

CHALLENGE

To improve well construction performance in the Delaware Basin using AlphaAutomation™

SOLUTIONS

AlphaAutomation installation at the rig

A dedicated Alpha Optimization Engineer to develop the drilling parameter roadmap and provide on-going support throughout the project

RESULTS

Set drilling performance benchmark for Delaware Basin 1.5 mile lateral wells at 1280 ft/day.

20% improvement in rate-of-penetration over competitor best-in-class wells

AFE time savings of 6.3 days resulting in \$441K savings for the operator

Alpha™ Technology Delivers Record Performance in the Delaware Basin

Delaware Basin Case Study

OVERVIEW OF CASE STUDY

An operator in the Delaware Basin contracted Precision Drilling to deploy AlphaAutomation on their pad drilling program to improve drilling performance. This deployment included the installation, setup and testing of the AlphaAutomation and Apps platform by Precision Drilling's multi-disciplinary Alpha support team. Concurrently, an Alpha Optimization Engineer conducted a detailed offset well analysis to develop an appropriate drilling parameter roadmap outlining set points and operating ranges for each of the core apps integrated into the AlphaAutomation platform.

ALPHA AUTOMATION CONTINUOUS IMPROVEMENT

AlphaAutomation delivered progressive results for the operator with a key component being the on-going support of the Optimization Engineer in analyzing and recommending adjustments to further refine the drilling parameter roadmap in real time. As a result, the step-change drilling performance improvement was observed from the first well which was on par with the operator's AFE target, to the second well which exceeded the operator's AFE target, to the third well which set an operator and a basin record for 1.5 mile lateral wells. The continuous improvement demonstrated by the Alpha-enabled rig is shown in Figure 1 with a drilling productivity increase of 55% from 825 ft/day to 1280 ft/day leading to 6.3 days in AFE savings from spud to rig release.

The record-setting Alpha well shows a marked improvement over best-in-class wells from competitor rigs in the area, including the previous record well, whose average drilling productivity was 1066 ft/day. At 1280 ft/day, the Alpha record well exceeded competitor performance by 20%, as shown in Figure 2.

CONCLUSION

AlphaAutomation with automatization was able to meet and exceed the operator's AFE target for constructing 1.5 mile lateral wells in the Delaware Basin through well-to-well continuous improvement resulting in setting a new record for the basin.

ALPHA PERFORMANCE

55%

Continuous improvement
in drilling productivity from
spud to rig release

AFE RESULTS

6.3

Days AFE Savings

RATE OF PENETRATION

20%

Improvement over best-
in-class area offsets



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HIGH
PERFORMANCE
HIGH VALUE

FIGURE 1

The top part of Figure 1 shows the continuous improvement in drilling productivity from 825 ft/day to 1280 ft/day. The lower part of Figure 1 shows how the Alpha wells compare to the AFE target and to the previous record well for the area.

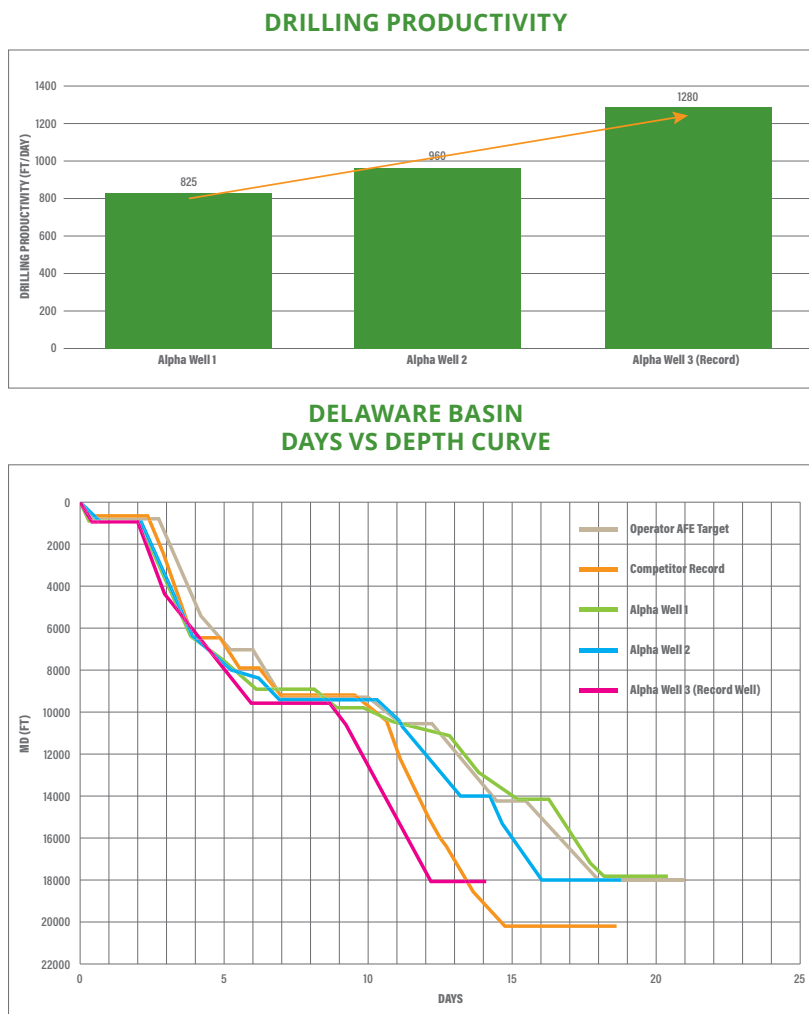


FIGURE 2

Figure 2 compares the best-in-class drilling productivity of competitor rigs to the performance delivered by Precision's Alpha rig. Both competitor rigs show a consistent level of performance averaging 1066 ft/day. The Alpha rig attained drilling productivity of 1280 ft/day, an improvement of 20%. All wells are located in the same area, follow similar well plans and target the same formation.

