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Page 20

Learn about
battery technology
Page 24

California drip field
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Page 34

2013

FAMILY TIES

Minnesota's Flygare family builds a full-service excavating and installation company powered by referrals and teamwork

PAGE 12



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PAGES 20, 26 & 54



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contents

December 2013



COVER STORY

12 Family Ties *By Scottie Dayton*

ON THE COVER: For more than 21 years, the Flygare family has been installing septic systems around Annandale, Minn. From left, Darren, Debbie and Dean Flygare are shown with their Cat excavator. Dean and Debbie are grooming son Darren to take over the family business one day. (Photo by Mary R. Christen)

8 Editor's Notebook: Do it in December

After a busy year digging in the ground, it's time to fine-tune your business for greater profitability.

By Jim Kneiszel

10 @onsiteinstaller.com

Be sure to check out our exclusive online content

18 Basic Training: Piping For Trenches

The right backfill material and following a careful, step-by-step bedding process will ensure an onsite system's pipes will function properly for the long haul.

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

20 Pumper & Cleaner Expo: Time Well Spent

Marking my 10th Pumper & Cleaner Expo, here are nuggets of advice I'd give first-time visitors to the biggest and best environmental services trade show.

- Jim Kneiszel

22 Rules and Regs: Idaho environment officials developing new onsite system setback regulations

- Doug Day and Sharon Verbeten

24 Machine Matters: Battery Basics

As installers head into winter maintenance season, a lead-acid battery expert explains cold cranking amps and the complex chemistry behind an important component in your trucks and equipment.

- Peter Kenter

26 Pumper & Cleaner Expo: Visit Indy Neighborhoods

Six historic districts showcase active art and music scenes for visitors to the Pumper & Cleaner Environmental Expo.

- Sharon Verbeten

28 Notes From NOWRA: What is the EPA Decentralized Wastewater Management Partnership ... and why should you care?

- Eric Casey

34 System Profile: Keeping the Forest and the Trees

A flexible layout and hand digging allows Shear Builders to install a large drip field in a stand of virgin timber.

By David Steinkraus

38 Accredited Education & Training - 2014 Pumper & Cleaner Expo

54 Expo Spotlight: Show guests received firsthand look at self-cleaning UV system

- Ed Wodalski

55 Association News

56 Product Focus: Business Diversification - Pumping and Onsite System Maintenance

- Craig Mandli

58 Industry News

59 Product News

Coming Next Month: January 2014

ISSUE FOCUS: Pumper & Cleaner Pre-Show Issue/Exhibit Preview

- State of the State: What's new in Iowa?

- Machine Matters: The advantages of tire pressure monitors

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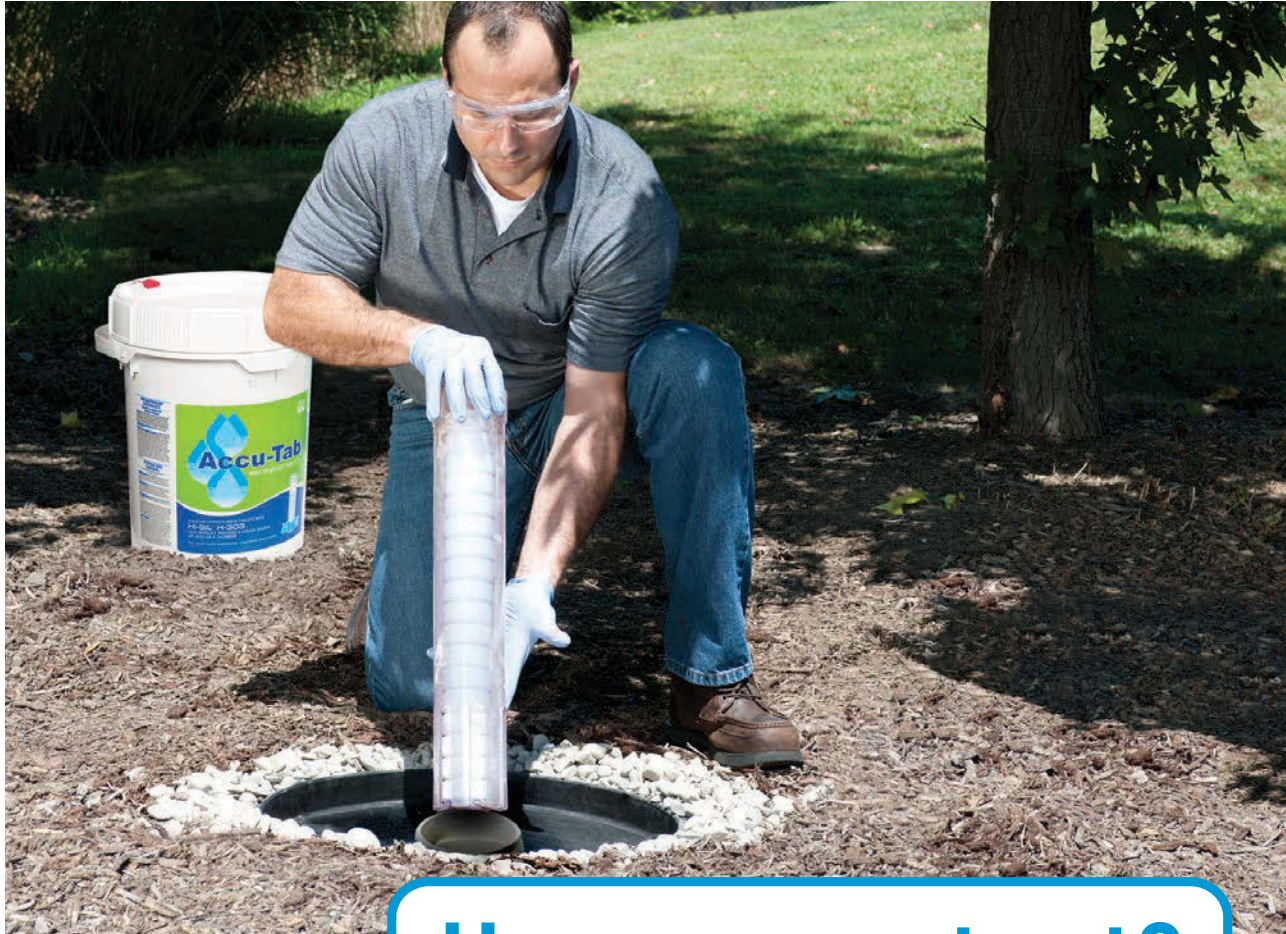


