Sales of Halliburton products and services will be in accord solely with the terms and conditions contained in the contract between Halliburton and the customer that is applicable to the sale.

Control Lines
Encapsulated control lines provide the hydraulic and electric power to remotely operate the SmartWell® system.

Flow Control
An interval control valve (ICV) is used to control the flow of liquid or gas into (injection mode) or out of (production mode) a reservoir interval.

Permanent Downhole Gauges
Quartz crystal transducers provide real-time temperature and pressure from the reservoir interval.

SmartWell® System Reliability
Halliburton has engineered reliability into every aspect of our technologies through our reliability assurance process. And through each step of the process, industry-accepted standards and tools are employed to help ensure the end result delivered to the client will not only function as designed, but survive until the desired value has been achieved. And at the end of the process, any lessons learned are fed back into the system to aid in developing the next generation of SmartWell tools and technology. This approach towards reliability has brought us to where we are - the market leaders in intelligent completions technology.

SmartWell® system technology, introduced by WellDynamics in 1997, was the industry’s first intelligent well completion system to control and monitor specific reservoir zones remotely without intervention. SmartWell system technology helps operators increase ultimate recovery while reducing capital and operating expenditure in the most challenging environments around the world.

Halliburton offers a comprehensive suite of intelligent completion equipment and services, including flow control devices, permanent downhole monitoring equipment, and surface data acquisition and automated control systems. For more information on SmartWell completion systems, contact your local Halliburton representative, or email us at completions@halliburton.com.
SmartWell® completion systems provide an advanced reservoir management approach to optimizing well production through remote monitoring of wellbore parameters in real time. SmartWell system technology also enables remote control of the inflow or outflow from the reservoir - all without the need for mechanical intervention.

In conjunction with reservoir models and prudent reservoir management processes, a SmartWell completion system allows operators to:

- produce marginal reserves
- accelerate production
- increase ultimate recovery
- increase cash flow
- maximize return on investment (ROI)

Most reservoir optimization methods are model-based and are effective only if there is no reservoir uncertainty involved. Adding SmartWell technology brings enhanced functionality through a combination of monitoring and control that helps significantly improve oil recovery, especially in the face of reservoir uncertainty.
Maximizing Rate of Recovery

For improved production in wells requiring gas lift, a SmartWell® system Auto-Gas Lift (AGL) installation helps enable control of a gas cap for enhanced production from a deeper oil zone. Benefits of this application include a reduction in the surface facilities required, lowering cost compared with traditional artificial lift methods. Production can also be optimized with changing reservoir conditions without the need for well intervention or workover.

Customers receive value with the AGL system in the following ways:

- Elimination of well intervention (for gas lift operations using slickline)
- Acceleration of first production
- Reduction of capital expenditures (eliminated compressor package and subsea pipeline)
- Capability to set the gas lift at the deepest point of the well without angle limitation
- Optimized oil production through surface adjustment of internal control valve (ICV) port size

Sales of Halliburton products and services will be in accord solely with the terms and conditions contained in the contract between Halliburton and the customer that is applicable to the sale. © 2013 Halliburton. Todos los derechos reservados.
Managing Uncertainty

As the industry continues to move into deeper waters, the need for higher rated completion equipment in terms of pressure, temperature and water depth is steadily growing, setting the case for increased reliability assurance.

Couple these challenging conditions with the high costs involved in the drilling and completions of these wells—operators need to get it right the first time.

Halliburton companies have participated in the vast majority of all producing deepwater wells, and contributed to most of the world’s deepwater completions. In fact, we installed the first intelligent completion system in the world.

Halliburton SmartWell® intelligent completion system makes it possible to not only complete wells in these extreme deepwater environments, but also addresses the economics of deepwater completions. SmartWell completions can eliminate future interventions and workover requirements.

SmartWell systems enable production from multiple reservoirs via a single wellbore. This reduces the number of wells required for a field development, resulting in lower capital expenditure for drilling and completion costs.

Using selective zonal control, water injection, gas and water breakthrough and individual zone productivity can be effectively managed to increase recovery from the reservoir.
Horizontal Applications

Enhanced Reservoir Control

Advances in drilling technology over the last decade have made horizontal drilling a truly viable field development option. Horizontal wells (cased or open hole)

- enhance the economics of the project
- provide added wellbore exposure to the reservoir
- allow the operator to maximize hydrocarbon (oil and gas) production or injection (water or gas)

However, non-equalized production influx or water injection along the horizontal wellbore is responsible for early water/gas breakthrough in production wells and poor sweep efficiency in injection wells. These problems are a result of reservoir heterogeneity and frictional pressure drop across the wellbore. The inability to shut off a horizontal section due to water/gas encroachment or to control uniform water/gas injection in certain reservoirs is a major limiting factor in today’s horizontal completion designs.

Halliburton provides operators with enhanced reservoir control through the use of SmartWell® completion technology. With a SmartWell completion, the wellbore can be compartmentalized in line with the permeability of the reservoir allowing each compartment to be controlled individually, and also enabling the operator to respond to the inherent uncertainties in reservoir performance throughout the life of the well.

The power of the SmartWell completion in maximizing reservoir performance comes with matching the right completion with the right application.
Advanced Reservoir Drainage

In an effort to reduce well construction costs and maximize reserve recovery, multilateral completions offer the ideal solution. Multilateral wells allow for increased production or injection and improve recovery by enabling maximum reservoir contact with the wellbore.

When looking to optimize production and reservoir management processes, more operators are seeking to complete their wells intelligently. SmartWell® completion systems allow the operator to produce, monitor and control the production of hydrocarbons through remotely operated completion systems, thus maximizing asset value.

The combination of multilateral and SmartWell technologies enables efficient drainage of complex reservoirs and improves long-term profitability. The proven reliability of these systems helps to cost-effectively enable some of the world’s most sophisticated completions. At Halliburton, we have demonstrated our ability to enhance and optimize production through hundreds of successful field applications with these two core technologies.