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June 2010



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By Gil Longwell

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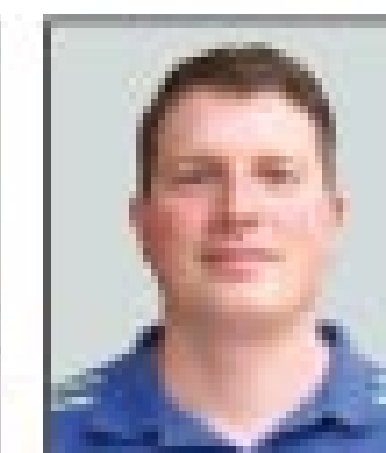
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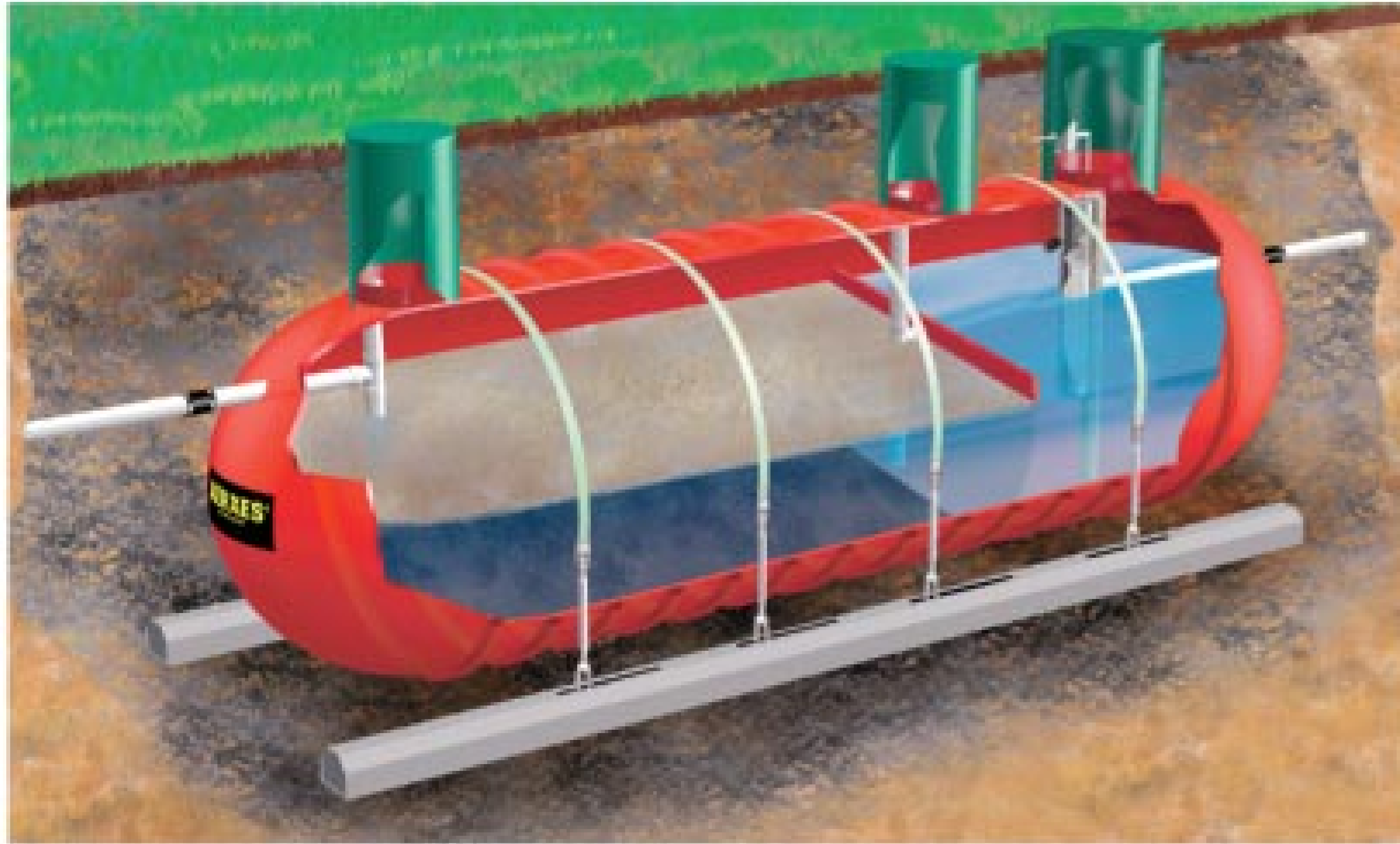
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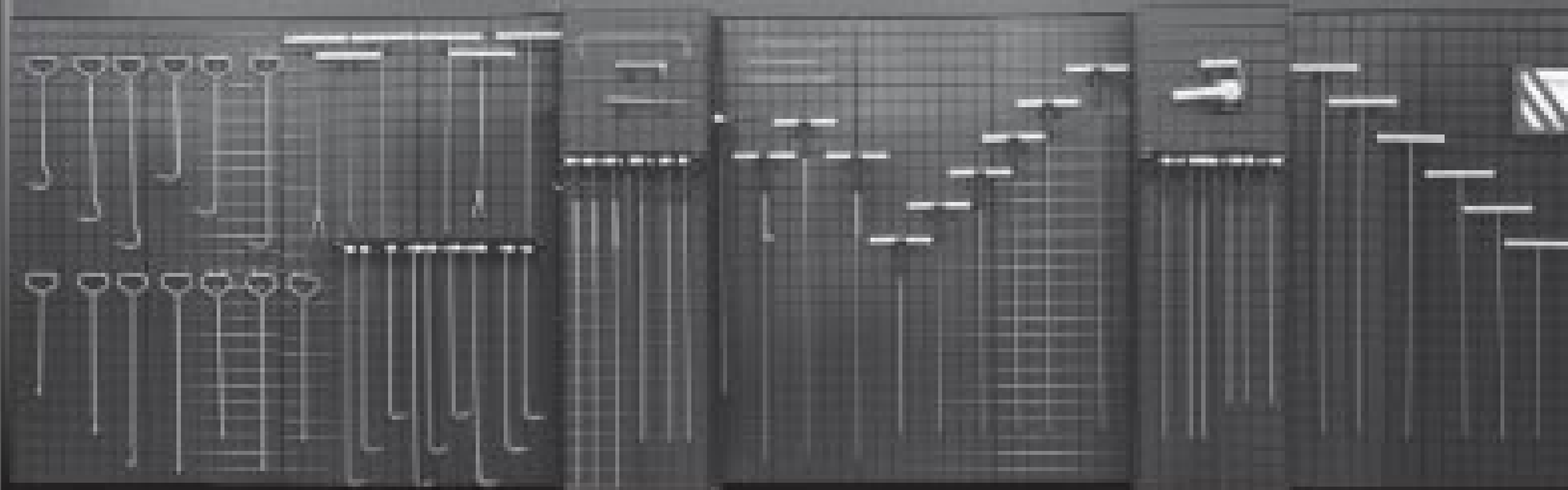


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## Taking Care of Yourself

Your own personal physical plant is just as important as your equipment. Spending time on fitness can mean better health and more energy at work.

By Ted J. Rulseh, Editor

I used to stay in shape by playing basketball, and for years I could run up and down the court like a deer. Then I blew out my Achilles tendon at age 40 and decided to give that sport up.

I never became a couch potato. Depending on the season, I walked or bicycled vigorously, and regularly, for about 16 years. But it wasn't enough, and about six months ago I decided to up the ante and take up running.

Working on it slowly, I built up to where now I can run two miles with no walk breaks on a consistent basis and can sometimes do three or four. I felt the benefits during the recent Pumper & Cleaner Environmental Expo, where I spent long days walking the show floor, doing errands, and shuttling back and forth to seminar rooms.

Whereas at previous Expos my feet and legs were shot by one or

two o'clock and I had to tough out the last few hours of the day, this year I had plenty of energy. I won't say I wasn't tired at five o'clock, but my feet weren't sore, my legs didn't ache, and I still had some spring in my step.

### The biggest asset

I don't say all this by way of bragging. I say it because I'm surprised at how much and how directly my increased exercise has helped me, and I wonder how many readers my age and younger (or for that matter, older) could benefit from a fitness program.

Successful contractors take great care of their equipment and often even better care of their people. But many don't take proper care of themselves. And after all, our bodies are the most important physical assets we have. Without health, we're nowhere. Are you as

physically fit as you should be?

If you knew me a little better, I might be one of the last guys you'd picture as a jogger. I always hated running for its own sake. I'd gladly play basketball, softball, touch football, tennis — but to me running was a gigantic bore.

Back in my early 30s I wrote a newspaper column disguised as a

Do you have a fitness goal? It doesn't matter if you decide to jog, swim, bicycle, join a health club and exercise on the machines, or do something else altogether. What does matter is that you start looking after your physical well-being, if you're not doing so already. It's not necessarily easy. It takes time, of which you already may think you

**Successful contractors take great care of their equipment and often even better care of their people. But many don't take proper care of themselves. And after all, our bodies are the most important physical assets we have. Without health, we're nowhere.**

chapter from a "book" called *The Non-Runner's Book of Running*. In it I enumerated the reasons not to become a runner, such as the fact that the fabled "runner's high" does in fact occur — from morphine-like substances released by the brain under extreme stress. The healthy non-runner, I wrote, wants nothing to do with drug addiction.

### Not for fun

And yet, there I am, on alternate days, jogging through the neighborhood. Do I like it? Not particularly. But I do like the way I feel after the workout, and so I carry on. I have no designs on running 10Ks or marathons. I'll be satisfied to get to where I can run three miles or so consistently. That was the goal I set at the start, and I'm almost there.

have too little. But if my experience can be relied upon, it is most worthwhile.

I know for a fact that I feel better. I also believe that in this day of ever-rising prices for medical care, being physically fit is the best "health insurance" one can get.

I'm not a prototype physical specimen. I'm not as religious about my exercise as I might be. I could eat healthier foods. There are about 20 pounds on me that it wouldn't hurt a bit to lose. But at least I feel as though I am on a good path.

