



CHALLENGE

To realize overall well construction improvements

SOLUTION

Deploy a rig equipped with AlphaAutomation™ technologies

RESULTS

Average Drilling Productivity improvement of 9.2%

Time savings of ~1.2 days /well representing cost savings of ~\$56K/ well

Overall cost saving of over \$1.16M for 2021

AlphaAutomation™ Delivers Drilling Performance Improvements and Flat Time Efficiencies in the Montney

OVERVIEW OF CASE STUDY

An operator was initially using two non-Alpha enabled Precision rigs for their drilling campaign targeting the Montney formation in the Wembley area of Western Canada. In consultation with Precision and based on an offset analysis conducted by an Alpha Optimization Engineer, the operator switched to an Alpha enabled rig to improve their overall well construction performance. All three rigs in this study had the same specifications.

ALPHA AUTOMATION™ PERFORMANCE RESULTS

By switching to an Alpha enabled rig, the operator realized significant gains in drilling productivity and flat time efficiencies when comparing H2 2020 performance of the two non-Alpha rigs versus the 2021 performance on the Alpha-enabled rig. The highlights of the results are:

| | | |
|-------------------------------|--------|--------------|
| ✓ Drilling Connection Time: | -16.2% | |
| ✓ Surface Flat Time: | -16.3% | See Figure 1 |
| ✓ Production Trip In Rate: | 8.6% | See Figure 2 |
| ✓ Production Trip Out Rate: | 14.6% | |
| ✓ Production Casing Run Rate: | 9.1% | |
| ✓ Production Flat Time: | -11.7% | |

Overall, these results amounted to 9.2% (~1.2 days) per well of drilling productivity saving the operator an average of \$56,000 per well throughout the 2021 drilling campaign.

CONCLUSION

Alpha-enabled rig with the same hardware specifications as the two non-Alpha enabled rigs, allowed for an overall cost saving for wells drilled in 2021 of \$ 1.16M. This performance saved the customer ~1.2 days/well in 2021.

SURFACE
FLAT TIME

16.3%

Average reduction using
AlphaAutomation™

BACK
REAMING ON
CONNECTION

24.5

Minutes per well time
savings

TRIP RATES

4.2

Hours per well of time
savings for combined build
and lateral BHA roundtrips

FIGURE 1

Compares the combined non-Alpha average surface flat time for 2020 pads against 2021 individual pad results using the Alpha-enabled rig. Surface flat time using AlphaAutomation™ was reduced by 16.3 %, or an average of 4.7 hours/well. An additional average of 24.5 minutes/well was saved through reduced back reaming on connections.

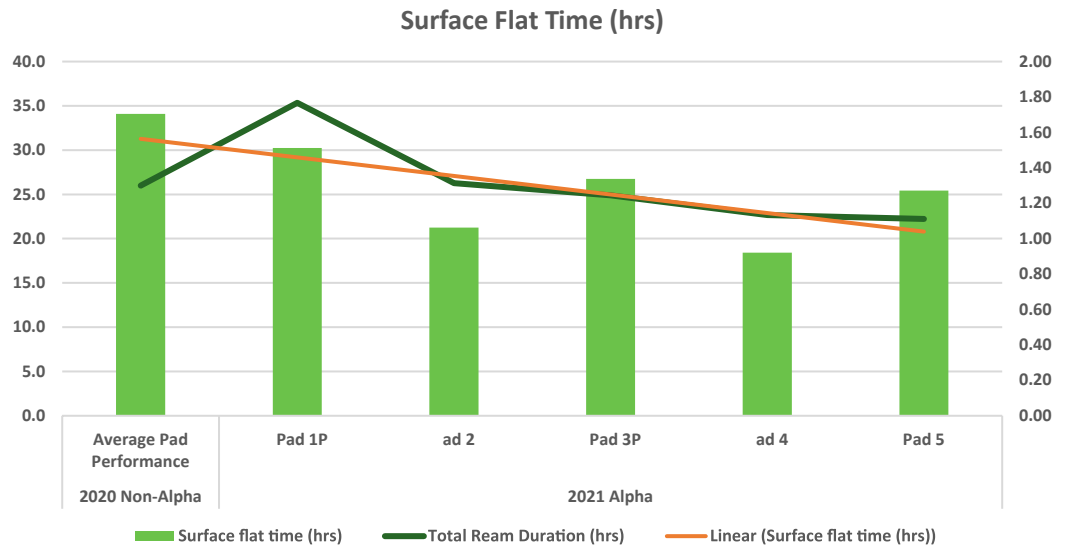


FIGURE 2

Trip rates for the production section were increased by 8.6 % and 14.6 % for trip in and trip out, respectively. The figure below represents round trip times for the build and lateral section BHAs with average time savings of 2.4 hours/well and 1.8 hours/well, respectively.

