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Operators Electronically Sharing Tour Sheet Drilling Data

By Pat Roche

If a company plans to drill a well in an unfamiliar area, it would help to know the experience of those who've already drilled there.

Such information is publicly available, but until recently it hasn't been easily accessible. It's on the tour (pronounced tower) sheets, which are detailed drilling diaries -- from spud to rig release.

Tour sheets include information such as mud weights and bit types, and important comments from the rig manager -- all recorded on a daily and sometimes hourly basis.

This information is critical to well planning, performance benchmarking and analysis of wells drilled. By studying the tour sheets for offset wells, a drilling engineer can, for example, learn that certain pitfalls were encountered at 1 200 metres. Or the data may reveal why a well was drilled much faster than nearby wells.

In Western Canada tour sheets are filed with regulators and eventually become public. But there's traditionally been a practical barrier to accessing this data, which can be so useful for well planning. Few people have time to physically go to the Alberta Core Research Centre in northwest Calgary and spend hours sifting through voluminous paper records for offset wells.

Finally, there's a better way -- at least for a growing number of wells. Calgary-based **XI Technologies Inc.** pioneered the TourXchange, a digital system that provides tour sheet data at the click of a mouse.

Already the system has 37,320 wells from across Western Canada, but the total will grow significantly because XI is in talks with more operators -- including major producers -- to add their data, said **Andy Newsome**, manager of business development for XI Technologies.

How it works is companies who join the TourXchange gain access to each other's tour sheet data -- provided the wells aren't confidential.

The TourXchange database is hosted and maintained by XI.

Even before the TourXchange was conceived, data capture was already being done by companies that collect well information during drilling. These include **Pason Systems Inc.**, **Nabors Industries Inc.**'s RigWatch division and **National Oilwell Varco, Inc.**'s M/D Totco division.

TourXchange began as a pilot test in late 2007 with four companies -- **Devon Canada Corporation**, **ConocoPhillips Canada**, **ARC Energy Trust** and **EOG Resources Canada Inc.** -- sharing their digital tour sheets for a 130-township area near Grande Prairie.

After a successful pilot the project went commercial with the ability to take digital tour sheet data from across Western Canada. XI says 39 operators are currently contributing tour sheet data for wells drilled in Western Canada.

"It works well," said **Jeff Arvidson**, a drilling engineer with Devon Canada who has used the system.

Arvidson and Newsome described the TourXchange in a presentation to last week's annual conference of the **Canadian Association of Drilling Engineers (CADE)** and the **Canadian Association of Oilwell Drilling Contractors (CAODC)**.

The ability to study tour sheet data without leaving your office isn't the only advantage of the electronic format. It also eliminates the need to type in data from paper.

For example, operators often benchmark their drilling performance against a pacesetter well in the same field. If the information is on paper, it has to be keyed into a computer before any analysis can begin.

"The nice thing about (the TourXchange) is if you have a well that you want to compare against, you don't have to go through and type in the days versus depth -- which can be a lot of entries," said Arvidson. "It's just copy and paste."

Even if the TourXchange only has a fraction of all Western Canada's wells, "it's obviously a bigger database than any one company is going to have," Arvidson noted.

Newsome said participating operators -- especially the four who took part in the pilot -- deserve much of the credit because without their participation the system couldn't exist.

Also, he praised the CAODC for establishing a standard file format for its data. Without a common data standard, the TourXchange couldn't operate.

Newsome said the goal is to improve drilling efficiency by making it easier to share information that is already publicly available on hard copy.

While cutting drilling time and costs is an industrywide objective, some companies may see their ability to do so as a competitive advantage. Newsome acknowledged XI hasn't yet convinced Canada's top driller, **EnCana Corporation**, to join the TourXchange.

Newsome understands and respects EnCana's reticence, but believes that even for the top operator there is value in easy access to other companies' tour sheets. And he points out that anyone who really wants to see EnCana's tour sheets can still go to the core research centre and look at the hard copy. "We're not sharing any secrets here," he told the Bulletin.

However, he said the project would still be viable without EnCana.

"Clearly our job is a little tougher ... but it doesn't stop us," Newsome said, "because we've got a lot of really reputable companies out there that really are quite interested in what the TourXchange can offer."

In addition to the first four companies, XI says the current 39 participating operators include **Apache Canada Ltd., Nexen Inc., Suncor Energy Inc., BP Canada Energy Company, Bonavista Energy Trust, Pennwest Energy Trust, Galleon Energy Inc., Storm Exploration Inc., Birchcliff Energy Ltd. and Paramount Energy Trust.**

About 50 service companies have signed on as customers for the data.

Tour sheet data can be sorted by drilling time, non-productive time or by many other fields. "There's really no limit to what we can build," Newsome said.

Meanwhile, at least for now, tour sheets that exist only on paper won't be digitized. While XI has investigated the possibility, it so far hasn't found an efficient or economic way to convert the massive amount of information on the paper tour sheets to digital format.