How about you? Would regular physical activity be beneficial? It can be hard to get started, and at times even harder to stay with it. But if a dedicated non-runner like me can do it, maybe you can, too. ■



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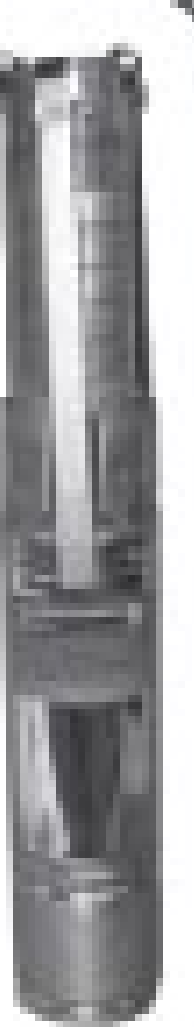


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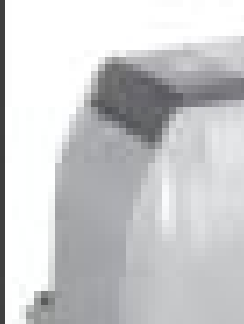
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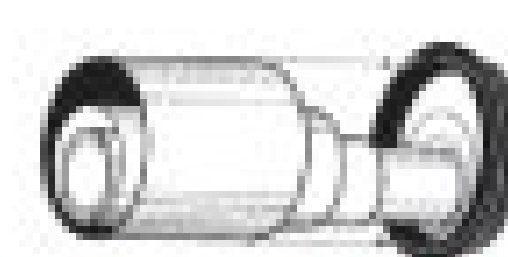
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Josh Spano (left) and Jason Nesenman measure and mark the ground for a septic tank excavation while Anthony Sweat operates the backhoe. (Photography by Alain Alminaña)

# Following the Market

Jason's Septic adapts to changes in Florida's housing economy, while staying true to basic principles of excellence, honesty and caring

By Gil Longwell

## Jason's Septic Inc., Miami, Fla.

**OWNERS:** Jason and Brittnie Nesenman

**YEARS IN BUSINESS:** 7

**MARKET AREA:** Boca Raton to Key West on Florida's East Coast

**ANNUAL REVENUE:** \$550,000

**SERVICES:** Onsite system installations, repairs, pumping, maintenance contracts

**EMPLOYEES:** 3

**AFFILIATIONS:** Florida Onsite Wastewater Association



**W**hen the marketplace changes, a business has to adapt. Jason and Brittnie Nesenman, owners of Jason's Septic Inc., in Miami, apply complementary job and people skills to help keep busy even in slow times.

In the recent recession, Florida's residential construction market disappeared as dramatically as a house falling into an enormous limestone sinkhole in the state's famous Karst geology area. That forced Jason's Septic to downsize and rearrange the daily work schedule in serving customers on Florida's East Coast from Boca Raton to Key West.

"We treasure every customer," says Brittnie Nesenman, majority owner. Valuing every relationship has paid dividends and has helped the company grow solely by word-of-mouth marketing.

"There are significant advantages to being the majority owner," says Brittnie. "Being a woman-owned business enterprise, or WBE, gives us an advantage when bidding for government contracts." Brittnie is fully involved in the business and often can be found on job sites as well as working in the office.

**"There are significant advantages to me being the majority owner. Being a woman-owned business enterprise, or WBE, gives us an advantage when bidding for government contracts."**

**Brittnie Nesenman**

Her husband Jason entered the onsite industry when he took a job as an installer's helper. After completing a two-year apprentice requirement, he secured a Florida septic contractor's license, and in 2003

Jason's Septic Inc. was established.

"Before we started the business, I was doing what I could to be a good mom and work to help out, but I wanted more," Brittnie says. When Jason was studying for his license exam, she helped him and took an interest in onsite systems. In recent years, she has been present

for nearly every pre-cover inspection, and she has helped install a variety of treatment systems.

### **Not always building**

From end to end, the company's





Anthony Sweat uses the company's Caterpillar 430E backhoe to dig the hole for a septic tank. The company's service area includes lands underlain by "bedrock" that is actually coral from the floor of ancient oceans.

service area stretches nearly 200 miles, although the base of operations is in the northern end of that stretch. "Key West is a long haul, but that is where the work is, so I go there," says Jason.

He goes there to decommission treatment tanks. "Key West is replacing every onsite system with a central sewer system, and every tank must be thoroughly pumped and cleaned," he says. "The tank lid must be collapsed and the tank filled with sand. It feels good to be



Brittnie and Jason Nesenman

working, but in the long run this will end our work in Key West."

Inspecting existing systems brings repair opportunities, but demand for inspections has seen big swings in recent years. In 2007 Jason was doing five inspections a week, but two years later only one per week.

"We have seen some recovery in recent months, and I'd say we are doing about two a week now," says Jason. The inspection business is driven more by mortgage lenders than by homebuyers.

### Responding to change

Jason has always been on every job, every day. But now, before the field work begins, he and Brittnie review every design prepared by a credentialed system designer. "We regularly send plans back for even the most basic details that the engineer or architect has missed," Jason says. They find these reviews help keep the permitting time as short as possible. Their customers do not want delays, and they look to Jason's Septic to keep the process flowing smoothly.

After downsizing the company from seven employees to three, Jason took on the role of vacuum

truck operator. He devotes mornings to servicing more than 80 grease traps the company has under contract. Three months is the typical pumping interval, and the contract work allows time for pumping residential tanks, as well.

The vacuum truck is also an important tool when dealing with system malfunctions. When responding to a "sewage in the house" call, Jason arrives with the truck. After diagnosing the problem — which he always does while the tank is full — he empties the tank, bringing nearly instant relief and homeowner appreciation.

Wife and majority-owner Brittnie

adds, "Occasionally, when we are competing for a job, another installer will hold up a master license, suggesting they are more qualified than Jason is. Yet we meet the same regulations, we're subject to the same inspections, and we bring the appropriately licensed individuals to the project as needed."

Consequently, Jason and Brittnie see the master license as a marketing leveler. "This license will be an important marketing tool, but not having it has not been an obstacle to our success," Jason says.

In the afternoons, Jason focuses on installations and repairs. As new-home systems declined, repairs have increased. "People are not moving, and they are more willing to repair a system to keep it functioning," says Brittnie. With chambers from Infiltrator Systems Inc., Jason can install a new absorption area in two afternoons.

### A woman's voice

Nesenmans agree that when a woman calls, upset by an onsite system problem, Brittnie's voice has an immediate calming effect. "I understand what they are feeling,"

## Licenses as Tools





The team prepares to place a plastic septic tank from Infiltrator Systems Inc.

she says. “I reassure them by saying that we can solve their problem and that it is not the life-changing disaster they think it is. Yes, sewage on your floor is bad, but we can fix it.”

The company’s service area is underlain by unique geology. The local “bedrock” is actually coral that was once on the ocean floor. On top of that is a natural layer of sandy material from a few inches to four or more feet deep.

Different state regulations over the years have set different requirements for site suitability. Some systems were installed on sites with 12 inches of sand separation between the system’s aggregate and the coral bedrock. Others must meet a 42-inch separation requirement. On many repair sites, Jason has encountered effluent delivery lines and sometimes laterals broken by poor backfill techniques, or by pipes pierced as they settled onto coral “peaks.”

In Florida, systems for new construction must be designed using two sizing parameters. First, the number of bedrooms is determined and a flow value is assigned. Next, the air-conditioned square footage is considered. The calculation that yields the larger absorption area dictates the minimum size. That

indicates that regulators wanted to correlate lifestyle with system sizing.

Unique lifestyles are prevalent in south Florida. Jason’s recently repaired a system serving a single-family home with seven bedrooms, 13 bathrooms, 17,000 square feet of air-conditioned living space, and

As the economy shrinks, some people are moving business activities from storefront settings on municipal sewer to homes served by onsite systems. Brittnie took one call from a distraught woman who had moved her commercial bakery to her house.

**“I understand what they are feeling. I reassure them by saying that we can solve their problem and that it is not the life-changing disaster they think it is. Yes, sewage on your floor is bad, but we can fix it.”**

**Brittnie Nesenman**

a large institutional-style kitchen. The owner of the house often entertains groups of 100 or more.

“The system — actually there are two complete systems — has a total of 2,750 square feet of absorption area,” says Jason. Each system has its own septic tank. When it failed, the system had been in use less than two years.

When a structure has more than 10 bedrooms or 7,800 square feet of air-conditioned space, state regulations require two separate systems. Additional reserve absorption areas must also be reserved for future use.

Inspection revealed that flour, oil and other materials had escaped to the absorption area and destroyed the infiltrative surface. The repair required two treatment tanks in series and a new and oversized drainfield. “Again, Brittnie’s customer interaction skills made all the difference with this customer, and now we have another friend of the family,” says Jason.

#### **Managing resources**

Jason’s Septic has matched its equipment resources to market demands and crew capabilities. Josh Spano works beside Jason as a

multi-talented helper. While Jason’s mornings are on the vacuum truck, a 1995 White Volvo GMC with a 2,500-gallon tank, Josh is usually at a job site finishing the prior day’s tasks or getting ready for the afternoon’s work.

The company has two backhoes outfitted for specialized use. A 2008 Cat 430E is used for all digging, and a 1990 John Deere backhoe is used for backfilling and final grading, and to transfer aggregate from job site stockpiles to the point of installation. A 1995 Ford F350 pulls a gooseneck trailer used to mobilize machines and material.

Installation work sometimes requires reliance on trusted subcontractors. Usually it is a trade-related license requirement that forces subcontracting, but sometimes customers ask for a referral for other work on their property.

Jason’s does not give such referrals because the company can’t control the customer’s relationship with the referred business. “I could lose a good customer over a referral, and customers are far too valuable to risk,” says Jason.

Brittnie adds, “Our marketing relies exclusively on our customers telling their friends and business associates about us. We want them to only have good things to say about us. We set ourselves apart by our honesty and forthrightness. We show up when we say we will, we make sure the customer knows what we will be doing and how much it will cost.”

During a customer’s first call, a self-confident and reassuring Brittnie builds a bond of trust with the caller. Treasuring customers, solving problems and building a network of friends who at first were customers are attributes that have made Jason’s Septic a success in a changing market. ■

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*Jim Anderson and David Gustafson are connected with the University of Minnesota onsite wastewater treatment education program. David is extension onsite sewage treatment educator. Jim is former director of the university's Water Resources Center and is now an emeritus professor, as well as education program coordinator for the National Association of Wastewater Transporters. Readers are welcome to submit questions or article suggestions to Jim and David. Write to [ander045@umn.edu](mailto:ander045@umn.edu).*

# Protecting the Soil

**In installing mounds and other at-grade systems, treat the existing soil like an essential resource — because that's exactly what it is**

**By Jim Anderson, Ph.D., and David Gustafson, P.E.**

**I**n Minnesota, we have used mound soil treatment systems for 40 years. Once our installers got over the fact that there were some specific requirements for constructing mounds, and once they saw that mounds required a pump and pressure distribution, we had great success.