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advertiserindex

DECEMBER 2013

COMPANY PAGE

Alderon Industries, Inc.....	9
Alita Industries, Inc.	37
Axiall, Inc./ACCU-TAB	5
Bio-Microbics, Inc.	10
BrenLin Company, Inc.....	36
BS Design Corp. (The Dirty Bird).....	59
Crest Precast, Inc.	23
CSI Controls.....	19
Dalmaray Concrete Products Inc.	59
Eljen Corporation.....	17

COMPANY PAGE

Hedstrom Plastics.....	23
Infiltrator Systems, Inc.....	19
InviziQ.....	2
Jet Inc.....	59
NEHA -	9
National Environmental Health Association	
Norweco, Inc.....	11
Orengo Systems, Inc.	3
Pagoda Vent Company.....	59

COMPANY PAGE

Polylok.....	60
Presby Environmental, Inc.	6
RCS II, Inc.	59
RotoSolutions, Inc.....	58
Salcor, Inc.....	15
See Water Inc.	29
Septic Services, Inc.	27
Septronics, Inc.....	25
Sim/Tech Filter Inc.	59

COMPANY PAGE

Simple Solutions Distributing LLC....	59
SJE-Rhombus®	23
SPI - Septic Products, Inc.....	37
T&T Tools, Inc.....	21
Tuf-Tite Inc.....	7
Wieser Concrete Products, Inc.....	37

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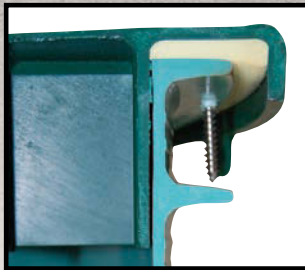
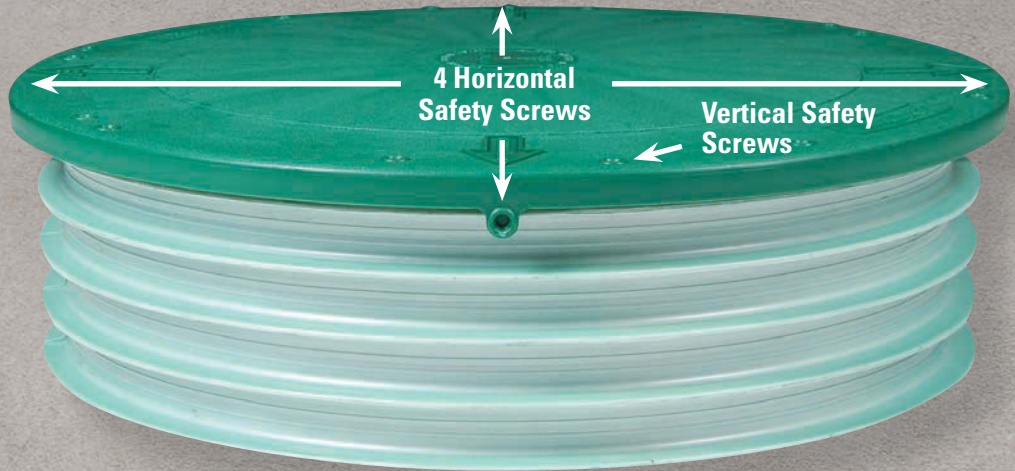
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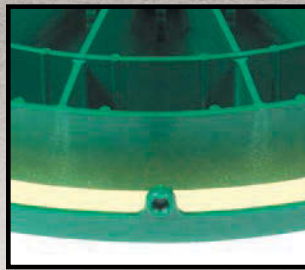
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Do it in December

