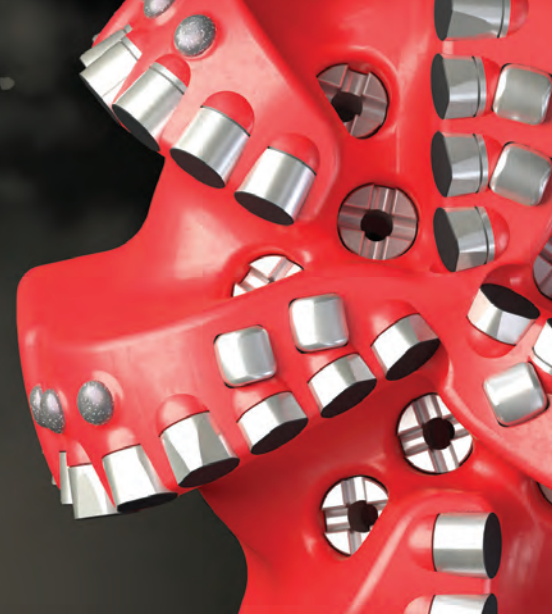


# REDLINE



## Redline Series Drill Bits for Canada

Canada is a region where you must do more than just survive, you must thrive. Our Tektonic™ Redline™ series drill bits withstand the region's harshest drilling environments and formation challenges, going beyond the limits of our competition. We strive to help you complete intervals faster and at the lowest cost possible. Our Redline bits are manufactured with the latest cutter technology, ground-breaking engineering and design, and optional smart bit technology. As the Canadian market moves further into formations that require bits to survive at the limit, our Redline drill bits will push those limits and make your operation a success.

Building upon the Tektonic drill bit philosophy, the Redline series merges new technology, new materials, and new ideas into the premium PDC drill bit for the challenges of the Canadian drilling environment. Specifically developed to enhance drilling efficiency, our Redline bit uses specialized design tools, including computer analysis of torque response, simulations of heat generation and cutter temperature, walk rate comparisons, and material enhancements to maximize downhole performance.

The Redline series bits utilize our industry-leading ION+™ cutters, which are developed from innovative lab testing techniques that simulate formation-specific cutter damage. High-performance diamond grades are fine-tuned to overcome thermal-abrasion damage caused by hard sands as well as impact damage related to chert or tough stringers. Additionally, our ION+ 4DX cutters feature a multifaceted cutter geometry that helps to disrupt cuttings, and the nonplanar face focuses energy at the point of failure initiation to increase cutting efficiency and minimize thermal stresses on the cutting structure. Relying on an iterative design process, the Redline bit's cutter layout targets the most thermogenic cutters to maximize heat dissipation and minimize thermal degradation, extending bit life and improving ROP.

Improved tool-face control is a primary focus of our design engineers, and when your application calls for it, our Redline bit can reduce the risk of torsional oscillations through enhanced depth-of-cut control. Using patent-pending TORC™ components along with an innovative depth-of-cut analysis, our Redline bits have provided improved directional control and reduced sliding times in numerous Canadian drilling projects.

Going beyond the limits of drilling technology, our @Bit suite of smart technologies uses a modular port system to acquire accurate at-bit data. The @Bit smart technology provides tri-axial vibration, RPM, and temperature data, and the platform is designed to evolve, allowing the Redline bit to collect usable data that improves performance for the entire drilling system.

To find out how our Redline series bits can help achieve your drilling objectives, contact your local NOV representative or go to [www.nov.com/drillbits](http://www.nov.com/drillbits).