Mound systems were developed to address several highly specific soil problems while maintaining the desired balance between making the surface water go away and treating the septic tank effluent. The issues addressed by mounds and other aboveground systems such as at-grades are shallow soils over bedrock, slowly permeable clay soils, and high water tables or seasonally saturated soil conditions.

Since these systems are used to solve soil problems, it should be obvious that the first priority is to protect whatever good soil there is on the site. There needs to be at least one foot of suitable soil to construct a mound. Suitable soil means a soil that accepts water and has an adequate depth to bedrock, saturated soil or another slowly permeable layer.

In all cases, the soil should be kept in a natural condition and not moved around or damaged. The topsoil — or A horizon — of the soil profile should be kept in place and not removed for future use. This part of the soil is generally the most permeable to water and air and the most biologically active.

Since we are solving problems



**Here is an example of how not to prepare a surface for an aboveground onsite treatment system.**

due to shallow soils, or suitable soils of limited depth, it becomes all the more important to protect the soil before, during and after system installation. Therefore, any traffic that might cause smearing, compaction or damage to the soil surface should be prevented.

## **Save the stumps**

The first consideration is slope. If the site is sloping, the system needs to be laid out on the contour, just like any other soil treatment unit. Establish the original grade elevation at the upslope edge of the absorption bed, and use that elevation as a reference throughout the installation process.

In wooded areas, trees should be cut off at the soil surface and the stumps left intact. Remember: The mission here is to protect the soil

from damage because we have a limited amount of it. Removing stumps will likely remove some of the soil. And in the case of loamy or clayey soils, the act of stump removal will result in smearing and compaction, reducing the soils' capacity to accept and treat effluent.

We have recently seen educational materials suggesting that stumps can and should be removed. From our considerable experience in wooded landscapes, this is exactly the wrong approach. The surface area taken up by stumps is relatively small compared to the entire infiltrative surface under the mound, and future subsidence under mound operating conditions is minimal. The risk of soil damage is too great to use any practice that will disturb large areas of soil that will be under the system.



**The clean sand for a mound is placed over the properly scarified soil surface.**





In scarifying the infiltrative surface, it is important to have the grass turned over.

### Roughing it

The total area under an above-ground system, including the area under the berms, should be roughened to break up any sod layers and to provide a suitable transition zone

If there is long grass on the site, it should be cut off to a height of no more than 2 inches — and shorter is preferable. The clippings or cuttings should be raked or otherwise removed from the site.

The supply line from the pump tank to the mound should be installed before surface preparation. This way, the trench can be properly backfilled and compacted to prevent formation of a pathway for effluent to seep out the toe of the mound along the piping trench.

**Remember that the priority is to maintain the limited soils found on the site and to protect their ability to accept and treat effluent. Using the wrong practice for surface preparation can turn what was a tough site into an impossible situation. So treat that soil very carefully.**

between the original soil and the clean sand fill that will be placed for mounds, or the rock media to be used for at-grade systems.

Prepare the site by breaking up the sod to a depth of 6 to 8 inches. Do this working perpendicular to the slope, and in the process eliminate any surface mat of vegetation that

can “slime off” and prevent infiltration of the effluent into the soil.

The best way to prepare the surface is to use your backhoe bucket teeth to leave the surface rough. Where possible, move your machine around the perimeter of the site, reaching out with the backhoe bucket.

You can also prepare the surface by using a moldboard, chisel plow,

or disc, if you have access to that equipment. Moldboard plow furrows should be at least 8 inches deep and should be thrown upslope. There should be no dead furrow under the system.

Do not use a dozer or front-end loader to prepare the surface, as these machines will smear and

compact the soil. Never use a walk-behind or tractor-mounted rototiller for surface preparation. Rototilling destroys the natural soil structure at the surface and will lead to compaction that reduces soil infiltration rates.

### Covering up

Once the surface has been properly prepared, installation should proceed immediately. Keep the surface free from all traffic and cover the soil to prevent rain from falling on the surface. Maintaining the soil's ability to accept effluent is critical to a successful mound or at-grade system. When the sand is placed, maintain at least 6 inches of sand under the tracks of the equipment to prevent soil compaction.

Remember that the priority is to maintain the limited soils found on the site and to protect their ability to accept and treat effluent. Using the wrong practice for surface preparation can turn what was a tough site into an impossible situation. So treat that soil very carefully. ■

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# Under the Limit

A low-pressure dosing system helps a designer and installer rescue the onsite system for a conservation group's new headquarters

By **Scottie Dayton**

**T**he onsite system serving the former Cliffdale Park restaurant in Port Murray, N.J., failed its real estate transfer inspection. The 750-gallon metal septic tank discharged under the gravel parking lot onto 6- to 12-inch river stones covered with sheet metal.

Heritage Conservancy, a conservation organization, purchased the property to provide 1,100 feet of public access to the Musconetcong River. Plans called for keeping the restaurant but converting the upstairs one-bedroom apartment to office space.

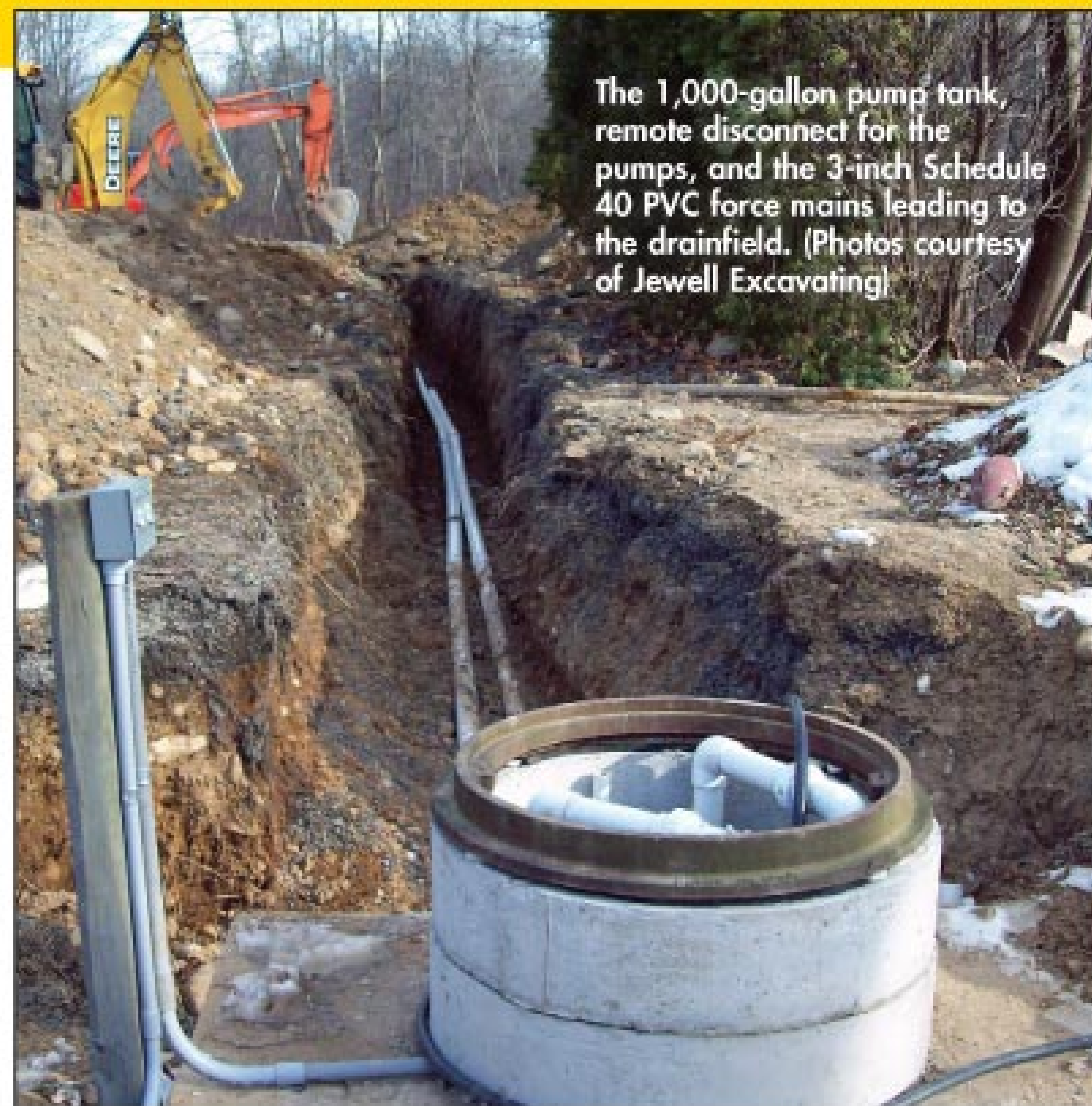
The organization did not want to pay the yearly inspection fee for systems larger than 2,000 gpd. Such systems also require a special permit from the state Department of Environmental Protection, and the town of Port Murray would need to sign as co-applicant. Local

officials wanted no part of that.

To reduce flows below 2,000 gpd, designer Paul Ferriero, P.E., of Ferriero Engineering Inc. in Chester, recommended downsizing the restaurant from 66 to 44 seats. The site, surrounded by the river, a wetland, and flood hazard zone, had no room for a secondary drainfield. Ferriero's solution used grease and septic tanks with low-pressure dosing lines, enabling the conservancy to meet its conservation goals and state code.

## Site conditions

Soils are sandy with percolation rates of 3 to 15 minutes per inch. The water table is 7 feet below grade. The site is 225 feet from the Musconetcong River, designated as a Wild and Scenic River. It also lies 26 feet from wetlands draining into the Musconetcong River watershed.



The 1,000-gallon pump tank, remote disconnect for the pumps, and the 3-inch Schedule 40 PVC force mains leading to the drainfield. (Photos courtesy of Jewell Excavating)

## System components

Ferriero sized the system to handle 1,980 gpd. Its major components are:

- Two 1,500-gallon grease traps. All tanks, made by Granville Concrete Products, Randolph, N.J., are single compartment and have traffic-rated lids, and cast-iron risers.
- Two 1,500-gallon septic tanks.
- 1,000-gallon lift station with duplex alternating 1/2 hp pumps from Goulds Pumps – ITT.
- 2,646-square-foot drainfield with two zones, each 23.5 by 28 by 8.5 feet deep.

- Model D10020N1 EZ Series duplex with attenuator indoor control panel from S.J. Electro Systems Inc., Detroit Lakes, Minn. (SJE-Rhombus)

## System operation

Kitchen graywater flows through a 4-inch Schedule 40 PVC line, through the grease tanks, and into the primary septic tank. Flow from the restaurant and office restrooms flows through a 4-inch PVC line to the primary and secondary septic tanks.

