Halliburton was awarded a multi-services contract from an independent oil company to provide plug and abandonment (P&A) services for 22 wells on five platforms located offshore Canada. The project operations started in December 2017, and were estimated to take approximately three years to complete.

**REDUCE RISK AND COST WITHOUT IMPACT TO SAFETY AND SERVICE QUALITY**

The risks associated with conducting these multi-platform well P&A operations included:

- No local team, equipment, or support available at the tender stage
- Small-sized rig
- Harsh environment
- Need to reduce number of operating days
- Uncertain downhole conditions on several wells
- Contingency equipment requirements for possible downhole scenarios
- Simultaneous operations (SIMOPS) in two separate wells

These challenges had the potential to add significant cost to the project economics. The Halliburton Project Management team was also tasked with leveraging its well abandonment expertise during planning and operational phases.

Given the sensitive nature of the worksite and the potential for incidents on an offshore installation, all possible exposures related to health, safety, and the environment (HSE) were treated with the expected due diligence, and this drove the implementation of scope-specific HSE key performance indicators (KPIs).

**SIMULTANEOUS OPERATIONS DRIVE EFFICIENCIES**

Halliburton was awarded a multi-services contract to provide services involving cementing, abandonment fluids, coiled tubing, slickline, e-line, tubing-conveyed perforating, and completions on a time and materials type of contract. This contract also included third-party nitrogen, milling, tubing handling, and fishing services.

Halliburton’s solution was in the development of a moonpool conversion of the rig with a skidding system to enhance overall operations permitting simultaneous operations of intervention and rig activities on two different wells at the same time.

Alignment was key between all project stakeholders, and common project delivery durations meant that all were accountable for performance and were mutually incentivized to collaborate to achieve. Similarly, alignment for HSE at the worksite drove a safety “one team” culture offshore.
A Halliburton team comprising a project manager, well intervention engineers, a performance
development coordinator, and various Halliburton product service line (PSL) representatives were
assigned to the project. The project manager was tasked with driving project efficiencies, and
recommending and recommending Halliburton technologies and updated industry methodologies.
Successful implementation of the above included:
» Assigning multi-skilled crews to reduce personnel on board (POB) costs including PSL- specific
  supervisors to oversee cross-trained crew members for all operations (cementing, abandonment
  fluids, coiled tubing, slickline, and e-line)
» Implementing perforation, washing, and cementing operations to remediate sustained casing
  pressure and/or poor cement
» Using cement support tools (CSTs) to eliminate a trip in or trip out of the wellbore for a bridge plug
» Utilizing a fluids test kit while offshore to verify allowable specifications for discharge
The Halliburton team captured lessons learned and opportunities for improvement, and leveraged
experience from previous projects to help foster a safe work environment focused on continuous
improvement.

PROJECT TARGETS DELIVERED AHEAD OF SCHEDULE WITH ZERO INCIDENTS
The project was completed safely and efficiently – well ahead of the original planned schedule. It
was delivered under budget and with zero HSE incidents or lost-time incidents (LTIs).
The alignment of all contractors, including Halliburton as the main contractor, and the efficiencies
gained resulted in the project being delivered with 194 days of SIMOPS – ultimately reducing total
project delivery time from three to two years.
The Halliburton team’s ability to work closely with the client to provide applicable solutions and to
implement cost- and time-saving technologies were major contributing factors to the project’s
overall success.
This successful project delivery has allowed Halliburton to gain the first integrated well abandonment
project for offshore well work in Eastern Canada, while adding to our already robust P&A track record.