industry-leading solutions that are flexible and agnostic by design, able to be integrated into any existing system.

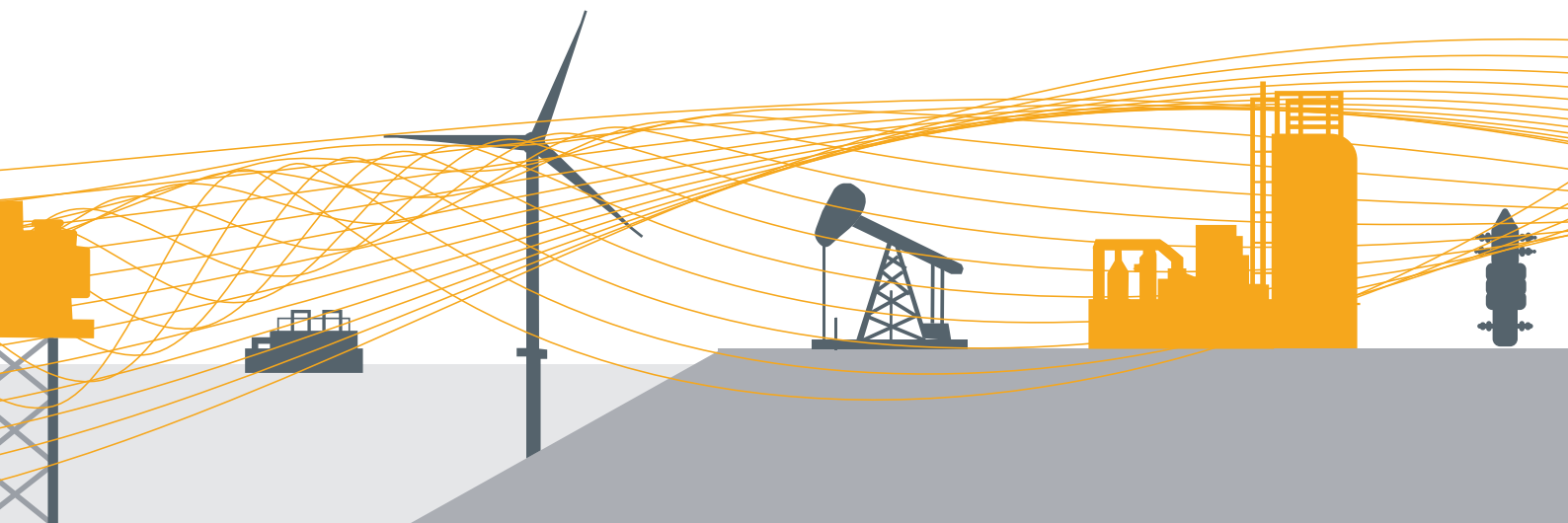
Fully flexible solutions

From reservoir to refinery, Proserv specialises in the provision of equipment, systems and bespoke sampling and injection solutions throughout the life of field. We support our clients throughout all stages of the sampling process, including:

- Design
- Support
- Training
- Certification
- Manufacturing
- Aftermarket support







Reservoir appraisal and evaluation

When reliable sampling is required to accurately evaluate and appraise a reservoir, high quality pressure, volume, temperature (PVT) samples must be safely captured and contained at the well site. These samples must be representative of the produced reservoir fluid as decisions on future field development will be made based on the analysis results obtained.

Once captured, the samples are transported to a laboratory where chemical composition and physical properties are measured. This process needs careful management throughout to ensure sample integrity, operator safety and legal compliance.

We specialise in solutions for:

Downhole reservoir sampling

Allows for the capture of high quality samples from within the reservoir for PVT analysis. This involves deploying tools by wireline, drill stem test (DST) or coil tubing.

Subsea and wellhead sampling

Used to obtain PVT quality samples directly from the subsea or topside christmas tree, when conditions are such that the collected fluid is still in single phase.

Surface separator sampling

Provides back up quality PVT samples from surface separators to complement downhole reservoir samples, used in conjunction with individual phase flowrates.

Production optimisation

To maximise field performance, produced fluids must be monitored to allow operators to make informed decisions on how best to manage their reservoirs, production and process systems.

Subsea sampling

Proserv works with clients to design, build, maintain and operate subsea sampling systems, which will safely capture and contain samples from a christmas tree or pipeline, to allow the fluid characteristics to be identified at source.

Subsea sampling systems are used throughout the producing life of a subsea well to monitor changes in produced fluids and operating conditions. This can be beneficial for supporting the calibration and validation of subsea multiphase flowmeters, flow assurance, production chemistry and integrity related challenges.

Topside sampling

Proserv specialises in the provision of custom-made sampling systems, which are used to help monitor production and maximise economic recovery throughout the lifetime of the field.

Expanding on our experience in sample cylinder manufacturing, we have developed sample systems to help benefit and assist in the taking of samples throughout the production process.

Manual sampling stations

Manual sampling stations allow produced fluid to be sampled into appropriate shipping cylinders using suitable valves and manifolds that are manually activated by the operator, e.g. flare, fuel, export gas and separator and offloaded liquids etc.