Effluent flowing into the lift station is dosed on demand to manifold A or B through 3-inch

## System Profile

<b>Location:</b>	Port Murray, N.J.
<b>Facility served:</b>	Restaurant and office space
<b>Designer:</b>	Paul Ferriero, P.E., Ferriero Engineering Inc., Chester, N.J.
<b>Installer:</b>	Bob Jewell, Jewell Excavating, Port Murray
<b>Site conditions:</b>	Sandy soil with percolation rates of 3 to 15 minutes per inch; water table 7 feet below grade
<b>Type of system:</b>	Pressure-dosed drainfield
<b>Hydraulic capacity:</b>	1,980 gpd



Schedule 40 PVC force mains. The alternating pumps run for 110 seconds, sending 260 gallons of effluent to the drainfield. Each zone has six 1.5-inch laterals 50 feet long on 3.75-foot centers. The laterals have 16 offset 1/4-inch orifices on 3-foot centers. The emitters face down, and the zones have an individual inspection port.

### Installation

Ferriero, also a licensed surveyor, staked out the tanks and drainfield area. A plumber separated the kitchen waste line and plumbed it out the back of the building to maintain the proper elevation.

Installer Bob Jewell of Jewell Excavating in Port Murray added two 45-degree elbows, bringing the line around the side of the building and into the primary grease trap.

### The primary septic tank and two grease tanks.



“The elevated kitchen line ran above the existing sewer line, enabling us to keep it and ensure proper pitch to the first septic tank,” he says.

His crew excavated the holes for the tanks after removing the existing septic tank. The men dug and set one tank per day using an EX 200LC Hitachi excavator with 1.75-cubic-yard bucket. Instead of an effluent filter, the septic tank outlets received a PVC gas deflector to prevent rising bubbles from carrying solid particles to the drainfield. Workers attached them to the bottom of the tee with a strap and plastic wing nut.

The parking lot had no curb, only a guardrail along the highway. Two cherry trees grew on the east side between the lot and the drainfield’s leading edge. Some trees also grew on the opposite side where the bank dropped off sharply to the wetlands.



Bob Jewell Jr., measures the distance between laterals to ensure that they are on 3.75-foot centers. Chris Hovencamp observes. The EX 200LC Hitachi excavator is parked at the far end of the drainfield.

Jewell trimmed the trees so the 46,000-pound excavator could park at the far end of the drainfield and backfill the laterals after installation. “I thought a lot about where to position the equipment, because if I got it wrong, we’d be stuck,” he says. “Once the sand and gravel went in, we’d have to work from the ends of the field. Neither side would have any room.”

Jewell’s 160 John Deere excavator and 550 bulldozer excavated the 47.25- by 56- by 8.5-foot-deep hole in 1.5 days, while dump trucks hauled away the material. The onsite code required Ferriero to inspect the excavation and sample three loads of K3 sand stockpiled for the system. “The sand is screened to 3/4 inch and can’t have any variances because of the area’s environmental issues,” says Jewell. “We weren’t allowed any field changes either.”

After workers installed a 3-foot lift of sand and lightly compacted it, Ferriero took another sample. They repeated the process the next day before the workers covered the sand with 18 inches of 1.5-inch stone. The drainfield required 950 tons of sand and 220 tons of gravel. Jewell used an excavator to pull back 6 inches of gravel before

installing the drip lines, which are not backflushed. The men bored the holes in the pipe by hand and deburred them. Because the laterals had staggered orifices, Jewell marked the pipes 1 through 12 with matching numbers on the manifolds.

Once the piping was installed, the excavators backfilled, but left a 3-foot-wide swath in the middle of the field for inspection. “All 12 lines had to be exposed to prove we had drilled the holes in alternating patterns,” says Jewell. “We marked the tops of the pipes so they couldn’t miss it.”

To prevent people from driving on the drainfield, Jewell used the excavator to reposition a telephone pole. It functions as a deadman to stop vehicles from going over the bank in front of the absorption bed. Ferriero then sent a survey crew to do an as-built drawing and shoot the final grades.

### Maintenance

The system is unregulated because it is less than 2,000 gpd. Maintenance is solely the owner’s responsibility. ■

### MORE INFO:

**Goulds Pumps – ITT**  
315/568-2811  
www.goulds.com

**SJE-Rhombus**  
888/342-5753  
www.sjerrhombus.com

The two 1,500-gallon septic tanks and 1,000-gallon pump tank. Note the line from the second grease tank at lower left.

This feature in Onsite Installer reports noteworthy conversations that take place in Installer Discussion, an e-mail based forum for industry professionals sponsored by COLE Publishing. The discussion forum enables exchange of information and ideas on a wide range of topics related to onsite wastewater treatment. To find out more about Installer Discussion, or to subscribe, visit [www.onsiteinstaller.com](http://www.onsiteinstaller.com).

# Odors from ATUs

Installation professionals discuss the possibility of bad smells from certain ATU designs and possible effective preventions and remedies

## Question:

Does anyone have any experience with ATUs that use what is essentially an agitator for aeration? I am wondering about odors, and about their ability to handle shock loads. I do designs for holiday homes, and some ATUs really stink when you fire up the plumbing on a long weekend after being away for a month.

## Answers:

➔ I have some. The aerator is a motor with a hollow central shaft that incorporates a hollow tube with an aspirator at the end down in the mixed liquor compartment. They also incorporate a fixed-film media that supports microbial life.

Typically the aerator runs 50 percent of the time, 30 minutes on and 30 minutes off. Feeding the

microbes is a problem for seasonal homes. If the unit is left in operation when not in use during the off seasons, the smells are not as bad. This is where old dog food can come in handy to ensure food for the microbes. If you use underground disposal of some kind then the intermittent odors are far less of an issue.

➔ If smell is an issue, you can add a charcoal filter to the exhaust. We have never seen a failure after an ATU here in our county, so I believe the worry over vacation homes using them is academic, and we have lots of vacation homes on Whidbey Island.

➔ If the unit is shut down when the home is vacant, it will surely go anaerobic (septic) within hours. The bugs will use up all of the oxygen present, and the contents will soon smell like normal septage. That would happen with any kind of ATU.

Then, when the unit is restarted,

the off-gasses will smell for a long time until the unit is again fully aerobic. I don't think there is any way to avoid such a problem, unless you leave the unit going all year.

I don't believe it has much to do with not having a good population of bugs — or lack of food — but more likely a lack of oxygen during down periods. My opinion is that any kind of ATU is not a good fit for a seasonal use. Packed bed filters are a better application for such situations. ■



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# Primary Treatment

Manufacturers offer a variety of tanks and accessories that deliver the first stage of onsite treatment and help extend drainfield life

By Benjamin Wideman

The septic tank is the simplest part of an onsite system, but its importance can't be understated: High-quality primary treatment preserves the life of the soil treatment unit. Here is a look at some of the latest products manufacturers offer to improve the primary treatment function. They include the tanks themselves, and a range of accessories that perform functions from filtering effluent, to making tanks accessible for maintenance, to hiding aboveground components from view.



a stainless steel screen installed to accommodate the flow requirements for the AIRVAC system. 866/968-9668; [www.thedirtybird.com](http://www.thedirtybird.com).

## Roto-molded lids

Roto-molded 12-, 18- and 24-inch septic tank lids from **RotoSolutions** are made of lightweight and durable polymers for easy handling and transport. They come complete with hardware kits that include stainless steel components. The lids are sold in boxes of six. They can be used with or without the sand-filled or foamed option and come in green or black. 800/868-0973; [www.rotosolutions.com](http://www.rotosolutions.com).

## Multipurpose lid

**Tuf-Tite Corporation** offers a 24-inch heavy-duty multipurpose flat lid that fits most commercially available risers. It has a molded-in, permanent polyurethane gasket and can be insulated to R-10. The center is designed to hold 70 pounds of concrete for added safety. 847/550-1011; [www.tuf-tite.com](http://www.tuf-tite.com).



Photographic Landscape Lids from Orenco Systems Inc.

## Lids blend in

**Photographic Landscape Lids** from **Orenco Systems Inc.** feature a set of images of three common landscaping elements — grass, bark mulch and river rock — so they blend into the background. Lids fit most brands of ribbed PVC pipe and come in 18-, 24- and 30-inch diameters. They are injection-molded of fiberglass and withstand a 2,500-pound wheel load. Polyurethane gaskets ensure a watertight seal. Stainless steel hex-drive screws help deter unauthorized entry. Tamper-proof bolts also are available. 800/348-9843; [www.orencosystems.com](http://www.orencosystems.com).



## Fiberglass tanks

**Flowtite fiberglass septic tanks** from **Containment Solutions Inc.** serve both aerobic and anaerobic applications, providing a cost-effective, long-term solution for homes, commercial developments, industrial and municipal installations. The tanks eliminate leakage and are engineered to meet and exceed current requirements and standards. IAPMO-approved tanks are available in sizes up to 12 feet in diameter and include fiberglass baffles and other accessories. 877/274-8265; [www.containment-solutions.com](http://www.containment-solutions.com).

## Tank sealing ring

The **Seal-R Ring** and the **Seal-R Lid** from **BrenLin Company Inc.**, help reduce septic tank installation labor expense and simplify tank access later. The Seal-R Ring is a lightweight, polyurethane-sealing ring. Installation creates a watertight seal between the tank top and riser maintenance pipe. The ring and riser pipe can be installed in minutes using a polyurethane foam sealant. The ring forms a barrier to groundwater.



The green Seal-R Lid is a cover for plastic dual-wall riser pipe. It is sturdy and lightweight and installs quickly using 4-inch stainless steel lag screws (included with the cover) in pre-formed holes. The device has a gasket to prevent groundwater entry. The lid allows rapid access for servicing. **888/606-1998; [www.seal-r.com](http://www.seal-r.com).**

#### Bypass protection

The **WW1 effluent filter** from **Clarus Environmental** includes a screen that remains in the outlet tee while the filter cartridge is removed for servicing. This bypass protection keeps solids in the tank and out of the drainfield. The filter's pleated design provides 132 linear feet of 1/16-inch filtration and encourages top-down filtration that extends service intervals. A twist-lock mechanism keeps the filter from floating out of the tee, and a locking tab keeps the bypass sleeve in place during servicing. A rubber gasket ensures that all effluent passes through the filter. **877/244-9340; [www.clarusenvironmental.com](http://www.clarusenvironmental.com).**



WW1 effluent filter from Clarus Environmental



Wolverine vent filter

#### Filter controls odor

The **Wolverine** vent filter (Model WLW-4) is a septic vent odor-control filter designed to eliminate septic and sewer gas odors in residential, light industrial or commercial applications. The housing has a cross-flow design. **866/667-8465; [www.stopsepticodor.com](http://www.stopsepticodor.com).**

#### Tank guide corners

**Sim/Tech Filter** offers **Sure-Set septic tank guide corners**. The devices help ensure watertight sealing of mid-seam and sectional tanks and tank tops by guiding the tank section or top into place. This accurately lines up the seam and helps keep sections from prematurely touching and affecting the placement of the butyl ribbon.

