

3D Machine Control Feller Buncher Testing

OVERVIEW

Velocity Group (Velocity) successfully tested the use of a 3D Machine Control (3DMC) system in conjunction with a feller buncher for application in oil and gas construction operations. Currently lease, access, and pipeline right of ways that require logging also require the determination and flagging of boundaries in the field before construction. With the use of 3DMC the flagging portion of the construction process can be eliminated resulting in increased safety, reduced or eliminated trespass and decreased construction expenses.

EQUIPMENT

Velocity modified and installed an off the shelf 3DMC system onto a Tigercat 860C feller buncher. The 3DMC system consisted of four tilt sensors, two GPS antennas, one GPS receiver and one control box. Custom protective sheathing and mounting locations had to be manufactured and installed.



**“Founded on Safety, Efficiency,
Technology and Innovation.”**



Velocity Geomatics Inc. was established in October of 2013. The company was founded by likeminded individuals that strive to bring the best service to clients by bridging the gap between technology and industry.

Velocity Group

Chris Chiasson

President

104, 11302 98 ave

Grande Prairie, AB T8V 8H4

P: 780-933-4943

E: Chris@velocitygroup.ca

www.velocitygroup.ca

FIELD TESTING

Field testing of the system was performed southwest of Grande Prairie, AB. The terrain was relatively flat and covered with poplar to an average diameter of 25cm. Approximately 1250m of right of way along the boundaries of the quarter section and the future development area were cleared to widths between 8m and 15m. The boundary lines were not flagged prior to tree falling.

While tree falling, the operator was able to position the feller buncher blade to cm accuracy. Traditional survey methods were used to confirm that the feller buncher did not remove any trees outside the designed boundaries. The feller buncher operator provided positive feedback on the use of the system and felt that any learning curve or reduced efficiency from the new work process was minimal.



Setting up the feller buncher and the survey control for testing.

Construction Services

3D Machine Control:
Training/Support, 3D Data Preparation and Modeling, Quantity Takeoffs/ Volumetric Supervision

Construction Surveying:
Pile/Grid Line Layout, Building Services, As-built Surveys, Volumetric Surveys, Highway Layout, Topographic Surveys

Consulting Services:
Machine Control Implementation and Integration, Survey Technology and 3D Machine Control Applications in Industry

CONCLUSION

The existing oil and gas field construction process is extremely dangerous because of the need for surveyors to hand cut boundary lines for flagging prior to entry. Velocity Geomatics, along with Dakota Contracting, has created a one of a kind system. The ability to integrate a 3DMC feller buncher into the construction process will not only increase safety, it will also reduce or eliminate trespass, and decrease construction costs. Integrating 3DMC on a feller buncher extends the efficiencies into logging operations and allows seamless flow into the dirt work. We look forward to further testing with 3DMC and successful completion of future projects safely and efficiently.