



XI TECHNOLOGIES INC.

# **XI Case Study:**

**How to use tour data more effectively to cut drilling time and costs in the WCSB.**

**By XI Technologies**

*Please note: The opinions expressed in the paper do not represent technical guidance but are intended for information and to stimulate discussion only.*

## A Data-Driven Solution for a Common Drilling Challenge

*In the current market, drilling teams are leaner than ever and trying to do more with less; less time, fewer resources, less budget. One Drilling Project Manager was able to cut his research time by almost 80 per cent and then assemble a team of the most successful service companies in his target area. This allowed him to push the technical limits of his drill program by knowing exactly what to expect. Troy Anderson, a former Drilling Project Manager for Apache Canada Ltd (2004 – 2017), shares how using XI Technologies' TourXchange data and Offset Analyst software helped him make key drilling decisions that delivered a 6-well pad project 27 days ahead of schedule, and almost \$3.4 million under budget.*

### The Challenge: Drill planning in an area where you have little or no historical data

In November of 2015, while working at Apache Canada, Troy was tasked with planning a six-well Montney pad in the Ante Creek area. While Apache had data for previous drills in many other areas across the WCSB, they had only drilled two wells in the Ante Creek area and needed more data upon which to base a drilling plan. Without access to offset data, Troy and Apache would have to take a trial-and-error approach to the drilling project, which is a costly and inefficient process.

## The Solution: Use XI's drilling research tools to gain intelligence

Troy had experience with XI's TourXchange drilling database and Offset Analyst drill research software. The TourXchange contains approximately 160,000 fully digital tour reports from across the WCSB and is the most comprehensive enhanced drilling database in western Canada, with representation from 70 E&P companies.

### More Research, More Data Points, Less Time

Using XI's Offset Analyst software to query the TourXchange, Troy was able to glean valuable insights from offset well data in the proposed drilling area. This access to digital tour information meant he was able to easily view the information he required on drilling fluids, bits, motors, well design, and drill problems encountered in the area. Troy estimates that the task of searching and then reviewing the relevant tour data would have taken about 100 hours if done manually. Using Offset Analyst, he was able to review far more data and complete the research and planning phase for this project in about 20 hours.



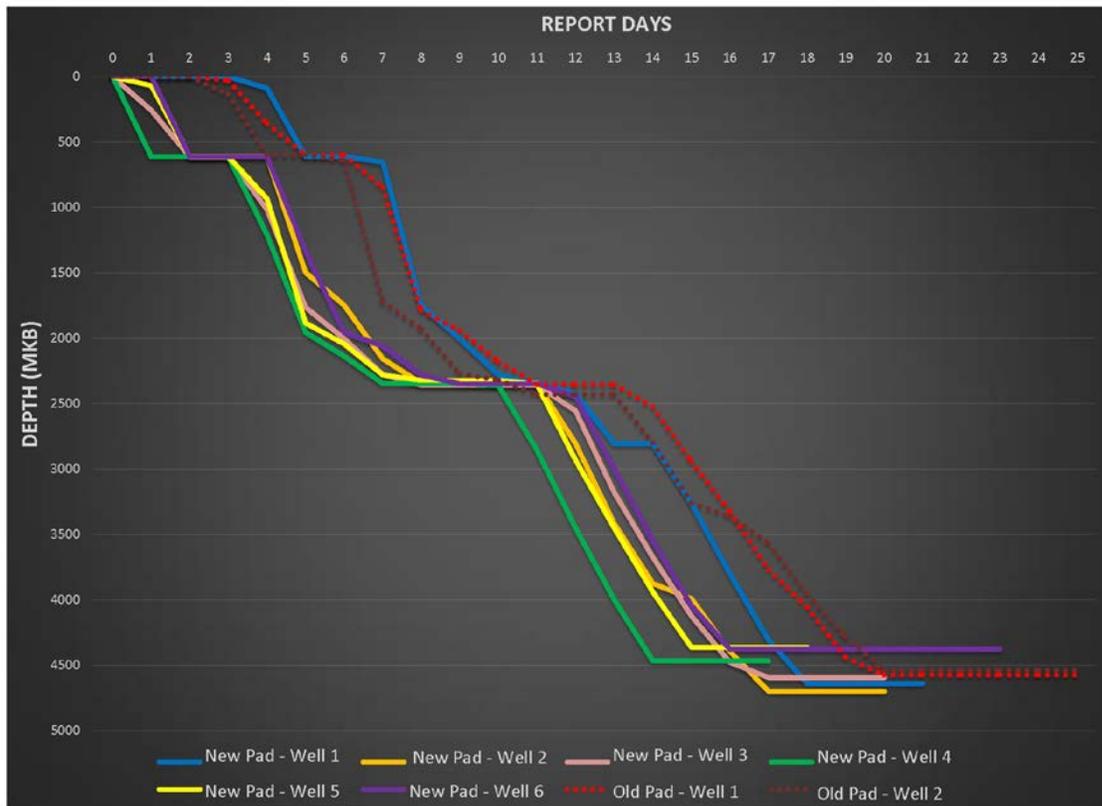
“Typically, starting a drilling program with no offsets means sending out requests for bids to a broad range of service companies,” Troy commented. “This gives you a basis to begin narrowing down the choices. But with Offset Analyst and the TourXchange, I was able to filter digital tour reports and offsets from other operators in the area to learn what service companies they had used, and which ones were the most successful. With about a half-hour’s worth of research, I was able to identify trends and pick out the service companies I knew would be the best fit.”