After a busy year digging in the ground, it's time to fine-tune your business for greater profitability

By Jim Kneiszel



I can hear the collective sigh from installers in most parts of the country right about now. By all accounts, it was a busier year in 2013, and you have a hard-earned rest coming your way if you're in frozen ground country.

As busy as many of you were last summer and fall, you probably let some important initiatives slide while tending to customers' installing needs. Now is the time you can get back on track and whip your small business into shape after going full bore for several months.

Here are a few areas where you can retrench and move forward in your effort to build revenue and operate more efficiently:

Carefully go over your mini-excavators, skid-steers and other equipment, refresh lubricants, examine wear items and remove all the accumulated grime from time in the field. And take a critical look at a replacement schedule for each machine.

Create a new marketing campaign.

When the bottom dropped out of construction a few years ago, you pledged to reinvent your approach to advertising and promoting your business. Maybe you didn't get around to it before you got busy again. Set a marketing budget based on the new economy and look for creative and effective ways to use it. Maybe you drop the phone book ads and turn to social media. Maybe the weekly newspaper gives way to targeted direct mail marketing? Could it be time to consult with a professional business marketer?

Reassess staffing needs.

You may have established a pattern of more work emerging over the past few summers. Did you have to cut back on staff during the slowdown? If you were working sunup to sundown last summer, and routinely pulling weekend duty, it could be time to think about hiring a few extra hands. Consider if you could keep an entire new crew busy next summer. Maybe an office person would be able to get the paperwork in order and perform some

new customer outreach programs. So much has happened in the past five years, it's a good time to take stock in staffing.

Make office upgrades during slow times.

If you're like many small-business owners, you didn't make a whole lot of office purchases since 2008. You could be getting by with computers that lack sufficient memory (RAM), no longer have reliable hard drive space for your records and a fading computer monitor screen. At the same time, smartphones, tablets and cloud computing have revolutionized how small businesses save and access critical data. It's likely you don't even need a bulky desktop computer anymore, and that you might benefit by putting the latest office technology in the hands of everyone on your team.

Schedule maintenance on equipment.

You worked your machines hard last summer dealing with a pent-up demand for your services. It could be that you have aging equipment already, which makes it doubly important to keep machines in tip-top shape. Carefully go over your mini-excavators, skid-steers and other equipment, refresh lubricants, examine wear items and remove all the accumulated grime from time in the field. And take a critical look at a replacement schedule for each machine. With lingering low borrowing rates, maybe it's time to buy something new.

Perform a supply inventory.

All summer long you grabbed parts and components off the shelves in your shop and maybe ignored the need to order new inventory. Make sure you replenish supplies now, before you run short on an important and timely job next spring. Don't let something as simple as an inadequate supply of pipe, risers and lids or drainfield media hold you up down the road. Place those orders now to get your warehouse in order well before next season.

Celebrate the holidays with your crew.

Stop and smell the roses this month. You and your crew worked hard all year and the company ledger is in better shape now than it has been in quite a while. It's time to celebrate successes of the past year and make it clear you feel it's important for your staff to spend quality time with their families over the holidays. Throw a party and give out year-end bonuses if you can

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afford to. You wouldn't be where you are without your crew, so show them extra love and respect this time of year.

Make plans for the Pumper & Cleaner Expo.

