

R.A. Tracer technology means you don't need Superman at wellsite

Radioactive tracing will tell you why your well is or isn't producing up to expectations

If crews drilling for oil and gas had Superman's X-ray vision, there'd be no need for a company like R.A. Tracer.

But life isn't like that. When you're trying to get an accurate subterranean picture of the well you're trying to complete, you need the help of experts.

R.A. Tracer, a completely Canadian company with an impressive safety and success record, provides radioactive tracer material for oilfield stimulation procedures. They include fracturing, cement/acid squeezes and feed rates.

"We like to call it an insurance policy," says Doug Cust, general manager of R.A. Tracer.

"If you've got a real good well, then you can tell why. On the other hand, if you have a well that's less than expectations, it'll also tell you why."

Under Cust's new ownership as of early this year, R.A. Tracer has beefed up its technology and facilities, including a well-crafted website that is loaded with information, a Calgary marketing presence and new premises in central Alberta. It's all part of the company's leap forward.

"This facility really upgraded our laboratory for processing, the loading of radioactive material and storage," Cust explains.

"We're coming in high-tech and we're here to stay."

The use of this equipment allows the customer to measure the effectiveness and migration of fracture stimulation. Such procedures are a mystery to the average person, even in Alberta, but they can be crucial to companies tapping into the province's hydrocarbon wealth.

After an oil well, for example, is drilled, a metal pipe is assembled in stages and inserted down the hole like an immense string of spaghetti, often thousands of metres long, to the oil zone. Then



R.A. Tracer's Doug Cust, above, with a high-pressure isotope injector, and Norm Hanson, above right, loading radioactive isotopes on to a truck.

liquid concrete is pumped down and forced out of the bottom, up around the exterior surface of the pipe, to form a solid sheath around the pipe after it sets.

Charges are lowered close to the bottom of the pipe to blast perforation holes through the metal and into the surrounding rock. When fluid is subsequently pumped into the pipe at extremely high pressure, it creates breaks in the rock that can be made permanent by forcing sand or, in some cases, acid into the cracks.

This "hydraulic fracturing" enhances the surrounding rock's permeability by connecting pores together, boosting oil flow.

However, if the fractures radiate in undesirable directions, the well might produce water as well as oil. It's crucial for the crew to know where the fractures are, and that's where R.A. Tracer comes in.

Its radioactive isotopes – chosen

to be non-leeching and having rapid decay for environmental reasons – are pumped down the well at high pressure and forced into the sand. That creates a kind of map that can be accurately read when instruments detecting radioactivity are later lowered into the pipe.

"Our company is the only one that injects the isotopes under such high pressure, making it a safer procedure," Cust says.

"If they don't run tracers when they do a fracture job, they have limited knowledge of where that sand or fluid was placed," says operations manager Norm Hanson.

"Once radioactive material is injected, wireline is run down the well and it detects the radioactivity. This establishes whether the whole zone took it, or part of the zone, showing if their simulation process was effective."

R.A. Tracer's system is capable of injecting up to five separate



isotopes, and is certified and tested to 103.5 MPa (15,000 psi) working pressure and 155.25 (22,500) test pressure.

R.A. Tracer's high-pressure injector does not rely on a single pumper to distribute radioactive material. It is remote-controlled from up to 200 feet from the wellhead and pumping equipment, and a safety check valve ensures contents are contained before the frac and during the flush.

"We're in a world of technology compared with 20 or 30 years ago, when I first got in this business," Cust says. "The isotopes are better, the data's better."

R.A. Tracer has added online ordering to its website, along with product information, descriptions of equipment and outlines of procedures.

"A lot of companies don't think of tracing when they do completion work, but it's a very effective process," Cust adds. "Or if they do, we'd like them to consider us, as we are the only provider of high-pressure injection equipment in Canada and possibly the world."

Above all, he says, don't be put off by the word radioactive.

"As soon as you hear that, you get nervous. Well, we want to stress the safety. That's why we do it on the high-pressure side."

"We're licensed by the Canadian Nuclear Safety Commission. We know what we're doing. We've proven that over the years."

For more information, call toll-free 1.800.668.3308, go to www.ratracer.ca, or e-mail dougcust@ratracer.ca or normhanson@ratracer.ca.