

NEAR BIT INCLINATION MOTOR & CONTINUOUS INCLINATION ABOVE THE MOTOR IMPROVE STEERING DECISIONS

Pacesetter Directional Drilling delivers on technologies aimed at allowing quick interpretation for optimized well positioning

CHALLENGE

Accurately drill a build and lateral monobore well, placing the lateral within targeted Ellerslie formation and optimizing position in the target zone.

SOLUTION

Use Pacesetter’s Near Bit Inclination Motor coupled with dynamic inclination measurements right above the motor enabling the precise placement of the well within the target Ellerslie reservoir.

RESULTS

- Successfully drilled multiple wells achieving one run per well with no complications.
- Saved operator on drilling time, increasing ROP by 12% on average compared to the first well by minimizing slide intervals with lower ROP.
- Minimizing doglegs in the build section to meet operator’s requirement.

Maintain directional control in build & lateral sections with reliable technology

The operator is drilling monobore wells, build and lateral sections, in Ellerslie formation in a Viking Oil play. To navigate within the lateral and stay in the target zone, the operator used Pacesetter’s Near Bit Inclination (NBI) Motor providing inclinations 1 meter behind the bit coupled with Continuous Inclinations located 11 meters behind the bit.

The NBI sensor’s close proximity to the bit coupled with dynamic inclination measurements above the motor while sliding and rotating helped reduce the reaction time for making critical steering decision while maintaining the wellbore in the target zone.

Accurate steering through robust inclination measurements

Enhanced directional control and confidence in time-critical decision making were made possible through the combination of NBI Motor measurements coupled with dynamic inclinations allowed for maximum in-zone exposure. The in-depth information gained from the combined technologies helped the operator correctly determine the position and accurately direct the drilling, staying within the target interval.

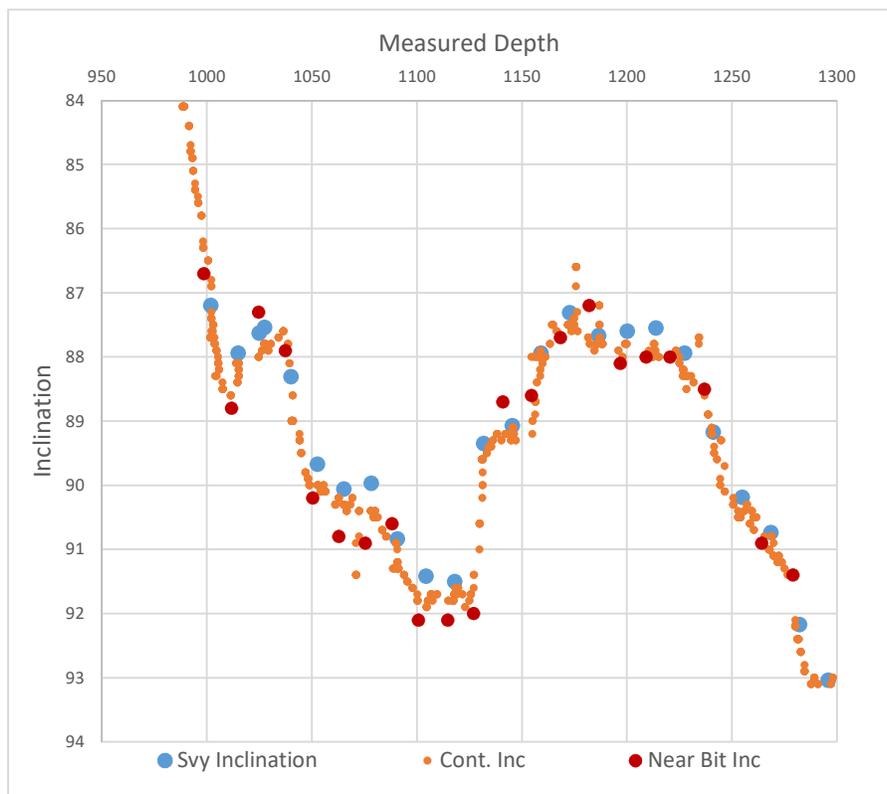


Figure 1 Zoomed-In view of portion of lateral section showcase accuracy

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Excellent directional control maintained

The enhanced system provided by Pacesetter resulted in an improved well trajectory and placement within the target reservoir with improvements achieved progressively while drilling the build and lateral sections of each well. The confidence gained through the use of the combined technologies enabled average ROP to be increased incrementally well after well, by minimizing slide intervals with slower ROP, averaging a 12% overall ROP increase for the 5 wells drilled successfully with no reported issues.