It's almost here – the biggest show in the world of environmental services. The Pumper & Cleaner Environmental Expo International is just a few months away, Feb. 24-27 in Indianapolis. This is your opportunity to see all the latest equipment and technologies from industry manufacturers, as well as take part in Education Day training and the networking that can be vital to your professional advancement. If you've attended in the past, I look forward to meeting you at the Indiana Convention Center. If you've never attended, please give it some serious consideration. For more information, go to www.pumpershow.com. □

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THE FIELD DYNAMIC

Installers vs. Inspectors

Relationships can be complex, especially between an installer and an inspector. In Part 5 of this series on onsite inspection politics, see how education and licensing requirements contribute to the discussion. www.onsiteinstaller.com/featured



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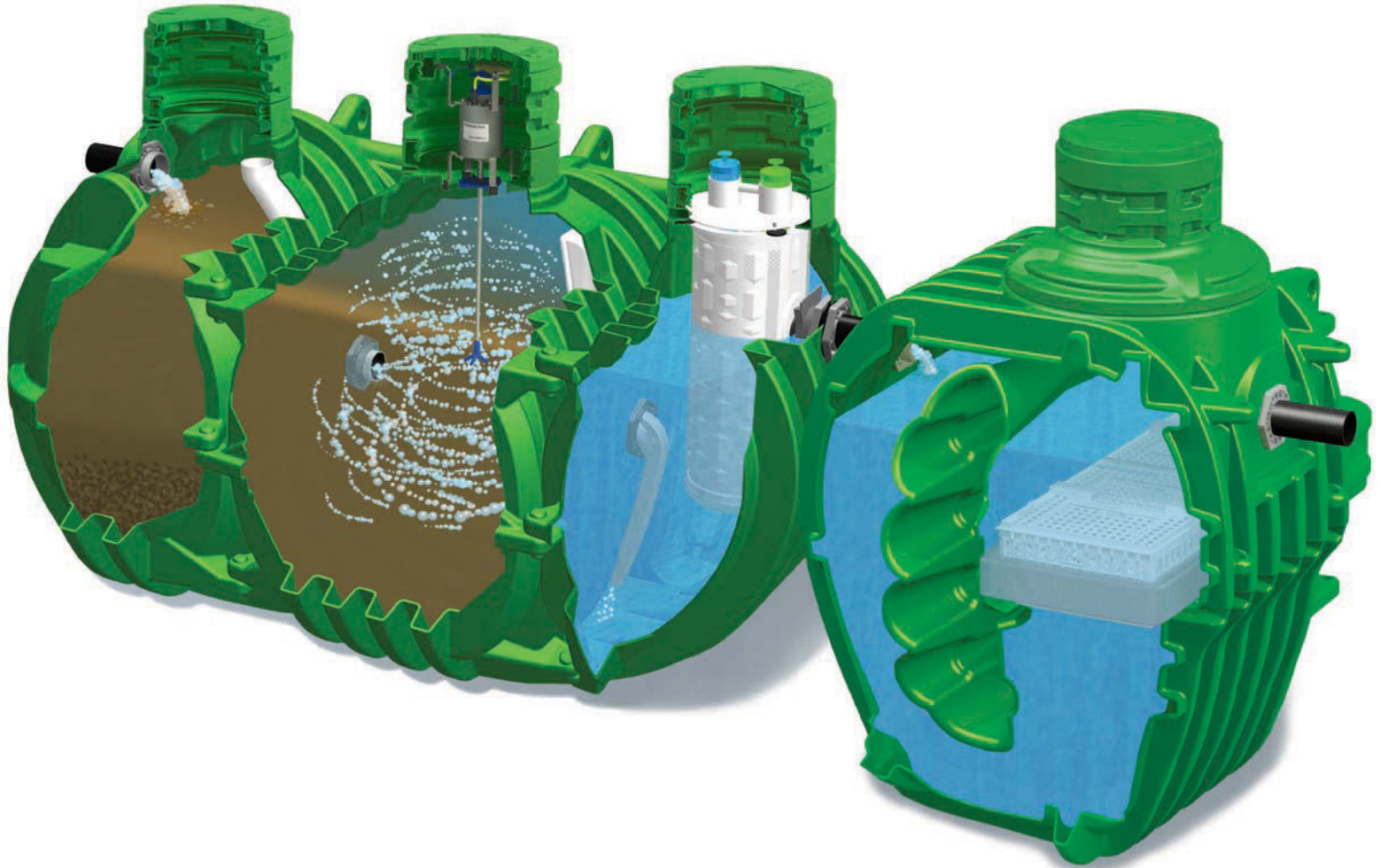
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Minnesota's Flygare family builds a full-service excavating and installation company powered by referrals and teamwork

By *Scottie Dayton*

Word of mouth was the most powerful tool Dean Flygare had going for him when he opened Flygare Excavating in 1992. Residents in his small hometown of Annandale, Minn., had watched him develop into a first-class heavy equipment operator and licensed onsite installer while working for his brother-in-law, Ed Purcell.

The rural area, peppered with lakes and single-family homes, proved an ideal location for Flygare to build a full-service excavating company specializing in mostly residential onsite installations. To stay busy in winter, he plowed and hauled snow, thawed soil for construction companies and jetted frozen pipes with hot water.