### Streamlined RFP Process

With some quick queries to the database, Troy determined what bits were being used in the area and noted that they were different than what Apache had used on their previous drills. This research immediately narrowed Troy’s bid process down from ten companies to three. Choosing the right bit company meant Apache saw improvements and efficiencies in all hole sections, and particularly in the lateral section, where they doubled their ROP.

In addition to streamlining the RFP for bit companies, Troy was also able to determine which mud companies were associated with the most successful wells. Armed with this information, he was able to construct an RFP process to select a mud company that had extensive experience on similar wells, was working in the area full-time, and had staff and product at the ready.

### Ante Creek Montney Depth vs Days



*Offset Analyst provided quick access to data and insights that helped Apache's drilling team select the right suppliers and equipment to bring the 6-well pad project (solid lines) in faster than Apache's previous wells in Ante Creek (dotted lines).*

### Spot Problems Before They're Problems

The ability to quickly and easily analyze digital tour data also helped Troy spot drill problem trends in the area. As a result, he was able to fine-tune his drilling plan and make some early decisions that saved time and money. One potential problem was a coal interval in the build section that had given other companies trouble on previous drills. Digital tour data showed that those who drilled at normal parameters through this section increased risk with hole instability and wash-out. Learning from their experience, Troy and Apache adjusted drilling parameters through the 60-meter coal section, control-drilling through it to avoid such problems.

No one wants to reserve and pay for extra equipment that might sit idle or go unused on the drill site. Troy credits his research in Offset Analyst with helping him reduce unnecessary spending on equipment. The

research helped him anticipate problems that he might encounter along the way, and what equipment he would need at specific points along the drill. After thoroughly researching offsets in the area and drawing on his own project management experience, Troy opted to utilize a walking rig to batch-drill the six-well pad. This proved very efficient. The drilling crew started with the surface holes, walking the rig from one hole to the next hitting all the intermediate sections. Then they walked the rig back, doing each lateral section in turn. Concentrating on the same hole section for all six wells allowed for cost savings because it allowed field personnel to concentrate on one hole section at a time, improving efficiencies from well to well. Employing one set of equipment at a time, with fewer rentals and a higher utilization rate, helped realize further cost savings.

