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Environmental Consultant Evolves into Clean Water, Green Energy Manufacturer

When opportunity knocks, it rarely calls in advance to set an appointment. Kevin Jones heard the proverbial rap at the door during a trip to Liberia. His company, **Cardinal Resources Inc.**, was there to install new water wells for villages and cities where the water and power supply systems had been destroyed by 18 years of war.

During the Liberia project, Jones, company founder and president, noticed that some villagers had to draw their daily water from contaminated surface sources in areas where groundwater was contaminated or not available. That's when inspiration struck -- and the result is a technology that's ideal for any situation where potable water is needed but the local energy grid is unreliable or nonexistent, including large-scale rescue operations like Hurricane Katrina or war zones like Iraq.

The Monroeville-based company is an environmental engineering consulting firm with expertise in a wide range of green issues, including soil and groundwater cleanup, water supply, wastewater treatment services, strategic planning and site assessments. Until this trip to Africa, the company had focused squarely on the consulting and service side of the equation.

"Given the lack of a stable power grid and the cost of importing fuel and chemicals," says Jones, "we soon realized these people really needed a self-powered, self-contained, portable water purification system." And so the idea for the Red Bird System was born -- an easy-to-set-up water purification system that runs entirely on solar power.

A complete Red Bird System is roughly 20 feet by 10 feet, needs no external energy source and can purify enough drinking water for up to 1,000 people a day. The two-step purification process uses naturally occurring salts, available anywhere in the world, eliminating the need for the costly chemicals used in most standard filtration methods.

"It's really elegant in its simplicity," says Jones. "Dirty water goes in, clean water comes out. Along the way, it's filtered and disinfected. It even comes out under pressure. You can set up these units quickly and then just walk away."

The system, which is designed for long-term operation, is tailor-made for emergency use, but the technology is also ideal for communities and industries that want to reduce the



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amount of energy and chemicals they use to process their daily drinking water. The core technology can currently be scaled to serve 20,000 people a day.

Jones credits Ben Franklin Technology Partners with smoothing the way in making the shift to a manufacturing-focused enterprise. "We have a highly experienced senior staff," he says. "There's hardly an environmental situation we haven't faced and solved. When we add in BFTP's experience in manufacturing and product commercialization, we feel very confident about this evolution."

Customers for Red Bird Systems will come primarily from their existing base, which includes industrial clients, non-governmental agencies and small municipalities around the world. Though full-scale manufacturing has not yet begun, they've already pre-sold five units based on reputation and the high demand for renewable energy water treatment.

"The potential market share is nearly limitless," says Jones. "About 20 percent of the world's population doesn't have access to clean water. Couple that with increasing global demand for energy-efficient technology and sustainable environmental solutions, and we see a bright future -- and a tremendous opportunity to help."

So far, the company's biggest challenge has been trying to raise money for the new venture. Recently, Cardinal Resources presented their business plan to potential investors at the selective Pittsburgh Angel Venture Fair sponsored by BFTP. "It's a balancing act, moving from a cash-flow business model to a manufacturing model," says Jones. "With BFTP's guidance, we're putting aside money from our core consulting business and reinvesting it in the manufacturing side. With their assistance and access to follow-on financing, we can take Red Bird to full commercial mode."

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—KEVIN JONES, FOUNDER AND PRESIDENT,
CARDINAL RESOURCES INC.