Flygare, 53, runs the business with his wife, Debbie. In 2006, they welcomed son Darren, 31, to the partnership. "I believe he will take charge of the company in 10 years," says Flygare. "Right now, we're just happy working together as two adults who happen to be father and son."

GAINING MOMENTUM

Flygare often worked unsupervised as he neared the end of his 11 years with Purcell. The opportunity enabled him to build a solid reputation with community members and other contractors. "Many of them spurred me on to start my own business, but I joined a company in neighboring Saint Cloud instead," says Flygare.

Shortly after beginning work in spring 1992, he began buying used

**Flygare Excavating,
Annandale, Minn.**



- OWNERS:** Dean, Debbie and Darren Flygare
- YEARS IN BUSINESS:** 21
- MARKET AREA:** 75-mile radius
- SPECIALTY:** Installing residential and commercial systems, excavating, commercial snow plowing and hauling, pipe jetting, ground thawing
- AFFILIATIONS:** Minnesota Onsite Wastewater Association
- WEBSITE:** www.flygareexcavating.com

equipment and freelancing as Flygare Excavating in his spare time. By autumn, he was busy enough to become a full-time small-business owner. When Purcell closed his doors several years later, many of his customers turned to Flygare and have remained loyal.

<< Left to right, Dean, Debbie and Darren Flygare operate the 21-year-old family business. (Photo courtesy of Flygare Excavating Inc.)

>> Dean Flygare digs out an old septic system using a Cat excavator. (Photos by Mary R. Christen)

Debbie Flygare's experience handling payroll and taxes for other companies made her a valuable business asset and counterpoint to her husband's impulsiveness. "We're a good balance because I'm a bit of a risk taker, while she is levelheaded," says Flygare. "If I were in a buying mode, Debbie made me look at the numbers, decide if we really needed something, then figure out how we were going to swing it. I give her full credit for not letting me go too far out on a limb."

Until 2008, contractors and homeowners hired him to install 40 systems per year. To keep up with demand, he hired his younger brother, Jason. From age 14, son Darren spent summer vacations working with them. He joined the company full time in 2000.

"Although things were lean for a while and we depended on Debbie's income, we didn't sell any machinery. Because of her efforts, we come out looking good."

Dean Flygare

Installations were usually trench systems or an occasional pressure mound for homes, seasonal cabins and the rare restaurant. Then and now, installations generate 50 to 75 percent of the company's revenue; the remainder is excavation.

A TEAM APPROACH

Many properties Flygare worked had high water conditions that required more than just a mound or were unsuitable for them. At one such location, Flygare met designer Bernie Miller, owner of Miller's Sewage Treatment Solutions, and past president of the Minnesota Onsite Wastewater Association. The men impressed each other as they worked to design and install the system.

Although Flygare was a licensed designer, he preferred to concentrate on installations and excavations. "Meeting Bernie was a turning point because he dealt with advanced treatment technologies," says Flygare. "Now I could refer customers with site problems to him and he referred customers who needed an installer to me."

Flygare also gave up transfer of property inspections, as they interfered with what he did best. "Inspections are part of Bernie's business, so we refer them to him," says Flygare. "We do, however, take ownership of every system we install, and I believe that sets us apart from other good companies. No matter the age of the systems, if we installed them and homeowners call with questions or problems, we help them."

The largest system the company has installed serves a children's camp that was adding three bunkhouses. Miller designed individual systems for



Machine masters

Dean Flygare and son Darren, 31, use a Caterpillar 312CL excavator and Bobcat T250 and T750 compact track loaders for installations and excavations. For fun, they tested their skills at the first Roe-D-Hoe during the 2013 Minnesota Onsite Wastewater Association annual conference. Dean won, qualifying him for the national competition at the Pumper & Cleaner Environmental Expo International in February. Darren finished sixth.

"MOWA gave me a \$1,000 prize to cover travel and lodging expenses," says Dean. "Darren accompanied me and got back into the competition by qualifying in the top 10."

Competing against 14 other finalists, the younger Flygare finished first. "I wasn't surprised Darren won because he's good," says Dean, who finished fifth. "If I couldn't win the championship title, I'm happy he did. The only thing I would have liked more is if we had placed first and second."



Darren Flygare installs rock in a drainfield using a Bobcat skid-steer loader.

<< Dean Flygare installs a Zoeller pump and controls during a system install.



the dwellings to monitor the performance of different drainfield media. Each had treatment tanks and a pump tank dosing to a drainfield on a hill. One absorption bed had stone-and-pipe trenches, another had two different brands of gravelless chambers, and the third had EZflow geosynthetic aggregate.

