



Gene Dube, president of Pat Jackson/Tri-City Septic Tank Service, takes composite samples of dewatered septage for testing before land application. This pile contains about 500 cubic yards — the solids content from about 1.5 million gallons of septage.

Solid Assets

A Maine pumper tackled constraints of septage disposal by moving aggressively into dewatering and marketable compost

By Mary Shafer

The story of Pat Jackson/Tri-City Septic Tank Service clearly shows how technology can change and define an industry.

Over nearly 45 years, Tri-City, based in Augusta, Maine, has moved from a one-person, single-truck pumping operation to a 14-person, 10-rig outfit that provides septic tank service and pretreats septage from its own and three other pumping businesses. Now, Tri-City looks forward to even more prosperous times with its entry into the composting business.

Company president Gene Dube

moved into pretreatment because his business was constrained by the local wastewater treatment plant's capacity to treat septage. Composting was a logical step. It converts the dewatered septage solids into an appealing product that consumers are willing to buy for their gardening and landscaping projects.

Humble beginnings

In 1958, Gene's father, Louis Dube started Tri-City Septic Tank Service with two oil drums welded together and mounted on a trailer to serve as his pump

tanker. He pulled this rig behind an army surplus Willy's Jeep to service his first customers. In 1963, he bought his first new truck, and the business continued to grow.

Gene Dube started working for his father at age 10, helping clean tanks for a quarter per job. "I remember buying my first bike for \$34.50 with money I saved from those jobs," he recalls. Now 53, Gene grew easily into his current position as company president. His brother Peter drives a pumper truck with his son, Peter, Jr. on a route to tanks in Boothbay Harbor. The Dubes' brother-in-law, George Savage, is semi-retired but still drives a pumper to about six jobs a day. Two other nephews also drive routes.

In 1976, Tri-City merged with Pat Jackson, Inc., and the business now has Pat Jackson/Tri-City Septic Tank Service emblazoned on its fleet.

Adapting for success

By 1983, Tri-City was becoming a victim of its own success. Business growth was hampered by local treatment plants' limited capacity for septage (accepting just five to ten pumper tanks

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per day) and steadily rising rates.

Gene began scouting for a site on which to locate a septage processing plant. Tri-City abandoned plans to convert an existing Augusta building after neighbors objected. So the company decided to develop the plant on a farmer's field in nearby Belgrade, for which it already held a license to land-apply treated solids to 50 acres.

In 1986, Tri-City purchased the property, upgraded its land application license to accommodate 5 million gallons on 108 acres, and built storage tanks to hold material for dewatering. The company installed a belt press to separate solids from liquid, both of which could be land applied after lime stabilization.



Tri-City dewateres septage in a DeTainer dewatering box supplied by Green Mountain Technologies. At the right, company president Gene Dube takes an effluent sample.



"What I've seen in the industry in the last three to four years is a problem for pumpers in finding a place to get rid of the liquid waste. But if your water output meets treatment plant guidelines for industrial pre-treatment, it's very economical to feed it into a direct sewer line."

Gene Dube

The company soon reached a steady processing volume of 3 million gallons per year. Already using eight land application sites, and lacking feasible prospects for new ones, Gene became concerned about approaching the 5 million gallon limit. To increase throughput, Tri-City chose a self-contained dewatering unit, leasing a DeTainer™ Dewatering Box from Green Mountain Technologies of Whitingham, Vt.

With a throughput of 150 to 300 gallons per minute, this portable unit could process in three to six hours what the existing belt press could handle in a day. The new unit, 8 feet wide, 24 feet long and 7 feet high, fit easily into Tri-City's facility and effectively quadrupled capacity.

All-in-one

The single-unit DeTainer performs four functions typically required for liquid waste handling: storage, dewatering or concentrating, solids storage and transportation to the application site. The unit works through gravity draining, mixing the raw septage with a polymer that promotes clumping of suspended solids.

These clumps settle to the bottom, where they are filtered out by a series of fine mesh screens stretched over stain-

less steel panel frames. The free liquid rises to the surface and drains through more screens mounted to the container sidewalls. The unit can be filled in a single batch or with smaller batches over several days or weeks.

Once the container is full, it can be transported via roll-off truck to a land application or composting site. The screens are then cleaned with a pressure washer and replaced, and the unit is ready to begin again. Processing times vary according to container size and the nature of the sludge.

Gene believes his calculated risk in trying new technology has paid off. "It gave us some breathing room," he says, allowing Tri-City to make well-considered decisions about the operation's future. It has also helped the company create new revenue streams.

Soon after Gene installed the dewatering system, three other pumpers became customers. "I didn't have to advertise," Gene laughs. "They found me. If I wanted to, I could probably have about 20 more pumpers come in."