### Ante Creek Montney Cost vs Days



*Digital offset research resulted in a highly efficient drill plan and execution. In the above graph of Cost vs Drill Days, the new wells in the 6-well pad (solid lines) were all drilled in fewer days and at significantly less cost than Apache's two previous wells in the Ante Creek area (dotted lines).*

“You could argue that the same drill research could be done using traditional methods,” Troy concedes. “That would involve ordering tour sheets for each of the offset wells that you want to analyze, and manually combing through 85 plus pages on each one just to extract the data that you need. This kind of manual grunt work can extend the drill research phase by days. And of course, companies generally aren’t consistent in submitting their data, so there are varying degrees of depth and information from one tour report to the

next. With Offset Analyst, I was able to not only extract the tours digitally, but then to filter on almost any parameters I wanted so I could spot trends and look for efficiencies.”

Because drilling technology changes so frequently, it is vital to be able to filter for the most recent wells to ensure you’re not building your plan on old technology and old data. The benefit of having digital tour data at your fingertips through TourXchange is that you can easily weed out old data. For example, a typical research workflow might be to perform a custom filter based on search radius, look for spud dates no later than a certain date, and go from there. This eliminates time wasted pouring over tour sheets that contain data that isn’t the most current.

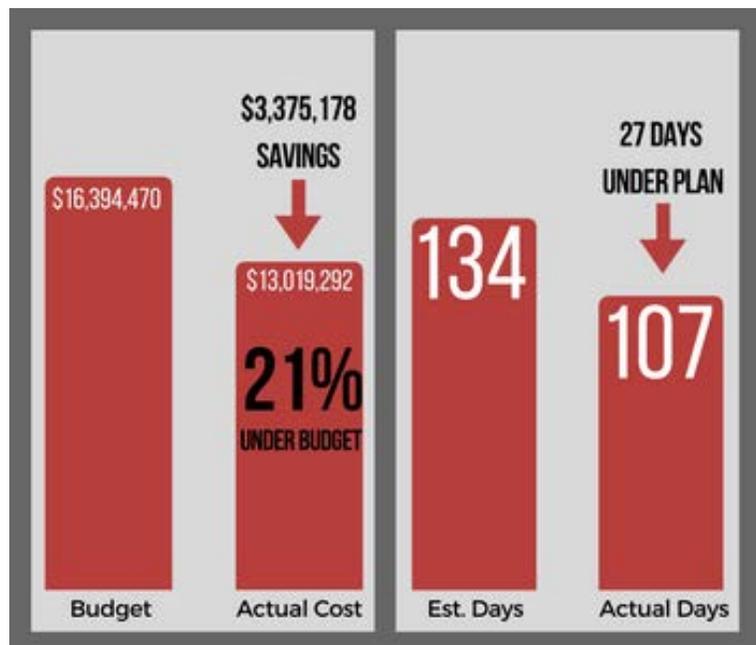
## The Results: 27 days ahead of AFE schedule, \$3.4 million under budget

Troy Anderson’s use of TourXchange digital data and Offset Analyst research tools while at Apache Canada allowed him to significantly minimize his research time, allowing him to spend more time on engineering and project management work, which is where he was able to add the most value.

Drawing on data from the two previous wells that Apache had drilled in the area, along with the offset data pulled from other operators in the TourXchange, Troy was able to quickly put together drilling curves, estimates, and a solid drill plan for the proposed six-well pad. This resulted in a huge win where Troy and his experienced Field Personnel came in **27 days ahead of the projected AFE, and nearly \$3.4 million under budget.**

“The drilling data in XI’s TourXchange is a resource that’s designed to make all producers in the WCSB more efficient,” says Troy. “There are very few companies that can’t benefit from joining the TourXchange. The better data you have, the better decisions you can make, and these days even small efficiencies can mean big savings.”

**Project Performance Summary**



## About TourXchange and Offset Analyst

*XI Technologies' TourXchange and Offset Analyst help Drilling Engineers make the best use of their time and experience while optimizing efficiencies and cost savings for your drilling program. To learn more about TourXchange and Offset Analyst or request a demo, visit [www.xitechnologies.com](http://www.xitechnologies.com), email [sales@xitechnologies.com](mailto:sales@xitechnologies.com) or call 403-296-0964.*