At the heart of Halliburton is well testing.
At the heart of Halliburton is well testing.

TEST TOOLS
DATA ACQUISITION SERVICES
FLUID SAMPLING & ANALYSIS
SURFACE WELL TESTING

SUBSEA SAFETY SYSTEMS
Over 85 years ago, Halliburton introduced drillstem testing (DST) to our industry, establishing the initial standard for well testing. These early well tests provided a basic understanding of a reservoir’s characteristics.

Although the discipline of well testing has evolved dramatically since then to provide more extensive and accurate reservoir information, the ultimate goal remains the same; to empower you with the ability to not just optimize a well’s performance, but to optimize your financial investment.

Of course the right data can help determine a reservoir’s size and structure. But, it can also discover productivity indicators like permeability, skin, and initial reservoir pressure. So, not only can the right information aid you in understanding a reservoir’s near-wellbore boundaries, when you know the existence of heterogeneities, discontinuities, and connectivity, you can better answer your most important questions. When you get exactly what you need, you’ll be equipped to make more efficient and effective decisions about completion design, production facility design, and establishment of refining procedures.

At Halliburton, we understand that well testing isn’t just about data. It’s insight. Potential. Control. Whether it’s making money, saving money, or saving time, well testing is about you achieving your business goals.

Partner confidently with Halliburton because as we continue to lead the industry with proven, comprehensive, fit-for-purpose solutions that are designed specifically for you to assess the financial health of your reservoirs, we’ve always been well testing. We’ll always be well testing. At the heart of Halliburton is well testing.
Halliburton’s newly designed line of advanced Subsea Safety Systems provide comprehensive well control during installations, workovers and completions.

Subsea Safety Systems for Exploratory Wells and Production Wells

As our industry continues its commitment to procure oil and gas from around the world in safe and environmentally sensitive ways, Halliburton is proud to offer two innovative, Subsea Safety Systems to match your needs:

- Small-Bore System for exploratory wells
- Large-Bore System for production wells

Regardless of size, their primary function is to provide well control during certain types of operations run from a mobile offshore drilling unit. Typical mobile offshore drilling units include dynamically positioned drilling vessels and semi-submersible rigs.

The most common type of emergency is when a storm at the surface creates excessive motion in a drilling vessel. Because the vessel is attached to a fixed point on the floor of the sea, that motion could snap the landing string – or riser – if the vessel gets pushed too far off position. A rupture could leak hydrocarbons from both below and above, gas and oil could be released from the well, or could drain down from the riser.

Other conditions creating emergencies that require disconnects include strong currents pushing drill vessels outside of their zone of safe operation and in the arctic, approaching sea ice or ice bergs could do the same. In addition to natural causes, a vessel’s dynamic positioning system could fail.

Regardless of the cause, Halliburton Subsea Safety Systems let operators isolate the well within the blowout preventer (BOP) stack and disconnect in a safe and controlled manner. During a disconnect, our systems can even cut coiled tubing that may be running into the well, and still seal off both the riser and the well.

Modular Design

Together, six main components work together as one Subsea Safety System:

Quick Union Joints

Quick Union Joints provide safe, simple, fast connections to eliminate difficulties and damage that occasional occur with competitive systems.

Lubricator Valve

The Lubricator Valve controls pressure while running tools into the well and enables testing to proceed without killing the well.

Retainer Valve

The Retainer Valve seals off the end of the riser in the event of an emergency disconnect so fluids above the blowout preventer cannot escape into the sea. A ball valve provides fail-safe operation. When pressure is cut off from below, it seats and seals.

Safety First

Halliburton Subsea Safety Systems are designed to control fluids in the riser at all times and keep personnel and the environment safe.
Subsea Safety Systems

Safety Tree
The Safety Tree sits inside the blow-out preventer and connects to the preventer's shearing rams so pipe or tubing can be cut, if necessary, during disconnects. The tree also provides multiple injection ports so that chemicals can be added to the oil and gas flowing out of the well.

