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NXT Energy Solutions Inc.

producing cutting-edge subsurface survey technology for oil and gas exploration

by Beth Maggard

THE 16-YEAR JOURNEY THAT LED TO George Liszicasz to found NXT Energy Solutions Inc. began, somewhat improbably, with a pacemaker. Liszicasz was working on the research and development of a nanotechnology that would allow the human body's energy to be converted to the energy required to run a pacemaker, but in the testing stages he noticed something interesting about the device that he hadn't foreseen. The nanotechnology was responding uniquely to sources of stress, and not just any stress: the same kind of stress found in geological formation changes.

Liszicasz changed tracks, refining this stress detection technology to respond more effectively to these geological changes and in so doing created an effective airborne tool for locating oil and natural gas reservoir potential. Says Ken Rogers, vice president of finance and CFO of the company, "By detecting changes in stress, we can model subsurface geological structures and identify oil and gas potential." In 2006, following years of research, development, and field trials, NXT's technology was ready for market. This technology, now called the Stress Field Detector (SFD) survey system, allows the company to provide a valuable and unique service to its clients.

Unlike traditional airborne surveying methods used for hydrocarbon exploration, the SFD survey offers customers a detailed and immediately useable assessment of what lies beneath the surface. "We fly at 200 miles per hour, picking up thousands of inputs every second, which provides the core data that our team then interprets to identify subsurface structures," says Rogers. "And unlike all other airborne surveys, we identify the specific locations with reservoir potential."

"We fly at two hundred miles per hour, picking up thousands of inputs every second, which provides the core data that our team then interprets to identify subsurface structures."

Ken Rogers, Vice President of Finance & CFO



By doing so, an SFD survey provides an ideal complement to a more traditional, ground-based seismic technology. The SFD advantage is that large regions that may take several years to survey with seismic can be completed in months with SFD. The seismic advantage is in selecting a precise drilling location and depth. "We complement seismic. Our survey is much faster, often one-tenth the cost of seismic, plus as an airborne survey we have no environmental footprint," Rogers says. "We provide a bird-dog tool for our clients to create focused and effective seismic programs."

Because this technology only hit the market in 2006, NXT is still in its start-up phase. In the past two years, it has built a solid base of six loyal clients, its biggest being Black Goose Holding Inc., a privately owned exploration and land acquisition company. Black Goose conducts SFD surveys to quickly evaluate and acquire land

with demonstrated high hydrocarbon possibilities. "They use our technology to give them the edge to acquire land before its potential is discovered by others," Rogers says. Black Goose has the opportunity to secure promising land before other companies that use seismic technology have even finished their survey processes.

Another repeat client, Pengrowth Energy Trust, came to NXT recently with a challenge that illustrates the value of NXT's services. The mineral rights of some energy-rich land were going up for sale in 30 days, and Pengrowth wanted the company to perform a survey of the land in question. NXT accepted the challenge and completed a survey over approximately 4,000 square miles in time for Pengrowth to formulate its successful bidding strategy entirely based upon the SFD survey.

In the years ahead, NXT is looking forward to expanding its client base and getting the word out about the cutting-edge value of its SFD technology. "Once the industry at large learns more about the technology, we think it will have tremendous worldwide applications," says Rogers. With a growing roster of satisfied clients, NXT Energy Solutions Inc. will continue to provide an environmentally friendly surveying technology that saves customers both time and money in the highly competitive field of oil and gas exploration.



Generating Prospects for the Oil and Gas Industry

NXT is a Calgary based technology driven exploration company that provides airborne geophysical services to its clients through the use of its leading edge SFD Survey System. This innovative survey method can evaluate large tracts of land and accurately locate prospective areas with a significant reduction in cost and time in comparison to conventional exploration methods. NXT delivers the client an inventory of prospect areas ready for land acquisition, followed by focused seismic programs and drilling.

- Evaluate large tracts of land quickly and cost effectively.
- Focus seismic and exploration dollars on high impact prospects.
- High-grade prospects with the best reservoir potential

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