

## Cleaning up by cleaning up

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Historically, some big businesses have made big messes. Greenhouse gas emissions, oil spills and unsafe water have become unsavoury but all-too-commonplace topics in the news and industry is beginning to sit up and take notice.

Within the past couple of decades, businesses have been cropping up in Saskatchewan with the goal of cleaning up others' messes -- or simply keeping a mess from happening in the first place. Some of them are turning a pretty good profit in the process. And that isn't something that's likely to change, according to those involved in the field.



CREDIT: Roy Antal, Leader-Post  
Peter Klaptchuk, Ozonator Industries

Vern Corbett, head of several SIAST programs including environmental engineering technology, said former students have gone on to find work in the environmental field -- something he expected to see continue.

"In terms of prospects for that type of industry, they can only expand ...," he said. "I would say it's probably the strong natural resource base that we have and I think that industry is experiencing some growth. The mining and oil and all that type of thing, it's not going to slow down."

"We don't see any softening of the market for people with environmental employment ...," agreed Grant Trump, president of the Environmental Careers Organization Canada. "There's a greater public awareness of environmental issues ... and I don't think these environmental issues are going to subside."

Trump said statistics show Saskatchewan environmental employment -- jobs with an environmental component to them -- increased nine per cent between 2000 and 2002. While the number of environment-based businesses did not grow dramatically, total jobs increased, as did revenues by 2.5 per cent.

"It appears as though we've got about the same number of companies employing more people, but doing a lot more business ...," noted Trump. "(The environment) really has a direct impact on a lot of the ways in which provinces including Saskatchewan are looking at economic diversification. So we turn to

look at it as the business of the environment, because it is a business."

Peter Klaptchuk's Regina-based business Ozonator Industries -- a branch of Sanitec Canada -- is one of those businesses, on the cusp of success with its biohazardous waste treatment technology.

The Ozonator Industries president and chief executive officer said Sanitec got off the ground in 1998 as a way to deal with biohazards, something Klaptchuk knows a lot about with a 30-year history in dealing with biohazardous waste.

"We're having our kids and our grandkids and we're realizing that we can only dump on Mother Nature so much -- and we've been doing a pretty good job of dumping on her ...," said Klaptchuk. "Getting back to our Ozonator project, the millions of tons of greenhouse gases that we can take out of the air with this process is just phenomenal."

The made-in-Regina Ozonator technology uses ozone gas to disinfect and dispose of biohazardous waste. The material decays when treated with ozone, leaving only oxygen as a byproduct, explained Klaptchuk.

This technology is ideal for treating biohazardous waste generated by the health-care industry, he said -- waste that is now frequently burned, creating greenhouse gases.

"For every ton of waste you burn, you generate a ton of (carbon dioxide) greenhouse gases ...," said Klaptchuk. "One of the driving forces behind making this new technology, this Ozonator, is that our technology can be taken and put right in the back door of a hospital."

While Sanitec's market base is in Saskatchewan, currently all Ozonator Industries deals are outside of Saskatchewan. Earlier this year, the company won the approval of the North Carolina Department of Environment and Natural Resources, a major breakthrough for the Ozonator. Klaptchuk is hoping Saskatchewan businesses will soon catch on.

"We're used to in Saskatchewan -- and in other provinces here in Canada -- to using heat to sterilize biohazards, and what happens is we're kind of stuck in that rut, and when new technology comes along, it's hard for us to accept it," said Klaptchuk. "What's really driving our technology, the Ozonator technology, in other countries is the fact that it has no emissions. And not only does it have no emissions, but things like when you incinerate medical waste, that's the No. 1 generator of dioxins in the world. And dioxins have been a known carcinogenic for years."

Meanwhile, Sanitec has been nominated for an award in Germany for its made-in-Saskatchewan SaniGreen process, which sterilizes waste seed product, including seed that has been chemically treated. This process protects companies' intellectual property and the environment, by providing an environmentally sound method of disposing of the used seed. Often, that treated seed is disposed of either through burning, thereby creating greenhouse gases, or dumped in secure landfills -- which stores seed as opposed to treating it, resulting in pesticides and herbicides leaching into the soil.

Following treatment, which drops the chemical portion of each seed from 10.7

to 0.1 per cent, seed can be used on land farms contaminated by hydrocarbons, where the nitrate-rich seed becomes food for enzymes and bugs.

"I'm pretty proud of that process because it truly is an environmentally sound solution to a problem," Klaptchuk said.

Another Regina-based businessman has found a niche throughout North America -- and possibly soon, Australia -- among businesses interested in cleaning up contaminated soil and groundwater.

Environmental engineer Sean Frisky started his company, Ground Effects Environmental Services, in 1998, a result of his attempts to fix pollution-related problems at a refinery at which he was working. Since then, his company has taken home numerous business awards, including the title Exporter of the Year from the Saskatchewan Trade and Export Partnership.