Emergency Response Module
Halliburton Subsea Safety Systems are controlled one of two ways:
- Direct Hydraulic
- Electro-Hydraulic

In extremely deep offshore wells, pressure activation of the Emergency Response Module may not be sufficient for all circumstances. So although Halliburton offers direct-hydraulic and electro-hydraulic controls on every tree, to more quickly activate valves below the surface, many operators prefer the electro-hydraulic Emergency Response Module.

Chemical Injection and Control Lines
Halliburton Subsea Safety Trees contain ports for chemical injection and control lines. With these ports, you can work to prevent a riser from icing up in the near-freezing conditions found in deep water. When used for completions, the trees have other ports that allow for running control lines to the pipes and valves that are being installed downhole.

Packaged Services
Our systems also come with:
- Specialized mechanical and hydraulic design work up front ensure our systems will function properly with yours - especially the blowout preventer.
- On-shore pressure testing and system deployment includes pre-assembled delivery - minimizing rig time and spaced requirements
- A crew of four to five personnel accompanies each sub sea safety system. This crew remains with the system throughout its deployment and oversees its safe operation
- Project management for multi-well projects
- All equipment maintenance - to ensure Halliburton Subsea Safety Systems operate properly each and every time we return our them to shore for maintenance after each deployment.

Three Different System Designs
Halliburton provides three systems for different applications.

The Halliburton Small Bore Subsea Safety System is a 3” system that is used in exploration wells. Of course, the inside casing for production wells is much larger so Halliburton provides a 6 3/8” and 7 3/8” Large Bore Subsea Safety System. Each of the Large Bore Systems have specific pressure and strength ratings. This means that whether your well is in the exploration or production stage, for your Horizontal (or Spool) Production Trees or Wellheads when mud is not present, Halliburton has a reliable, simple, and safe way to disconnect in an emergency while still controlling a well.

Proven Reliable
The fact is, since Halliburton has been offering this service, we have not had a single lost time incident due to equipment failure. We believe this will continue due to the way the systems are designed, maintained, and continuously improved.

For example, redundancies are built in. Every o-ring has a back up. Disconnection methods also have back ups. And, even with the primary disconnection method being a simple, mechanical latch, a secondary, hydraulic system is also available.
Flexible Systems
Of course, reliability is the most important feature of Halliburton Subsea Safety Systems. But, they also provide operators with flexibility:

- Halliburton Safety Tree has the shortest design in the industry. That means it works with the widest variety of blowout preventers.
- Halliburton Subsea Safety Systems can be used in virtually any environment. From High Pressure/High Temperature (HP/HT) to heavy oil, these systems can be leveraged without significant adjustments.
- Halliburton Subsea Safety Systems have tensile ratings that allow them to be used on deeper wells with heavier completions.

Efficient Systems
Halliburton Subsea Safety Systems make drillers more efficient. They include more injection ports for pumping higher volumes of chemicals, faster. The Systems also offer more through-ports to run controls down to chokes and vales in wells that are being completed. The systems feature mechanically locked, high-integrity joints, thus eliminating the need for assembly on the rig floor - they are assembled and pressure tested at Halliburton and arrive ready for deployment, saving all-important rig time and space. An easy-seating, debris-tolerant, passive latch system also saves rig time. This straight-in bayonet system is designed with a cone on the receiving end that guides the point of a landing string into position until it latches and locks. Other safety systems require rotation to latch, but the Halliburton system does not. By eliminating the need for rotation, potential issues with landing weights and string torsion is eliminated. This also can save a lot of rig time.

Effective Systems
Halliburton Subsea Safety Systems offer dozens of unique features that add up to significant benefits in reliability, flexibility, and efficiency. In short, with Halliburton Subsea Safety Systems, you get peace of mind, knowing that if needed, they will work. And, you have an effective tool to manage rig costs as well.

For more information on exactly how Halliburton Subsea Safety Systems can handle your toughest well control challenges, contact a sales representative today.
Partner confidently with Halliburton because as we continue our leadership with proven, comprehensive, fit-for-purpose well test solutions that are designed specifically for you to assess the financial health of your reservoirs, we’ve always been well testing. We’ll always be well testing. At the heart of Halliburton is well testing.