Conditioning systems

Conditioning systems are required when large volume samples have been collected over a long period of time and contents need to be homogeneous before being sub-sampled and analysed. Proserv's ProMix homogenising



equipment is approved by numerous pipeline operators and oil companies.

Mini-separator sampling systems

The mini-separator has been designed to simplify the process of sampling oil, water and gas safely from risers, wellheads and manifolds whereby samples would previously have been captured into fixed volume open-top containers, with the gas being flashed off to atmosphere, exposing the operator to toxic and flammable gases.

Sand and solid sampling systems

Proserv can design, manufacture and supply a range of tools and equipment to monitor and quantify the level of sand being produced at given production conditions.

When hydrocarbons are produced from unconsolidated reservoirs, sand production can lead to erosion and blockages in flowlines and other production equipment. Sand management techniques allow the operator to maximise and maintain production while managing sand at acceptable rates and maintaining the integrity of their assets.



A person wearing orange safety gear and white gloves is working on industrial equipment. The equipment has various pipes, valves, and labels like "SOLVENT INLET" and "FLUSHING". The background is a solid orange color.

Our expertise is founded on our broad technical knowledge, extensive in-house engineering and production chemistry capability.

Our service extends beyond the design and manufacture of equipment into rental and maintenance support for our clients across the globe.

Decommissioning

Preparing for the unexpected.

Many global assets are reaching the end of their life and retiring these assets can sometimes be challenging. Steel jackets, storage tanks and gravity-based-structures used to support topside production facilities all have the capacity to contain production fluids and therefore contaminants to the environment.

These structures need to be sampled to confirm fluid contents so a plan can be put in place for their safe disposal.

We provide bespoke engineering solutions for sampling from a variety of location including:

- Wells
- Topside and jackets
- Subsea infrastructure

Sample cylinder, equipment and transportation

Proserv's sample heating and transfer equipment ensures that sample quality is not compromised during transfer. Our certified cylinders allow for safe transportation of samples from the field to a laboratory of choice with the correct shipping certification for their destination countries.

We can offer a full range of sample handling equipment from sample cylinders to transfer benches to heating jackets, and all of our proprietary equipment can be purchased, or rented, as required.

Injection solutions

Solutions are injected into the process for a variety of reasons, including performance optimisation, to reduce capital cost and improve the longevity of facilities, infrastructure and the reservoir. By having greater control over the reservoir, process and integrity, production and operational efficiency are increased.

Proserv specialises in the application, design, fabrication and manufacture of permanent and rented injection systems and ancillary equipment, including the specialised monitoring and reporting technology (SMART) injection chemical management system and the displacement injection sand calibration chamber (DISCC).

The Proserv difference

Proserv has a great deal of experience overcoming the challenges inherent to sampling. At the core of our offering, is our passion for solving problems and finding new, more efficient and more effective ways for our clients to operate.

Industry leading portfolio of products with expert bespoke design capability

Proserv offers a large range of standard products to meet our clients' needs. We use tried and tested technology when it will provide added value for the required application. This approach allows us to be cost effective and quick to market. We can also customise our standard products, providing bespoke sampling solutions to meet particular project requirements.

Innovative solutions to meet any budget

Proserv can offer solutions for making the best use of the equipment clients already have or provide access to additional equipment, without the need to commit additional capex.

Ongoing R&D: Taking on the challenge of preserving low levels of H₂S or Hg

Proserv works with several different vendors to provide non-reactive coatings. Coatings can be applied to our tools and cylinders to reduce any losses of H₂S or mercury (Hg) until accurate analysis can be performed.

Fully knowledgeable of the complexities of shipping pressurised samples

We have been in this business for over 40 years, so we are very experienced in certification and recertification

requirements. We guide clients so they are using correctly certified equipment, depending on where samples are being collected and shipped to.

Sampling experts ready and available

Proserv can support clients with appropriately trained and certified personnel to complete sampling operations using our own or client owned equipment.

Fully flexible commercial model to align with client needs

Proserv offers its clients a flexible business model to meet specific needs, including sale, rental, operations or anything in between.

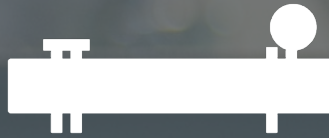
Full after sales support for the life of the asset

Proserv can offer complete after sales service support for spares, servicing, re-certification and training. We also have a global network of service centres to maintain or re-certify equipment.

Standard and bespoke solutions for the most severe environments

Proserv produces standard products using specialist materials that are NACE MR-0175 approved for use in severe service environments.

We work with different elastomer manufacturers to identify appropriate sealing solutions for challenging environments such as high pressure, high temperature and high H₂S.



Over 40 years' experience providing engineering,
manufacturing and service

750

Downhole samplers

Single phase and multiphase options

40,000

Sampling cylinders

DOT, PED, TPED, TC and AS certified for transportation

10

Subsea sampling systems

Diver and ROV operated, isobaric and isothermal capabilities

1,000

Fluid sampling systems

Automated, manual, inline, fastloop and solid filtration units

2,000

Chemical injection systems

Air driven, electric, solar powered skids, SMART management



We improve the reliability, integrity, efficiency and productivity of critical infrastructure with industry leading controls technology.

CONTROL | MONITORING | INTELLIGENCE | OPTIMISATION

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