MOVING ON UP

Another milestone in the company's history was building an 80- by 54-foot shop with 45- by 30-foot office and pipe room on 5 acres a mile east of Annandale. The building has three drive-through service bays with overhead doors on both sides.

The facility is far removed from the days when Flygare worked out of his home, then rented half a storage building in town. He eventually bought the property, only to have part of the roof collapse under heavy snow load. Flygare razed the structure and built his first shop. When the business outgrew it, he bought the present property.

Flygare usually kept equipment for several years, then upgraded. The recession taught him to run a leaner business and alter his equipment replacement schedule. "Although things were lean for a while and we

depended on Debbie's income, we didn't sell any machinery," he says. "Because of her efforts, we come out looking good."

The outlook is improved. "The last two years we've been swamped until Christmas, then we have four months where things quiet way down," says Dean Flygare.

OFF-SEASON WORK

Plowing and snow removal keep the team busy in winter. Flygare jettisoned residential accounts when they moved to the new shop, and cleans only commercial lots. When wet, heavy, deep snows overwhelm the pickup trucks with snowplows, they use a John Deere 310 loader backhoe to pile up the white stuff. "This year we serviced some large commercial lots with numerous dead corners," says Flygare. "The plows had a hard time back-dragging, so we bought a snow bucket for the loader and scoop it up."

Two state highways run through Annandale, and the pair plowed and hauled snow for the city until it grew large enough to handle its own cleaning. "Now

"A manager on the board was pushing the big pipe and stakeholders were there to counter his intentions. It's not right to force people to hook to sewers after they did the proper thing and upgraded their systems."

Dean Flygare

we just remove the snow in our International tri-axle dump truck and Volvo tandem-axle dump truck," says Flygare.

In 2011, Flygare bought a portable Magnum Gold 3.6 gpm/4,000 psi hot-water pressure washer from Easy-Kleen to clean sewer laterals in summer or thaw frozen ones in winter. Before loading the unit on a Bobcat trailer, they added RV antifreeze to the water in the washer to prevent it from freezing en route.

On site, hundreds of feet of garden hose hooked to an outside faucet often fed the washer. "With that much hose run out, we worried the water would freeze before it reached the boiler," says Flygare. "The entire operation was a hassle."

In 2013, they bought a 5- by 8-foot enclosed trailer, mounted the pressure washer and a 100-gallon water tank in the front, and ran the diesel-fired boiler's chimney out the roof. The pair also used the jetter to flush pressurized drainfield laterals. "Opening the clogged orifices is often all it takes to restore a system's functionality," says Flygare. "The problem is most drainfields don't have clean-outs, so we waste time trying to find the ends of the pipes."

With recent code changes mandating each lateral have a clean-out with piping in a valve box, Flygare anticipates cleaning more of them. Another work avenue arrived when Annandale required the inspection of sewer laterals for real estate transactions. The pair uses a K & K camera system (Sewer Eye) with Sony digital video recorder to document the procedure.

WARMING TREND

One irregular winter activity began in 2003 when contractors with major housing projects wanted to excavate basements and footings year-round. In winters with little snow, frost penetrated 24 to 36 inches. "Digging through

(continued)

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Dean Flygare and David Hoiem use a Crain grade rod with a Spectra Precision laser receiver to level laterals while installing a new system.

that much frost is hard on equipment and tough on foundations when backfilling with frozen chunks,” says Flygare. “The answer is ground thawing.”

Father and son visited a heater rental service in Saint Cloud, analyzed the ground-thawing equipment and fabricated their own unit. Flygare bought a 5- by 12-foot-long enclosed trailer. His father, a salesman for a plumbing and heating supply company, ordered the 150,000 Btu boiler, hose and parts. His uncle, a master plumber and boilerman, installed the boiler, a 100-gallon fuel tank, manifolds and valves.

“The heater has six closed-loop systems,” says Flygare. “We built five reels each holding 500 feet of 3/4-inch heater hose with quick couplers that snap onto the boiler valves.”

The hoses, laid on 12- to 12.5-inch centers, were covered with frost blankets anchored against the wind with sandbags or two-by-fours. Depending on the soil and with the boiler running almost constantly, the unit thawed 12 inches per day.

SUPPORTING ONSITE TECHNOLOGY

In 2007, the business faced a serious threat when the Clearwater River Watershed District proposed running a sanitary sewer around the Chain of Lakes and building a wastewater treatment plant. Flygare also believed the plan was wrong for the area, thinking the population density didn’t support it and soils were onsite friendly.

“A manager on the board was pushing the big pipe and stakeholders were there to counter his intentions,” says Flygare. “It’s not right to force people to hook to sewers after they did the proper thing and upgraded their systems.”