Ground Effects designs, manufactures, installs and monitors systems that remove underground contaminants, including gasoline, nitrates and diesel fuel. The company has developed more than 70 new products for soil and water remediation. Frisky said the company has a new product that treats salts, metals and hydrocarbons for markets such as transportation, highways and the oil fields.

All technologies developed by Ground Effects work without excavation.

"Basically we can go in and drill wells ... to hook our equipment up to clean it up without going in and digging up the whole site and hauling it to the landfill -- which just moves the problem. We actually treat the problem," Frisky said.

The company sells and rents equipment and does projects right across North America, and has developed markets in Japan, China and Trinidad, among other countries. That success can, in part, be attributed to companies' realization that they need to start cleaning up the messes they've made in the course of doing business.

And looking into the future, Frisky said he sees only more growth for his industry.

"It's really in its infancy still," he said. "Talking to different large companies, they even feel they're just scratching the surface still. The regulations are getting stricter, the liability is becoming a bigger issue ... The old 'dig and dump,' that's going to go by the wayside."

Dwight Hayter, president and CEO of Watrous-based Dwight's Geothermal, also does a lot of digging in his line of work. But his kind of digging and drilling is good for both the environment and the bottom line.

Hayter, a former journeyman water well driller, started his company seven years ago and now sells and installs ground source heat pumps -- or geothermal units -- across the province.

The system, consisting of subterranean pipes and a geothermal unit, works by using heat naturally generated by the Earth and using it to heat and cool

buildings.

"We're actually getting about two-thirds of our energy from your yard and the other third comes from the refrigeration compressor and unit itself," Hayter said. "They're environmentally friendly, because we don't burn anything, and they're rated at about 400-per-cent efficiency, which means every kilowatt of power we put in, we get four kilowatts of heat back out of it."

Hayter's business has picked up in the last couple of years, he said, with an average of 70 units installed yearly. Currently, there are over 220 of his units operating in Saskatchewan.

Hayter has also been named NextEnergy's dealer of the year two years running, in 2004 and 2005.

He said some customers want to use geothermal heating mainly for environmental reasons, but the majority of people do it to save money -- as much as 50 per cent on heating bills. This method of heating allows them to either shut their gas heating right off -- an increasingly more palatable option as fuel costs skyrocket -- or they simply avoid the large fees to have on-site gas on their new acreages, Hayter said.

"Our growth has been quite high and all of the other dealers that I know of in the country, their growth has been the same," he said. "These units are becoming more and more popular as people see prices at the gas pumps go up and the rest of the fossil fuels go up. We replace an incredible amount of oil furnaces in homes, electric furnaces, propane furnaces. People just find that their heating bills in the last five years are getting astronomical, so they're looking for alternatives."

Raum Energy president and CEO Darryl Jessie is hoping to provide yet another alternative. His nine-month-old Saskatoon-based company is working on a wind generation project that would install light-weight and cost-effective wind turbines. Unlike many other companies in North America, Raum Energy intends to also supply towers and converters with the windmill-like units, making the company a one-stop shop for wind power customers.

Additionally, the units will be easy to install -- so easy, buyers will be able to save money by doing it themselves, with only a need for an electrician to perform the final connection to the power grid. The one-kilowatt turbines are intended to supply 25 per cent of household energy, or simply charge batteries for those who wish to remain off-grid.

"One author says, 'There's a river of money blowing over your head every day.' We still need the utilities to supply high-grade utility power, but I think in businesses and buildings and homes, you can supplement a lot with existing energy sources all around you," Jessie said.

He said he and his company's one-kilowatt turbine would offset roughly about one tonne of carbon dioxide a year in a typical home, with one turbine being roughly equivalent to two mature trees. "The grid energy we have in Saskatchewan is probably the dirtiest in the country, or very close to it. Every kilowatt hour you use of electricity dumps about 1.2 pounds of CO2 into the atmosphere," he said.

Jessie is waiting on SaskPower to decide what, if any, changes to make to existing policies that currently stifle the public's ability to move towards this type of alternative energy. An answer is expected by spring. After that, he hopes the path will be clear to start marketing the turbines.

"It seems to be the right place at the right time and in the right venue," Jessie said. "We're taking a risk of course. We think our products will be good, but we'll see how the public views them, and I think it will be very good.

"The way I see it, I think that there's so much potential here. We have a windy province ... The technology's there, the economics are there. All we need is somebody to just change the policies slightly and away we go."

#### THE FACTS ...

- According to Environmental Careers Organization Canada, between 2000 and 2004, the environmental workforce grew, "outpacing the Canadian workforce as a whole by 60 per cent."
- ECO Canada found that one in four Canadian organizations are now recruiting environmental practitioners from entry level to senior positions. Job variety has expanded, with new positions and places to work continually emerging.
- ECO Canada's 2004 Environmental Labour Market report found that, at that time, there were nearly 12,000 job vacancies in the environmental sector in Canada.

Source: Environmental Careers Organization Canada

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