The devices are easy to use. After placing the bottom of a mid-seam tank, the user applies a small amount of butyl on a Sure-Set unit and pushes one into place on at least two corners of the tank seam. The butyl holds them in place while the user wraps a 2- or 3-inch strap around the tank and Sure-Sets to hold them securely.

While lowering the top half of the tank, the wider top end of the Sure-Sets, combined with the elasticity of the straps, receives and steadies the top. The top is then funneled into place by the Sure-Sets. Once the top half of the tank is in place the Sure-Sets can be removed and reused. **888/999-3290; [www.simtechfilter.com](http://www.simtechfilter.com).**



Sure-Set septic tank guide corners from Sim/Tech Filter

#### Wastewater screens

**SaniTEE wastewater screens** from **Bio-Microbics Inc.**, keeps solids in the septic tank, provides natural flow attenuation, and are easy to maintain. The line includes 4-, 8- and 16-inch-diameter screen sizes. The screens promote natural settling and keep gas-lifted particles from entering the outlet pipe. The devices have a self-cleaning exterior/internal cleaning swab, non-blinding angled slots with vertical orientation for deflection, and keyhole weirs above the solids exclusion ring, all to help prevent clogging. **800/753-3278; [www.biomicrobics.com](http://www.biomicrobics.com).**

#### Low-profile tanks

**Aquifer low-profile cistern tanks** from **Ace Roto-Mold**,

a division of Den Hartog Industries Inc., include 1,000-, 1,500-, 2,000- and 2,500-gallon units designed

for below and aboveground applications. Made for the storage of potable and non-potable water, the tanks feature a sectional ribbing design to withstand vertical soil pressures of up to 400 psf. Tanks can be buried up to 28 inches deep and backfilled empty. Multiple fitting locations are provided to accommodate a variety of plumbing configurations. The tanks are made from FDA-compliant resins and high-density polyethylene with UV inhibitors. **800/342-3408; [www.denhartogindustries.com](http://www.denhartogindustries.com).**



Aquifer tanks from Ace Roto-Mold

#### Odor-control covers

**Odor-eliminating tank covers** from **Polylok** help prevent odor problems by removing offensive odors as they leave the tank. The covers contain two pounds of activated carbon pellets. The 18-inch cover fits corrugated pipe, the 20-inch cover fits on Polylok 20-inch risers, and the 24-inch cover fits on any 24-inch corrugated pipe or Polylok 24-inch risers. The covers are easy to install and control odor in all septic system applications. **888/765-9565; [www.polylok.com](http://www.polylok.com).**



Odor-eliminating tank covers from Polylok

#### Combination offerings

**Dual-compartment septic and third-compartment pump tank packages** from **Crest Precast Inc.**, include an effluent filter installed on the outlet. Systems include a manhole installed to grade for service, chain and padlock over both manholes, and a center wall sealed between the septic and pump chambers. The tank concrete has a minimum 5,500 psi rating and a water cement ratios below .40 for increased durability and tanks have passed DOC vacuum testing requirements. **800/658-9045; [www.crestprecastconcrete.com](http://www.crestprecastconcrete.com).**



Septic and pump tank packages from Crest Precast Inc.

#### Concrete tanks

**Precast concrete septic tanks** from **Wieser Concrete** are available in a wide range of sizes and configurations to meet residential, commercial and other applications. Tanks are manufactured in a controlled environment for consistent quality and structure, are structurally engineered, and use post tensioning for strength and durability. They are vacuum-tested and watertight. Quality assurance technicians monitor and inspect all tanks throughout the manufacturing process. **800/325-8456; [www.wieserconcrete.com](http://www.wieserconcrete.com).**



Precast concrete septic tanks from Wieser Concrete

### Variable heights

The **Good Looking Septic Vent** from **Pagoda Vent Company** is made of aluminum and finished in exterior powder-coat paint. The unit, which comes with or without odor-control filters, is available in different heights. 888/864-1468; [www.pagoda-vent.com](http://www.pagoda-vent.com).



Good Looking Septic Vent from Pagoda Vent Company

### Retrofit covers

**Septic tank covers** from **Hedstrom Plastics** are designed for cost-effective installation of tank riser systems. Round polyethylene covers and square-to-round adapter plates are available for field installation of ground-level opening access to septic tanks and drainage junction boxes. Molded by rotational molding in thick-walled polyethylene with UV inhibitors, the covers fit industry-standard 18- and 24-inch double-wall corrugated poly-pipe. The black polyethylene adapter plates provide a seal between the septic tank sewer opening and the round double-wall polypipe. 800/765-9665; [www.hedstromplastics.com](http://www.hedstromplastics.com).

### Triple wall

**TW-Series** septic tanks from **Infiltrator Systems Inc.** have

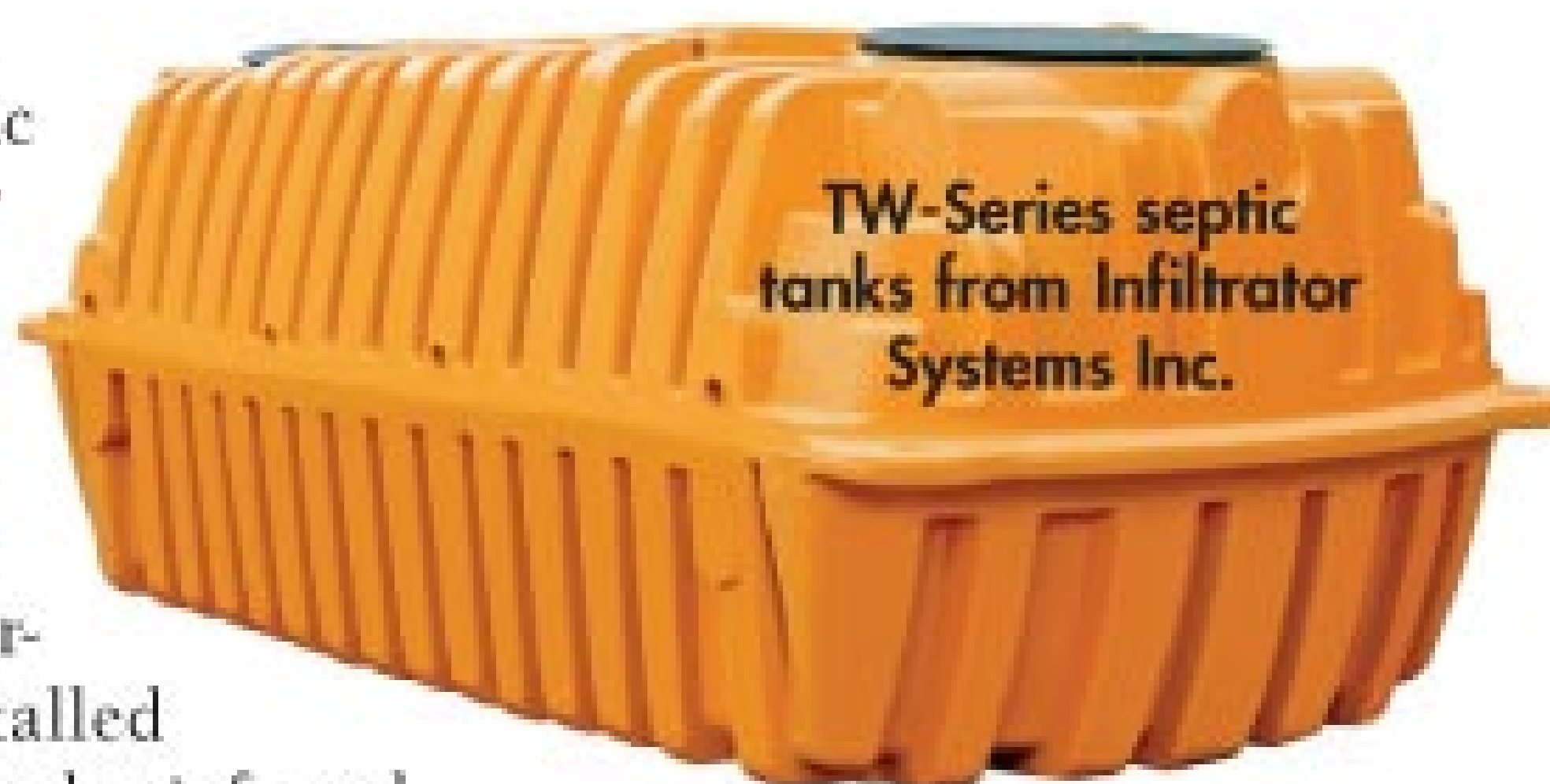
a triple-wall design manufactured with rotomolding technology.

The tanks also have permanent, factory-installed

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No special installation, backfill or water-filling procedures are required.

The unit can be pumped dry during pump-outs — there is no need to refill with water. The tanks resist flotation in high water table conditions and can be installed with 6 to 48 inches of cover. Units are available with single or dual compartments. 860/577-7030; [www.infiltratorsystems.com](http://www.infiltratorsystems.com). ■



TW-Series septic tanks from Infiltrator Systems Inc.

