

New Technology magazine

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• the first word on oilpatch innovation

Create a better oil and gas exploration or production technology and the industry will beat a path to your door.

For the second year, Technology Stars recognizes those innovations and inventions that have risen to the top and are carrying the industry forward to a bold new future.

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When Time Is Of The Essence

Software specific to industry calls out to public safety

A Better Build

Software solution eases the pain of construction contractor field data tracking

VISAGE information software: a new tool in exploration

Story: Elsie Ross



Best Exploration Technology

VISAGE Information Solutions

mining for data

Launching a new oil and gas company has always been a challenge, but an innovative Calgary-based software company is helping to reduce some of that initial exploration risk.

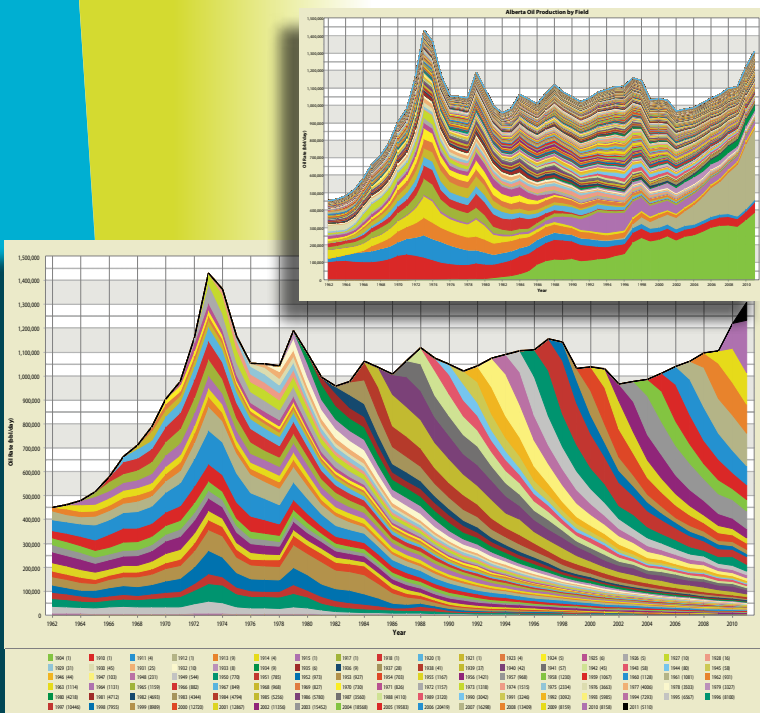
The tool developed by VISAGE Information Solutions allows for the rapid access, analysis and visual interpretation of more than 710,000 wells in the Western Canadian Sedimentary Basin.

Elkhorn Resources Inc. used that visual analytics technology to screen exploration areas in building its business plan, says Corey Galbraith, vice-president of engineering, who nominated VISAGE as a Technology Star.

“It’s a very powerful tool but very user-friendly,” he says. “With the click of a button, we were able to analyze different play types and technical concepts utilizing all publicly available information and all in real time. The VISAGE product enabled us to make quick and accurate decisions that were thoroughly researched and well-founded.”

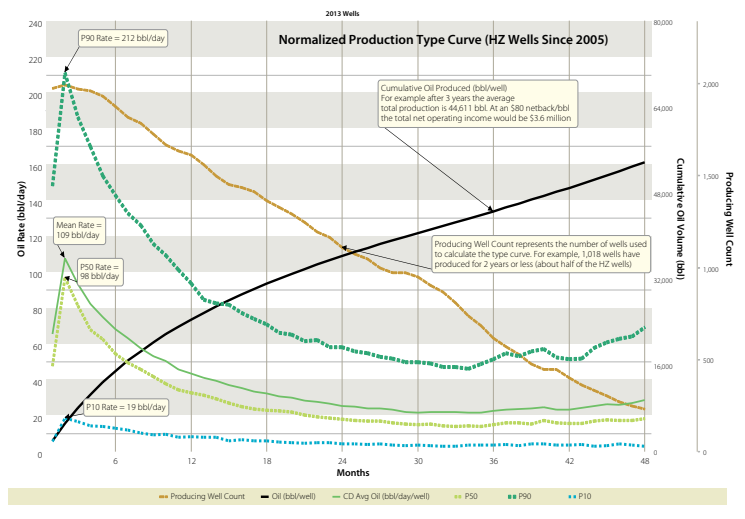
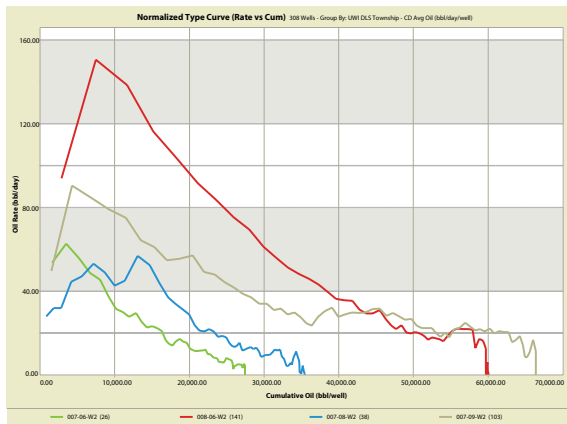
The start-up company had identified the geographic area in which it wanted to operate—Manitoba, southeastern Saskatchewan and North Dakota—and used the software to look at a number of different plays from an engineering perspective to complement the geology. For example, Elkhorn was able to determine the average type curve for a well in the Spearfish play in different settings in order to decide if it was going to become a Spearfish player.