The capability of obtaining high resolution inclination measurements at various positions along the BHA has a multitude of applications in drilling and completions by getting a clearer picture of the tortuosity of the wellbore.

The graph below displays the well trajectory of one of the wells drilled from kick off point to toe of the well showing the alignment of all three inclination measurements, Near Bit Inclination, Dynamic Inclinations and Survey Inclinations. The quick updates of all inclinations were made possible through Pacesetter’s XEM EM System with dynamic inclinations transmitted every 20 seconds.

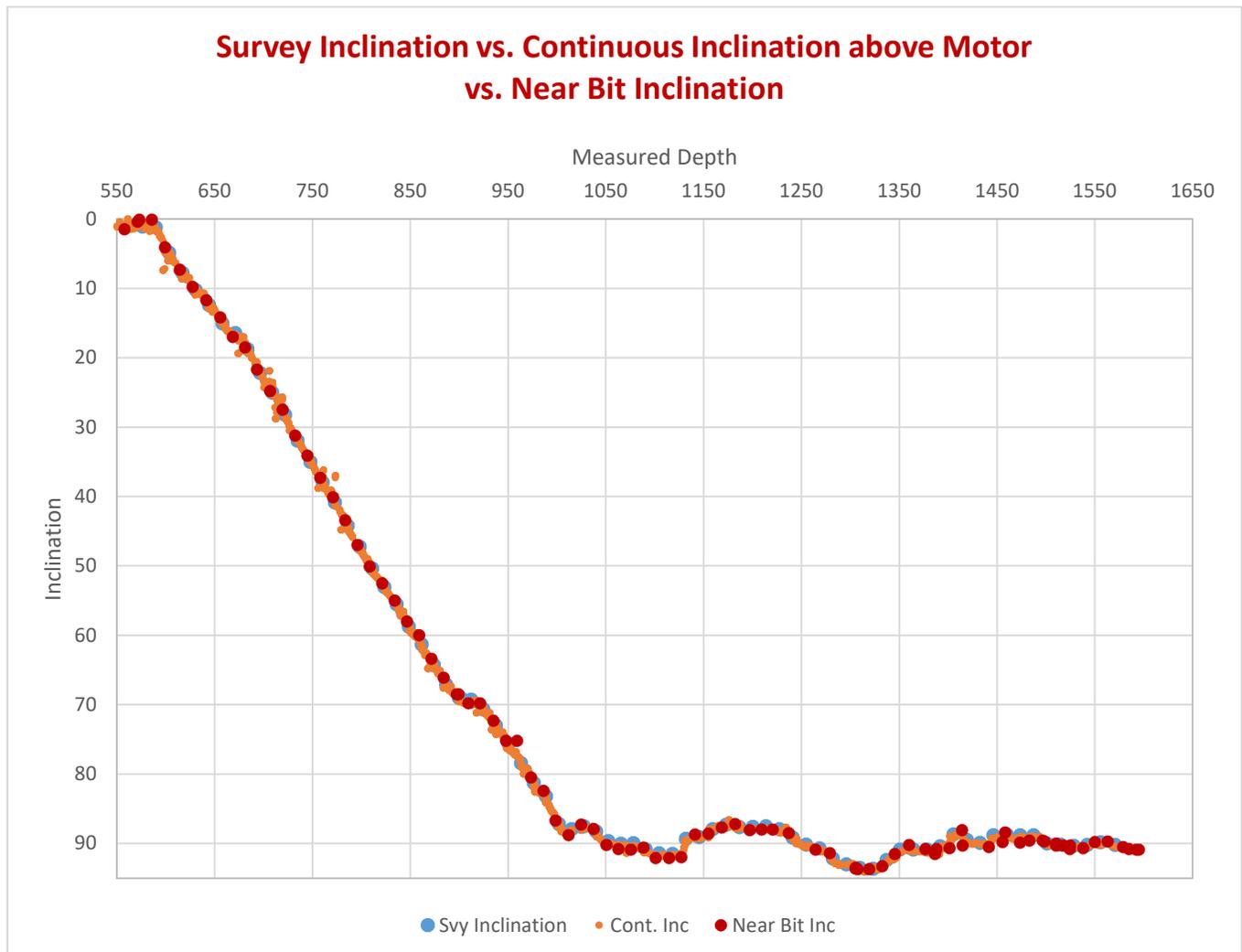


Figure 2 Near Bit Inclination and Continuous Inclination measurements illustrate wellbore tortuosity not seen with surveys