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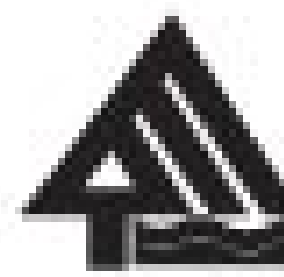
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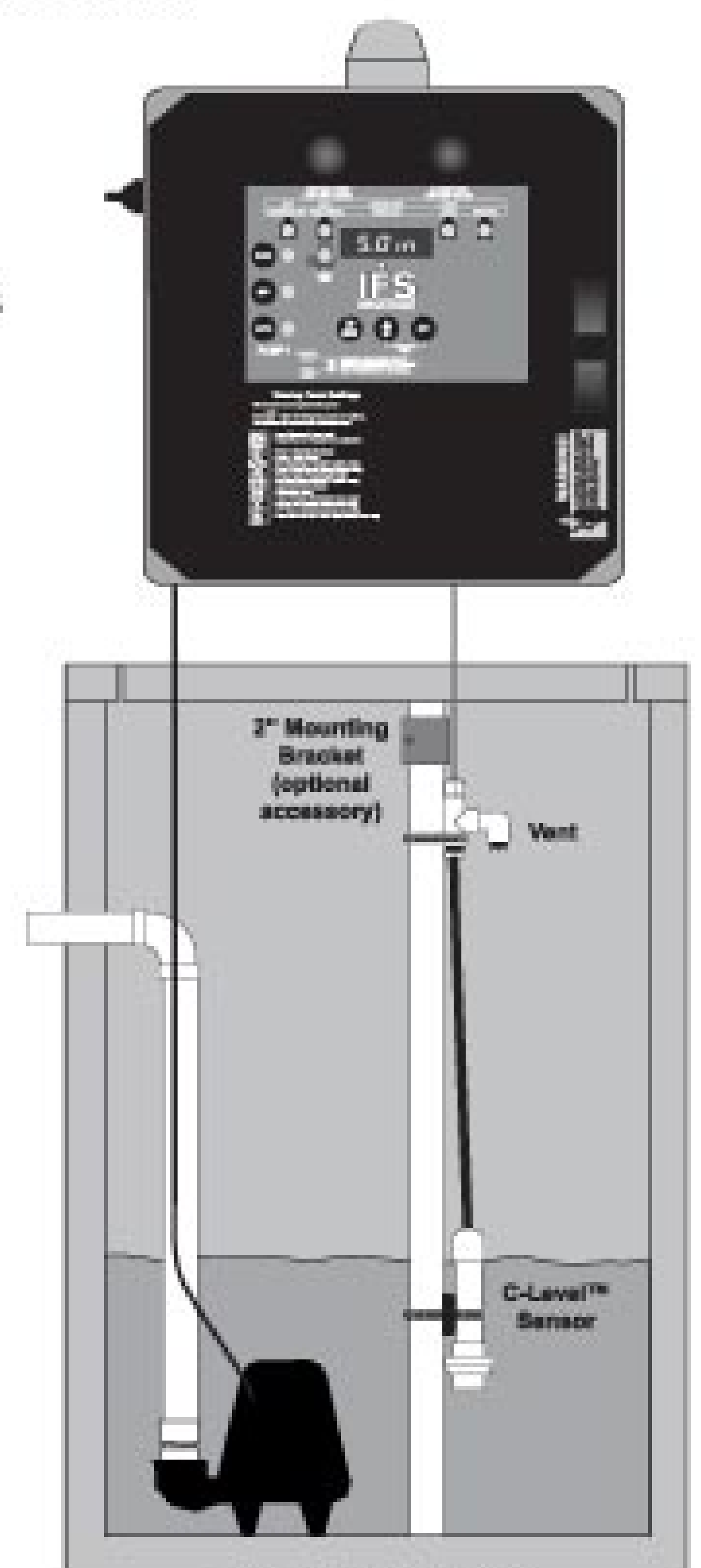
**SJE-Rhombus®** introduces the **C-Level™** Sensor for use with select **Installer Friendly Series®** panels.

The simple and accurate **C-Level™** sensor converts water pressure in a tank into a **low-voltage electrical signal** and sends it to the IFS control panel, which displays this level (in inches or centimeters) for **easier constant level monitoring** of the system. Pump activation and alarm levels can be adjusted using the **IFS panel touch pad**, eliminating the need to go into the tank for manual adjustment.

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- Compact design works well in confined space applications
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  - IFS Single Phase Duplex Demand/TD
  - IFS In-Site® Simplex Event Monitoring
  - IFS In-Site® Duplex Event Monitoring
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Watch an introductory video on the **C-Level™** floatless sensor at [www.sjerrhombus.com](http://www.sjerrhombus.com)!



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"Rules and Regs" is a monthly feature in Onsite Installer. We welcome information about state or local regulations of potential broad interest to onsite contractors. Send ideas to [editor@onsiteinstaller.com](mailto:editor@onsiteinstaller.com).

# Florida Seeks Nitrogen-Reduction Strategies

By **Scottie Dayton and Doug Day**

An interim report on Florida's plans to develop passive strategies for nitrogen reduction for onsite sewage systems was released in February. The study is in response to legislative action in 2008 creating a 3- to 5-year project to reduce nitrogen in the state's bodies of water.

There are 2.3 million onsite systems in the state serving about one-third of the population, according to the report, which also acknowledges several other ways that nitrogen gets into soils and water. The report is available online at

[www.myfloridaeh.com/ostds/pdf/s/forms/InterimReport.pdf](http://www.myfloridaeh.com/ostds/pdf/s/forms/InterimReport.pdf).

Two bills affecting onsite systems in Florida are under consideration. House bill AB 727 and Senate bill SB 1738 would require periodic inspection of septic systems and require the Department of Health to administer an inspection program and a grant program to help owners make repairs to their systems.

According to the Department of Health, only 1 percent of systems in the state are actively managed and most were built at least 30 years

ago under less strict rules. The bills would also revise fees for contractors. Both bills are before committees.

## Arkansas

The state Department of Health is considering changes to its onsite wastewater rules. Hearings were held in February. A draft of the proposed language is available at [www.healthyarkansas.com/rules\\_regs/onsite\\_wastewater\\_draft\\_2009.pdf](http://www.healthyarkansas.com/rules_regs/onsite_wastewater_draft_2009.pdf).

## Maine

Maine is updating its subsurface wastewater disposal regulations. A stakeholders group was formed to review and comment on the proposed changes. A formal rulemaking process was expected to begin last spring. Audio recordings of the stakeholders group meetings are available at [www.maine.gov/dhhs/eng/plumb/index.htm](http://www.maine.gov/dhhs/eng/plumb/index.htm).

## Maryland

Due to high demand for its septic system upgrade program, Maryland is giving priority to grants for systems that pose the greatest threat. It has also added an income-based sliding scale to the grant program.

The Department of Environment has upgraded about 2,000 septic systems through its Nitrogen-Reducing Septic Upgrade Program. Grants are now going only to systems in critical areas — within 1,000 feet of tidal waters. Other applications have been put on a waiting list.

## Washington

As of January 1, 2012, only septic tank sizes and models approved and registered by the Department of Health will be allowed. Manufacturers must confirm at the factory that the tanks are watertight. The

rule, passed last fall, also encourages watertightness testing after installation for systems below 3,500 gpd (such testing is already required for larger systems). Manufacturers will have to renew their registrations.

Preliminary language for a proposed graywater rule must be completed by December 2010. The rule would provide homeowners with a simple way to reuse graywater for subsurface irrigation and would establish requirements for more complicated subsurface dispersal.

## Minnesota

Counties had until June 30 to incorporate the 2008 septic rules overhaul into their local ordinances. Officials statewide are not complying because the state Pollution Control Agency is still correcting flaws discovered in the code after officials raised concerns about the rules.

The Association of Minnesota Counties had a bill before the Legislature that would allow counties to delay accepting the rules for two more years. According to the agency, counties that do not adopt the new rules by the June deadline could have state funding withheld.

## Idaho

A bill with amendments approved by the House Environment Committee would eliminate two specific rules: One that limits expansion of homes on nonconforming onsite systems to 10 percent of the current square footage, and another that in some cases requires dual drainfields for community sewer systems. The amended bill would allow expansions of any size as long as no additional bedrooms were added. Other changes would unify the appeal process. ■

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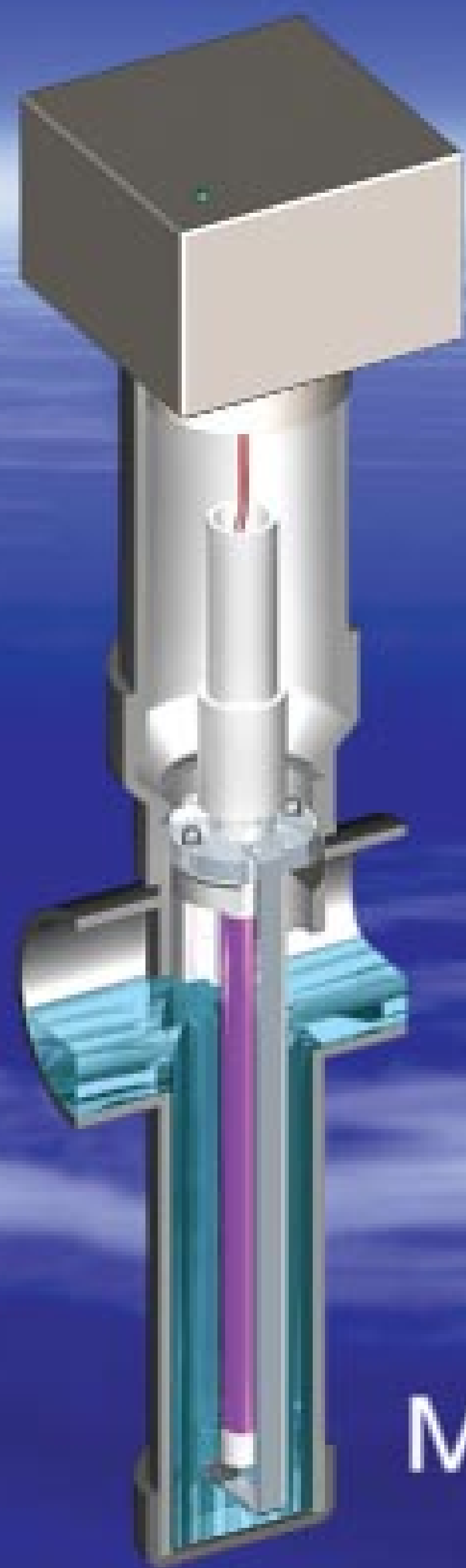
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# Dealing with Clarifier Scum

A little investigation can point O&M professionals to remedies for a common operating problem found in aerobic treatment units

By Kit Rosefield

I was privileged to present at the 2010 Pumper & Cleaner Environmental Expo International in Louisville on operation and maintenance of aerobic treatment units.

The presentation was on the basics, addressing the vast business opportunities in maintaining the many technologies emerging in our industry. In attendance were some seasoned O&M professionals, and they had good technical questions. So here is a follow-up for those who are dealing with a common problem.