The opposition won. Two years later, those who believed funding would be readily available for the project changed their minds and accepted onsite systems as the best option. That winter, the district established a Wastewater Management Task Force. Flygare has served on it from the beginning.

As residents watch Darren Flygare become a skilled equipment operator and licensed installer, they often ask his father what the journey was like for them. “It wasn’t always easy,” he says. “When Darren was 18 to 23 and knew everything, we often butted heads. He had to grow up and I had to learn to let go. That was the hardest part, and I’m still dealing with it.” □

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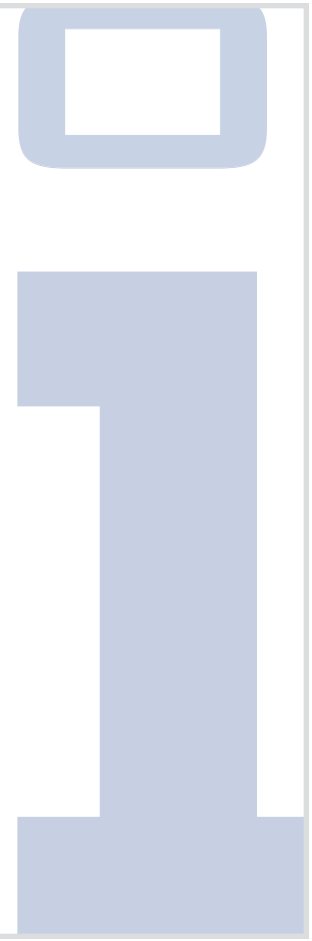
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Jim Anderson, Ph.D., and David Gustafson, P.E., are connected with the University of Minnesota onsite wastewater treatment education program. David is Extension Onsite Sewage Treatment Educator. Jim is former director of the university's Water Resources Center and is now an emeritus professor, as well as education program coordinator for the National Association of Wastewater Technicians. Readers are welcome to submit questions or article suggestions to Jim and David. Write to ander045@umn.edu.

Piping For Trenches

The right backfill material and following a careful, step-by-step bedding process will ensure an onsite system's pipes will function properly for the long haul

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

Last month we discussed piping basics for the house sewer line and supply pipes in an onsite system. Now we'll review best practices for excavating trenches, laying pipes for the dispersal portion of the system and bedding the pipe properly.

Trenches must be dug, prepared and backfilled in a way that prevents pipe damage. Common damage includes cracking, breaking joints and creating dips or bends in the pipe. Trench bottoms should be free of rocks and debris, continuous and provide uniform support. If there is bedrock, hardpan or large rocks on the trench bottom, the trench should be bedded with sand.

- The bedding material is applied. This provides support for the bottom of the pipe. Typically this material is sand, although some areas allow use of coarser granular materials; so as always check your state and local regulations.
- The sand or bedding material should be compacted using a mechanical compactor. This layer is usually about 3 to 4 inches thick, but it can be as much as 6 inches.

Use the "heel test" to see if the material has been compacted enough.

Trench bottoms should be free of rocks and debris, continuous and provide uniform support. If there is bedrock, hardpan or large rocks on the trench bottom, the trench should be bedded with sand.

Trenches should be wide enough to work in and allow the use of compaction equipment. Generally, pipe manufacturers require a trench to be at least twice as wide as the diameter of the pipe. This allows enough space to snake small-diameter pipe from side to side on long runs and compensate for contraction and expansion of the pipe. From our perspective, the key to a proper installation is being able to work in the trench when gluing pipe joints, or compacting the trench bottom and bedding materials. As we discussed last month, the pipe needs to stay in place, maintain the required slope to conduct sewage and be filled only with air between sewage events.

The backfill should be clean, free of rocks, construction debris, organic soil or frozen soil material. This is to minimize the potential to damage the pipe or have the pipe move after backfill.

STEPS TO FOLLOW

Proper bedding and backfill procedures can include the following steps:

- Making sure the bottom of the pipe trench has a good foundation. This can be the original soil material free of rocks and on the proper slope. This is where you want to have the trench wide enough so the bottom or foundation can be properly prepared.

The test is simply to see if the heel of your boot can make an impression in the material. You should not be able to leave this impression. This method is not foolproof but it can be a good indicator of compaction.

COMPACTION CONCERNS

Follow the compaction specification guidelines provided by the pipe manufacturer. Additional compaction is required where piping runs under improved asphalt or concrete surfaces. A 90 percent compaction rate is required under improved surfaces, compared to an 85 percent rate for under unimproved surfaces.