Next step: compost

Rather than expand his dewatering business, Gene created another profit center by investing in a CompTainer Compost System™, also from Green Mountain Technologies. This system creates saleable,

P R O F I L E	
Pat Jackson/Tri-City Septic Tank Service, Inc., Augusta, Maine	
MARKET AREA:	100 mile radius of Augusta
ANNUAL SALES:	\$1.3 million
EMPLOYEES:	14
SERVICES:	Septage treatment (7 million gallons annually), septic system cleaning, inspection and repair; grease trap cleaning
FLEET:	10 trucks (1,600-gallon pumper, three 4,000-gallon pumpers, one 5,000-gallon roll-off truck; two 8,000-gallon trailers, three service pickup trucks)
TREATMENT FACILITIES:	DeTainer™ Dewatering Box and CompTainer Compost System™, both from Green Mountain Technologies
AFFILIATIONS:	Maine Wastewater Control Association, National Association of Wastewater Transporters, Maine Association of Wastewater Transporters

Class A compost from the dewatered, lime-stabilized solids.

The airtight CompTainer uses a closely controlled batching system to optimize decomposition, meet regulatory requirements and minimize odors. Within 13 days, a batch has fermented long enough to be moved onto a cooling pad to settle and stabilize. After 29 days on the pad, it is screened for non-biodegradable solids and can be packaged for sale to gardeners and lawn care professionals.

Gene recommends that pumpers

considering septage treatment do their homework first. "What I've seen in the industry in the last three to four years is a problem for pumpers in finding a place to get rid of the liquid waste," he says. "But if your water output meets treatment plant guidelines for industrial pre-treatment, it's very economical to feed it into a direct sewer line."

Facility location is thus critical to the success of a septage treatment operation. Gene recommends pumpers find the treatment plant first, then locate the septage treatment facility. Otherwise, it's



Eye of the Beholder

Gene Dube with a sample of compost.

Gene Dube muses on how differently people react to separate end products of the same septage. No one likes the sludge pumped from their septic tanks, he allows, but crumbly, deodorized compost after a year of aging gets a different response.

"When it gets that dark, it's attractive," says Gene, owner of Pat Jackson/Tri-City

Septic Tank Service. "People like to see it around their shrubs." And they're willing to pay for it. That difference shows up on Tri-City's income statement as more of the company's dewatered biosolids are converted into Class A compost every year.

Before deciding to compost, Tri-City performed some ingenious market research among pumping customers to gauge their interest in the end product. The company bought two truckloads of compost from another pretreatment plant and packaged it in easy-to-handle, 6-inch cardboard boxes with descriptive labels.

"We handed one out to each customer to see how it would go over," Gene reports. "We told them it would be good for their flower beds."

The test was a great success — customers were willing to buy compost for gardening and landscaping. Tri-City has been able to sell its output of 2,000 cubic yards annually at \$10 to \$20 per cubic yard, depending on order size. When making pumping appointments, company employees remind customers that compost is available. They then take loads of material on the call in a one-ton pickup or roll-off truck.

"When our output reaches 4,000 cubic yards per year, we'll begin wholesaling to the contractors," Gene says. Building and landscape contractors have expressed interest in ordering thousand-yard deliveries for residential and commercial projects, and one farmer on whose land Gene applies dewatered solids wants compost applications as well.

Gene cautions that pumpers considering their own composting operations need to keep an eye toward quality control. "You have to have a fine quality compost to offer," he says. "Age it to a rich, black color and screen it down to one-quarter inch to eliminate any cigarette butts and small pieces of plastic. We compost with sawdust instead of wood chips, so it screens down fine and doesn't have any ammonia smell to it. It's well-suited to residential demand and use."

Along with boosting revenues, Gene believes the compost adds appeal to his residential business. Customers appreciate the product and convenient delivery. Says Gene, "We want them to tell their neighbors, 'Have Tri-City clean your tank. They have this nice compost you can get at the same time!'"



Peter Dube unloads one of Tri-City's pumper trucks. Peter is one of several family members who work in the business founded by Louis Dube in 1958.

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Gene Dube

necessary to land-apply or otherwise manage the liquid as well as the solids.

Advice to owners

Recalling his own growing pains, Gene cautions potential treatment facility owners to "look for a medium-size treatment plant with significant excess capacity to allow you room to grow. We bought a pump station in Manchester with its own sewer connection. We pay \$7 per thousand gallons, and our current license (7 million gallons annually) can be increased within 30 to 60 days by buying more capacity."

He also warns that neighbors may resist a treatment plant location, but says a good public relations effort can overcome most objections. "People don't seem to care about the treatment plant location, but the deposit of the effluent," he asserts. "For the plant itself, they're worried about odors, but a demonstra-

tion of odor containment technology will also help."

Taking a stab at predicting the future of biosolids management, Gene believes the industry will eventually run entirely to composting, as septage volume outpaces available land application sites. He also thinks the profit motive is strong in converting sludge, which carries a disposal cost, into compost, which generates revenue. Tri-City plans to expand its compost generation volume by the output of one CompTainer per year, until the company moves from its current four units to eight.

After a lifetime in the industry, Gene sees a cleaner, greener, more profitable future for pumpers and their customers if they can make friends with the changes brought about by evolving technology. If his own past and present are any indicator, his vision is 20/20. ■