## Why does it happen?

One of the most common questions is how to deal with scum on the clarifiers. Sometimes the scum consistency is heavy and greasy, and

sometimes it is light and fluffy. You can check this by running it between the fingers of your gloved hand.

situations can cause scum formation in the clarifier. We first need to look upstream and ask about the use of the system. Is the system serving a commercial facility such as a restaurant, deli, laundry or auto shop? Or, if a residence, what are the cooking habits? Do the occupants run a home business? Or is it an intermittently used vacation property? Any one of these situations can cause this condition.

## Try education

If the upstream findings are bad management practices resulting in FOG down the drain, we can begin with employee or homeowner education. Good practices include diverting high-strength waste by pouring oils and greases into the

temperature cleaning systems, FOG does not have time to solidify in primary treatment and ends up surfacing in the clarifier. Another common problem in commercial facilities is the use of chemical degreasers. These products emulsify greases, sometimes sending FOG downstream into the soil treatment area. That is not a good scenario, as the soil pores will eventually plug, causing failure.

## Bulking sludge

If we determine that FOG is not the problem and the scum is light and fluffy, then we most likely have a condition known as bulking sludge. Traditionally ATUs operate with a continuous air supply. In times of low or no flow, dissolved oxygen levels increase in the clarifier. This causes an imbalance affecting the nature of the sludge, which typically settles into an anaerobic state. With the higher oxygen levels, nitrogen gas releases at a high rate, carrying settled sludge to the surface — thus the fluffy effect.

ATU manufacturers are addressing this issue in various ways. Most common is to program a vacation mode into the control panel, where the air pump can be sequenced on and off to control the DO level.

Others are looking at adding an alternate food supply when the facility is not in use. I have heard of some using dog food, commercial fertilizer, corn syrup or other carbon sources that keep the bacteria healthy and consuming both food



Scum caused by fats, oils and grease (FOG).



Light, fluffy scum caused by bulking sludge.

and oxygen, thus maintaining the needed balance, or food-to-micro-organism (FM) ratio.

This approach is intended to and will increase BOD, so it is important to find the balance and avoid overloading the system. The best first step is to consult with the manufacturer for advice. If it is an older unit and you can't get technical support, it might help to add a time clock for the air supply, and an automatic food source, or do both.

If you go this route, management needs will greatly increase, especially during setup and fine-tuning. The bacteria in aerobic processes are very sensitive and can

sometimes it is light and fluffy. You can check this by running it between the fingers of your gloved hand.

If you suspect fats, oils and grease (FOG), a laboratory analysis can verify. It's important to work with a certified water-quality lab, as they use special glass containers with preservatives that stabilize the samples.

Either way, we need to ask: Why is it happening? A number of

trash, and wiping hands, surfaces and utensils with disposable towels.

In some cases, even good practices can't make up for systems that were not designed for the facilities they serve. A grease interceptor installed between the facility and the treatment unit is a good option in most cases. Some ATUs are designed with minimal trash trap storage before the aeration chamber.

But if the facility uses high-



easily be killed off if starved of food or oxygen for extended periods.

Achieving the proper balance of air on/air off to maintain the optimum 2 mg/l DO will require frequent monitoring. I have heard of sequencing from 20 minutes off/30 minutes on, to 2 hours off/6 hours on. It will depend on the type of air supply and operating system: diffusers, airlift, recirculation or others.

### Settling test

In any case, the scum on the clarifier needs to be removed by vacuum truck, pumping, or manually transferring it to the primary chamber of the treatment system.

In addition, controlling the solids levels in the system is critical. Routine O&M should always involve a settling test. A sample of mixed liquor is drawn from the aeration chamber and placed in a straight-walled container with graduated markings. A clear beaker or graduated cylinder is best.

The sample should be set aside for 30 minutes and checked for settleability. The desirable range of solids should be between 20 and 60 percent. This test is like a snapshot of conditions in the clarifier.

If the solids are above 60 percent, a portion of the sludge should be removed (wasted) from the clarifier. The minimum 20 percent is also important, as this sludge is considered activated and contains hungry bacteria that will be returned to the aeration chamber as part of the system's function.

Of course, a number of other operating conditions can cause treatment problems. Toxic loading, overuse and inflow/infiltration are topics in themselves. In summary,

here are some of the key points for evaluating and controlling scum in clarifiers:

- Determine the characteristics of the scum
- Perform laboratory analysis if necessary
- Evaluate the use of the system
- Educate system users
- Consult with system manufacturer
- Upgrade the system with appropriate technologies, such as a grease interceptor, air-supply controller, or alternate food source
- Control solids in system
- Perform all necessary maintenance
- Record all findings and activities
- Learn, learn, learn

### Learning places

There are good programs for professionals interested in learning more about the operation, maintenance and monitoring of advanced treatment systems. The Consortium of Institutes for Decentralized Wastewater Treatment has an excellent program offered as a national certification by the National Association of Wastewater Transporters. Check the NAWT Web site at [www.nawt.org](http://www.nawt.org).

### About the author

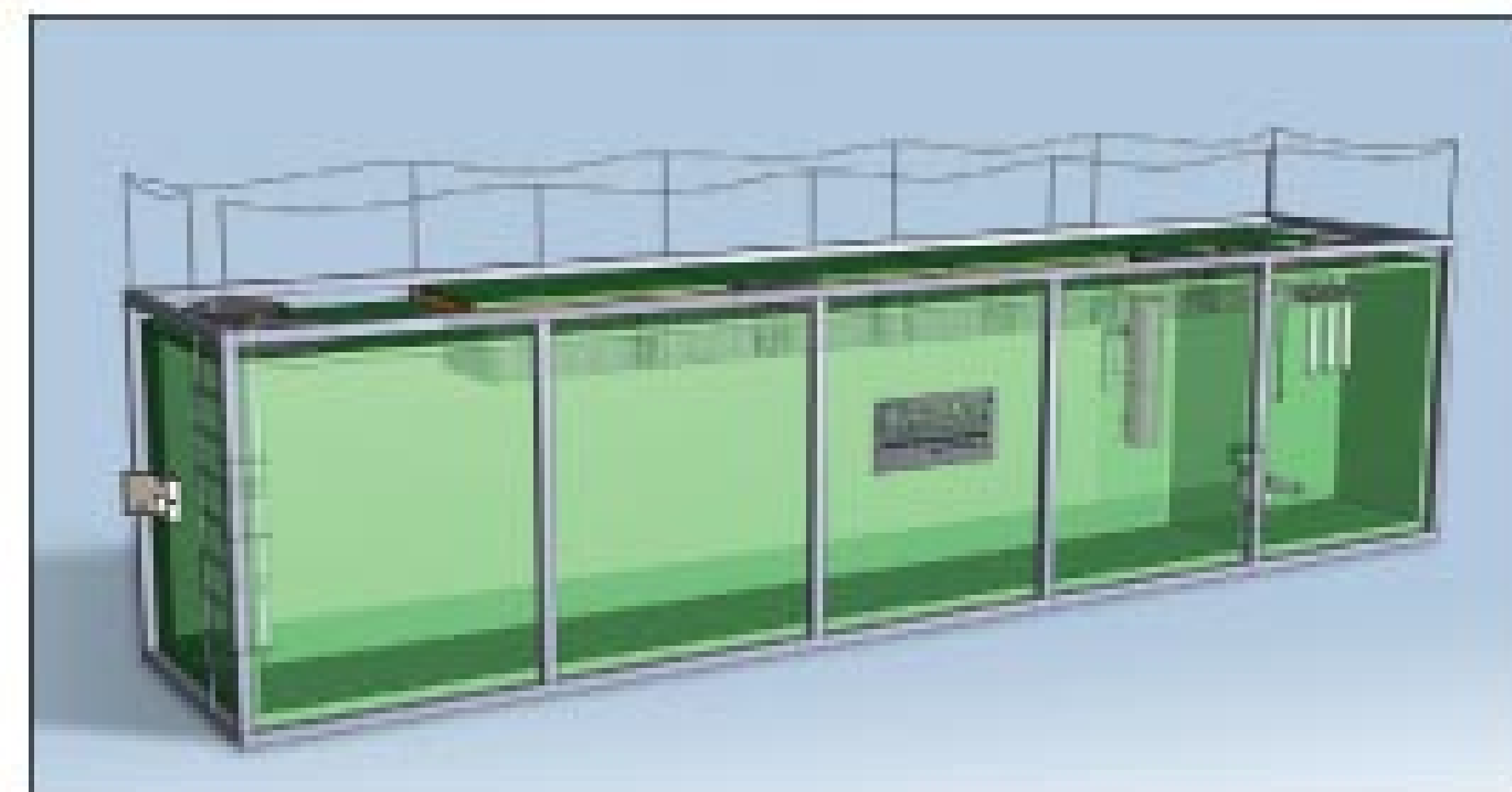
Kit Rosefield is an adjunct instructor at Columbia Community College and a trainer for NAWT and the California Onsite Wastewater Association. His company, Onsite Wastewater Management in Mi-Wuk Village, Calif., has a consumer education service at [www.septicguy.com](http://www.septicguy.com). Reach him at 209/770-6760 or [kit@septicguy.com](mailto:kit@septicguy.com). ■

## PRODUCT NEWS

June 2010

### Orenco Offers AX-Mobile Treatment System

The AdvanTex AX-Mobile 5,000 gpd treatment system from Orenco Systems Inc. comes in a 20-foot molded fiberglass-reinforced plastic container for remote locations or disaster relief. Units require no excavation and almost no plumbing. The system has structural insulation panels and treats wastewater to the same levels as the AdvanTex 1 mgd facility. An optional customized control unit added at the top protects operators from the weather. **800/348-9843; [www.orenco.com](http://www.orenco.com).**



### SJE-Rhombus Launches C-Level Sensor

The C-Level sensor from SJE-Rhombus uses floatless technology to convert tank water pressure into a low-voltage electric signal that is sent to the IFS control panel for constant tank level monitoring. The system is designed for tight spaces and provides an option for a redundant pump off-float and high water alarm in regions where the operations are required. **888/342-5753; [www.sjrhombus.com](http://www.sjrhombus.com).**

### AlturnaMATS Introduces Galvanized Turn-A-Link

Steel Turn-A-Link connectors from AlturnaMATS feature a galvanized coating to resist rust. The portable roadway linking system is available in round single or double and flat single or double configurations. **888/544-6287; [www.alturnamats.com](http://www.alturnamats.com).** ■



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## Seeking flexibility

Colorado Professionals in Onsite Wastewater (CPOW) is working with the state Department of Public Health and Environment to revise onsite regulations. The state is considering a performance approach based on risk that should allow more flexibility when dealing with varied site characteristics.

Bob Wright of Church Onsite Wastewater and Kim Seipp of High Plains Sanitation are the association's newest National Association of Wastewater Transporters (NAWT) certification trainers. They are scheduling presentations statewide and have developed an Onsite Basics course for health department employees.

