

## Multiwell Pad Fracturing

### Business Needs

To be successful in today's oil and gas industry, operators must balance a number of variables, including the distinct characteristics of the geography, the formation, and the treatment at hand. The Horn River basin, a dry shale gas play located in the northeast corner of British Columbia, requires large-scale operations. The geological properties, remote location with challenging logistics, and the size of operations require a careful balance between process and resources in order to remain economic. With this in mind, Trican was approached for a multiwell pad project, consisting of 335 frac treatments and simultaneous operations running 24 hours a day. The customer set a performance target of 68% pumping efficiency (percentage of available time that frac pumps are pumping frac fluid), with the project to be completed in 76 days.



Through strategic planning and collaboration with the customer, Trican completed the job 24 days ahead of the 76 day base target schedule and 14 days ahead of the 66 day stretch target schedule.

### Trican Solution

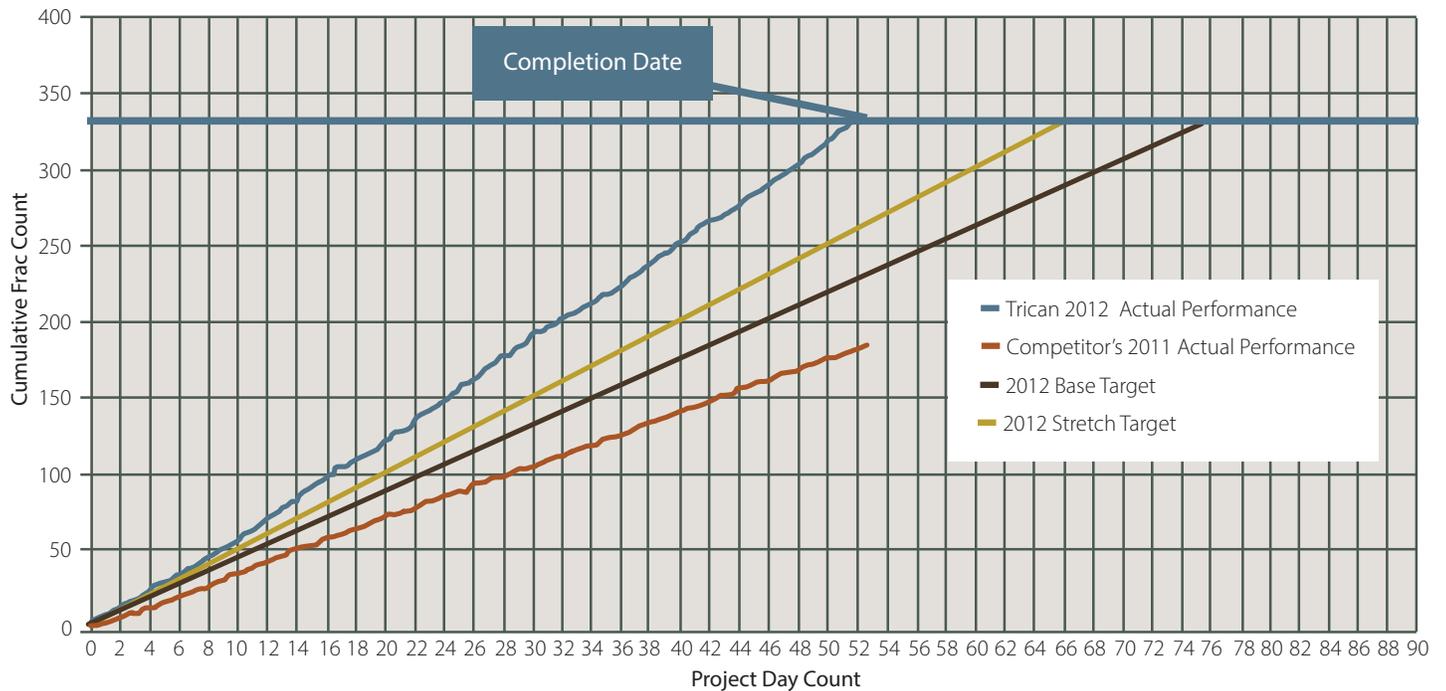
To meet the customer's target, careful planning and strategic utilization were essential. The pad layout was developed several months ahead of the project and involved a team approach for every service that would be working simultaneously. With up to 50 Trican units onsite, it was imperative that location and utilization details be included for each one, as well as mitigation plans for any challenge or obstacle that could occur during the operation. Trican's extensive industry experience and expertise in the area provided the knowledge necessary to develop an operational plan that would minimize downtime (the total amount of time between fracs) and lower non-pumping time (the amount of non-pumping time due to Trican maintenance and pressure testing) costs. With a comprehensive plan in place, the team was ready to execute.

Trican's careful planning with the customer and other service providers, and months of preparation achieved an 86% pumping efficiency (physically pumping a frac into a wellbore for 86% of the available pump time), far exceeding the customer's target. With a high of 1,700 tonnes (3.7 million lbs) of proppant pumped per day, and a maximum of 900 tonnes (2 million lbs) of storage, logistics management played a critical role. An average of 30 minutes switch-over between fracs further increased project efficiency. With 76 days allocated for the project by the customer, Trican's detailed process allowed the job to be completed 24 days ahead of the base target, and 14 days ahead of the stretch target schedule. This resulted in the operator saving more than \$10 million on the fracturing project.

### The Trican Advantage

The customer came to Trican with a heightened need for operational efficiency in order to maintain favourable economics in this shale development. After investing time and expertise towards a comprehensive planning process, Trican was able to not only meet expectations, but exceed them. With downtime minimized and an industry leading pump operating time, the job was completed ahead of schedule, operational efficiency was maximized, and the customer was able to meet the challenges of the play, with significant cost savings.

## Frac Performance



## Case Study Snapshot

**Date:** 2012

**Project Area:** Horn River Basin

### Challenges:

- Large-scale simultaneous operations
- Remote location with challenging logistics
- High degree of operational efficiency required
- 68% pumping efficiency (percentage of available time that frac pumps are pumping frac fluid)
- Base target completion in 76 days and stretch target completion in 66 days

### Trican Solution:

- Extensive planning months prior to project execution
- Strategic utilization of equipment

### Results:

- 86% pumping efficiency, far exceeding the target
- Project completed 24 days ahead of base target (76 days) and 14 days ahead of stretch target (66 days)
- Minimized downtime and non-pumping time
- Operational efficiency was achieved, resulting in over \$10 million cost savings for the customer



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