In the end, Elkhorn narrowed its focus to an eight-township area in southeastern Saskatchewan. It identified an area with available land that was prospective for the application of the technology to drive strong economic returns. As an operator, Elkhorn uses the technology to focus in on a particular area and to give it a better understanding of the economics for a potential play type with the actual numbers to back it up, based on public production data.



Top: Alberta oil production by field.
Bottom: Alberta oil production by on-stream year.

The type curves, which can be used for building business plans, are good comparison tools and give a representative view of a chart's performance. Chart at right demonstrates statistical methods to quantify the range of possible outcomes.



Images: VISAGE Information Solutions; data by geoLOGIC Data Center

“It’s a very, very large data set,” says Galbraith. The VISAGE software gives an operator the ability to look at that data and make sense of it, sorting through it and normalizing it against a number of variables.

“I typically will look at 150–200 wells, and it’s [in] a matter of less than a minute,” he says. “The efficiency of it is real time in my mind with the data sets I am running.”

“When you are a small company like ours, every software product has to have a direct cost benefit, which VISAGE definitely does. We run very lean on our staff so we have to make it efficient to be able to do what we need to do, and that’s what this tool does.”

Because all the plays Elkhorn is involved with are technology-driven, it has benefited from being able to see what other companies have learned in drilling their wells.

“It definitely gets you up that [technology] curve quicker,” says Galbraith.

Percentile (cumulative probability) distributions provided a comparison of various completions attempted on the target reservoirs, leading to the conclusion that if single-leg horizontal wells could be fracture stimulated, they could yield the same production potential as multi-leg horizontal wells.

The software’s ability to generate representative type curves (rate versus time) that can be easily updated has allowed the company more time to actually analyze the data, he says. The results are shared within the multidisciplinary engineering, geology and geophysics team in order to “truth” the technical models.

Another VISAGE innovation is a method of combining cumulative probability distributions with type curves to provide a visual tool to communicate the variability in the production rates that make up type curves.

VISAGE, which was formed by a group of former Schlumberger Canada Ltd. employees, went commercial about 6.5 years ago, says president Bertrand Groulx. Initially, it focused on production operations.

More recently, VISAGE has incorporated into its software the mechanisms that will enable operators to easily and rapidly navigate massive amounts of public information. Exploration and exploitation companies are interested in adding the software as another tool in the exploration process, he says. It can help them find the “hot wells,” who is drilling them and what technologies they are using.

Groulx says it would take him less than two minutes, starting from scratch, to bring up all the data for a type curve for the northeastern B.C. Montney formation, based on data from 2,000 Montney wells.

“You are not actually just analyzing data, you are exploring it because once I get those Montney wells up, I can group by company and actually see a type curve by company, and see which is the better company, and that takes literally two seconds,” he says. “I can group by drilling contractor and who has drilled the most wells, who has got the best record, and I can look at horizontal length [and] azimuth direction of my wells.”

Because of its speed, the tool allows engineers the time to do what they are actually being paid to do: analyze and explore data. “The frustration that I hear from engineers is that they spend the bulk of their time hunting and gathering data—grunt work—and very little time actually doing stuff with it,” says Groulx.

He says his company chose a licensing model that would allow it to grow the company while making it palatable and low-risk for clients. “Because we are user-based, we are a rounding error in the grand scheme of things if you want to try out one licence. But if we prove to be very effective, there are some companies where we have [several] users from operators all the way up to the CFO.”

Elkhorn has a floating licence so that anyone can use the product, but only one person at a time. “They make it so that the product is affordable for small entities such as ourselves,” says Galbraith.

And because the software continues to fund VISAGE’s development, “it is constantly getting better, and our ‘to-do’ list from clients on how to make the tool more powerful never gets shorter,” says Groulx. “It will always be evolving.” ■