## First conference

More than 130 professionals attended the first decentralized Pennsylvania Wastewater Conference and Trade Show produced by the Pennsylvania Septage Management Association, NAWT, Pennsylvania Association of Professional Soil Scientists, and the Pennsylvania Onsite Wastewater Recycling Association.

Highlights included legislative updates, EPA management guidance to individual states, and information on the Home Improvement Consumer Protection Act (HICPA). Speakers provided knowledge attendees could use immediately in their businesses. The next conference is Jan. 23-25 at the Lancaster County Convention Center. Call Stacy Henninger at 717/763-7762 or visit [www.pasma.net](http://www.pasma.net).

## Accreditation agency

The California Department of Public Health approved the California Onsite Wastewater Association as an accreditation agency for recognized providers of continuing education units for registered environmental health specialists. COWA considers it a big step forward in supporting its efforts to establish minimum standards of practice based on nationally developed programs.

## PSA project

The Michigan Septic Tank Association approved funding for three 30-second public service announcements to air on several TV stations. Produced by the National Environmental Services Center, the messages encourage routine onsite system maintenance, then direct viewers to the association's Web site.

## CALENDAR OF EVENTS

### June 6-9

National Environmental Health Association Educational Conference and Exhibition, Albuquerque, N.M. Call 866/956-2258 or visit [www.neha.org](http://www.neha.org).

### June 9-11

Arizona Onsite Wastewater Recycling Association Conference and Exhibition, Radisson Woodlands Hotel, Flagstaff. Call Suzanne Ehrlich at 334/396-3434 or e-mail [Suzanne.Ehrlich@co.yavapai.az.us](mailto:Suzanne.Ehrlich@co.yavapai.az.us).

### Aug. 5-7

Florida Onsite Wastewater Association Conference and Trade Show, Daytona Beach Convention Center. Call 407/937-2228 or visit [www.fowaonsite.com](http://www.fowaonsite.com).

### Aug. 27-28

Georgia Onsite Wastewater Association Conference, Callaway Gardens, Pine Mountain. Call 678/646-0379 or visit [www.onsitewastewater.org](http://www.onsitewastewater.org).

## TRAINING & EDUCATION

### NAWT

The National Association of Wastewater Transporters has these sessions in its ongoing training and certification programs:

- Aug. 26-27 – Inspection Training and Certification, Flagstaff, Ariz.
- Sept. 15-16 – Waste Treatment Symposium, Washington, Pa.
- Oct. 14-15 – Inspector

Certification, Monterey, Calif.

- Nov. 11-12 – Operation and Maintenance Part 2, Mill Valley, Calif.
- Dec. 2-3 – Installer Training, Sonora, Calif.

Call at 800/236-6298 or visit [www.nawt.org](http://www.nawt.org). For California classes, call Kit Rosefield at 530/513-6658 or visit [www.cowa.org](http://www.cowa.org). For Arizona classes, call Kitt Farrell-Poe at 520/621-7221.

### Alabama

Licensing classes are the joint effort of the Alabama Onsite Wastewater Association (AOWA) and University of West Alabama (UWA). Courses are at UWA-Livingston campus unless stated otherwise:

- June 24-25 – Continuing Education, Dothan
- July 8-9 – Pumper
- July 28-30 – Basic Installer

The first day of Continuing Education classes is for installers and the second day is for pumpers and portable restroom operators.

Call 334/396-3434 or visit [www.aowa.org](http://www.aowa.org).

### Arizona

The Arizona Onsite Wastewater Recycling Association has these courses at Flagstaff:

- June 8 – NAWT Inspection Training and Recertification
- Aug. 26-27 – NAWT Inspection Training and Certification

Call Kitt Farrell-Poe at 520/621-7221 or e-mail [kittfp@ag.arizona.edu](mailto:kittfp@ag.arizona.edu).

### California

The California Onsite Wastewater Association is offering a System Controls class on Aug. 13 at Sonora. Call Kit Rosenfield at 530/513-6658 or visit [www.cowa.org](http://www.cowa.org).

### Florida

Courses are at the Florida Onsite Wastewater Association Training Center in Polk City unless stated otherwise:

- June 9 – Installer Program I, Jacksonville
- June 10 – Installer Program

I, DeFuniak Springs

- June 14-15 – Master III-Basic FL Soils
- June 16-17 – Master I-System Design & Function
- June 17-18 – Master II-System Materials & Regulatory Requirements
- June 23 – Installer Program II, Hialeah
- June 24 – Installer Program II, Bradenton
- July 7 – Onsite Installer Maintenance Training, Part A
- July 8 – Onsite Installer Maintenance Training, Part B
- July 14 – Installer Program II, Hawthorne
- July 15 – Installer Program I, Daytona Beach
- July 21 – Installer Program I, Key Largo
- July 22 – Installer Program I, Clearwater

Contact FOWA at 321/363-1590 or [www.fowaonsite.com](http://www.fowaonsite.com).

### Iowa

The Iowa Onsite Wastewater Association is offering these courses at Cedar Rapids:

- Aug. 23-24 – CIOWTS Overview
- Aug. 25 – Troubleshooting Onsite Systems

E-mail Alice Vinsand at [execdir@iowwa.com](mailto:execdir@iowwa.com) or visit [www.iowwa.com](http://www.iowwa.com).

### Minnesota

The University of Minnesota Extension has these classes:

- June 7-8 – Inspecting Onsite Systems, Waseca
- June 9-10 – Soils, Brainerd
- June 11 – Soils Continuing Education, Brainerd
- June 18 – Soils Continuing Education, Rochester
- June 24 – Soils Continuing Education, Willmar
- July 8 – Soils Continuing Education, Grand Rapids

Call Nick Haig at 800/322-8642 or visit [www.septic.umn.edu](http://www.septic.umn.edu).

### New England

The New England Onsite Wastewater Training Center at the Uni-



versity of Rhode Island in Kingston has these workshops:

- July 14 – Microbiology for Wastewater Professionals
- July 15 – Surveying Techniques for the Wastewater Professional
- July 28-29 – Advanced Soil Morphology

- Aug. 12 – Surveying Basics for the Onsite Wastewater Contractor  
Call 401/874-5950 or visit [www.uri.edu/ce/wq](http://www.uri.edu/ce/wq). For soil course information, call Mark Stolt at 401/874-2915 or e-mail [mstolt@uri.edu](mailto:mstolt@uri.edu). ■

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## INDUSTRY NEWS

June 2010

### NOWRA Names Executive Director

Eric Casey is the new executive director of the National Onsite Wastewater Recycling Association. The NOWRA board of directors approved his appointment in a special meeting on May 10, and he started work on June 1.

Before joining NOWRA, Casey was president of Casey Management & Marketing Services, a consulting firm in Arlington, Va., providing management and consulting services to trade and professional associations.

Before that, he held senior management positions for associations involved in the business travel, direct mail, financial services and forestry industries. He holds an undergraduate degree from the University of Virginia and an MBA from The George Washington University.

### Zoeller Adds Clarus Environmental Product Line

Clarus Environmental, provider of environmentally sustainable water-quality products, is the newest member of the Zoeller Family of Water Solutions. Clarus offers a complete line of wastewater collection, treatment and disposal systems.

### Bio-Microbics Introduces S.O.S. Program

The Save Our Septic Prevention-Remediation Program from Bio-Microbics provides homeowners with a money-back warranty on the installation of a RetroFAST septic system. Under terms of the program, if after one year from the date of installation the RetroFAST system does not remediate the existing failed system, the homeowner is entitled to the refund amount of the system. ■



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## BUSINESSES

**South Florida Commercial Real Estate, Plumbing, Septic & Sewer Business For Sale.** Established in 1969, owner is moving on. Nearly 8,000 customers in database including some contracted. Established name with real estate on turnpike. Real estate appraised in excess of \$2 million, business grosses in excess of \$1 million, close to \$1 million in equipment including Vactor, Guzzler and Safe Jet trucks. Equipment has been featured in *Cleaner* magazine. Assumable SBA loan for bulk of selling price. \$2,799,000 for the entire package. E-mail jeffb@colepublishing.com or call 800-257-7222 and ask for Jeff Bruss for more details. **A B2 Business Brokerage Listing - www.BTwo.biz.** (IBM)

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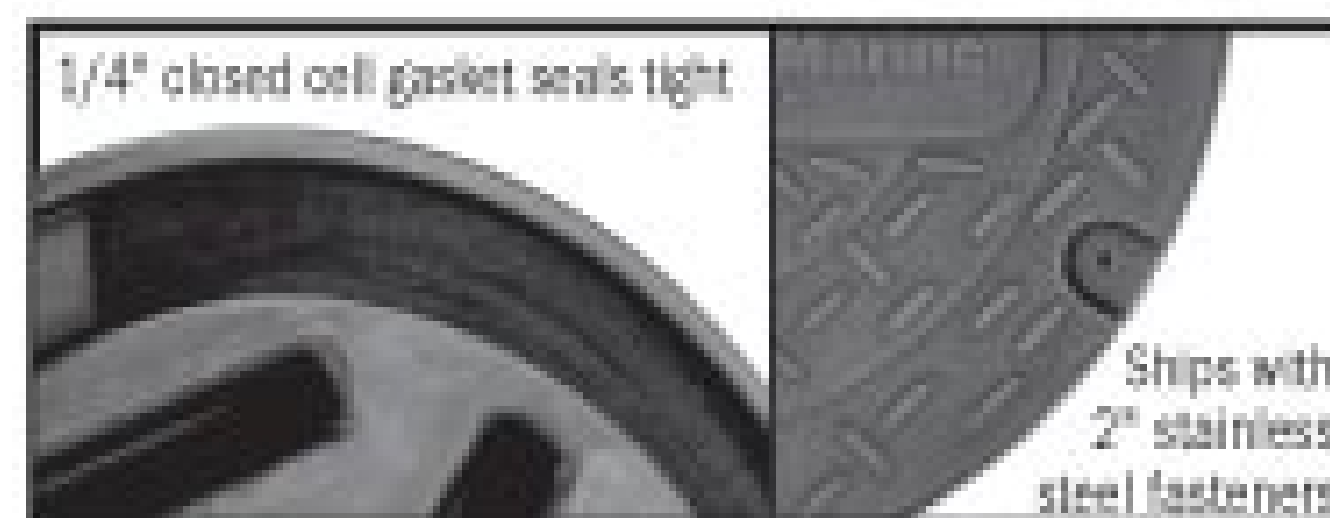
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