The same material can be used for the next layer, called the haunch. This material is applied to the midpoint of the pipe to provide lateral support and keep fines from migrating in from the trench walls. Some jurisdictions require haunching material be gravel not more than 3/4 inch in diameter, so check what is required in your area. The haunch should be tamped under and around the pipe. Then the initial backfill is applied to 6 inches over the top of the pipe before the final backfill of soil material is applied. □



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Time Well Spent

Marking my 10th Pumper & Cleaner Expo, here are nuggets of advice I'd give first-time visitors to the biggest and best environmental services trade show **By Jim Kneiszel**

When I pull the car into downtown Indianapolis in February, it will mark the beginning of my 10th Pumper & Cleaner Environmental Expo International. It doesn't seem so long ago that I was on my first trip to the Expo in Nashville in 2005. I couldn't believe the enthusiasm I saw from the moment I stepped off the airplane.

"Vee love za pumpas," a woman with a thick German accent said, greeting me in the airport. From that airport worker to the hotel hospitality staff, and from the exhibitors to regular Expo attendees – there's a thrill and excitement every time the show rolls around. It's been the same in Nashville, Louisville, and now my new personal favorite Expo venue in Indy.

After walking the exhibit hall for three days and while I'm making the car ride home to Wisconsin, my mind sometimes wanders to the advice I would give first-time Expo attendees to make their trip to the industry's biggest show more enjoyable. What tips could I impart that would help them get the most out of the trade show experience.

This year, I decided to jot down some of my ideas for first-timers and experienced Expo attendees alike and present them before the big event. I hope at least one of these nuggets from an Expo veteran will be helpful come Feb. 24-27 at the Indiana Convention Center:

Get comfortable

Hitting the Expo is more about endurance than speed. With four days

(Education Day and three exhibit days), you have time to slow down and take it all in. But you should be prepared to feel refreshed and ready to go every morning. My first tip is to wear comfortable shoes and have two pairs so you can alternate by days. I buy one new pair of quality shoes every winter and break them in for Expo duty. You don't want tired, sore feet to take away from your experience. Also remember to drink plenty of water and bring along lip balm. The dry indoor air at a trade show can be dehydrating. Ample snacks and refreshments are available at the Expo. It's also good to step outside for some fresh air a few times a day. And though there's so much to do and see with your industry friends after show hours, be sure to get plenty of sleep. When you get up in the morning, have a good breakfast, as your mother always told you.

Have a system to cover the exhibit hall

The vast exhibit floor can be an imposing sight when you enter the Indiana Convention Center. One look at the show floor map can also have a paralyzing effect on the first time visitor. A systematic approach to working the exhibit hall will ensure you don't miss a vendor you really wanted to see and keep you from passing unnecessarily through the same area multiple times. I recommend grabbing a map at the registration area and studying it before charging into the hall. Make a mark at all the booths that are "must-sees," including your existing vendors, all those that carry a product you're

interested in purchasing or new technologies you're interested in considering for your business. Then divide the exhibitor map by the number of days you have at the Expo. If you'll be there all three days, draw a grid of three areas to cover. Alternately, you can color code the booth markings to make sure you hit the most important companies in the time you have allotted. The key is to organize your visit to accomplish all of your priorities.

Hitting the Expo is more about endurance than speed. With four days (Education Day and three exhibit days), you have time to slow down and take it all in. But you should be prepared to feel refreshed and ready to go every morning.

Don't miss out on education opportunities

Some visitors come just to see the exhibits, and with good reason. You won't see this extreme collection of environmental services equipment anywhere else. But if you ignore the education opportunities the Expo has to offer, you're leaving some professional value on the table. Education Day, on the first day of the Expo, features dozens of classes with some of the industry's best teachers and presenters. The seminars can often be used to satisfy ongoing training requirements from your state. Or you can attend a variety of marketing sessions that will help you promote and grow your business. Also, you may walk into a class that introduces you to the next service your business can provide to customers. Take time to read the seminar descriptions in the Expo guide and plan your day. And remember, a host of seminars and demonstrations continue the days after Education Day.

See what your regular vendors have to offer

You might say, "I already know my existing vendors and what they carry. So I should spend my time visiting new exhibits." That's true to a degree. But relationship building has always been and will continue to be a big key to success for small businesses. You need face time with the rep that supplies your equipment and inventory of consumable items to make sure you are always top of mind with them in times of need. Also, an annual sit-down with your suppliers can push you to ask questions, inquire about bulk discounts and look for suggestions about how you can run the business more efficiently. The Expo is a great time to make suggestions for updates to vendors' products, learn about new innovations and hear about new applications for products you use as a matter of routine.

Buy it off the floor

Do you drive to the Expo? If you typically fly, can you think of an advantage to driving to Indy this time around? The Expo floor is filled with the latest and best products some 500 exhibitors have to offer, and the manufacturers often want to sell displayed equipment so they don't have to transport it back home. That means you'll find good deals on exhibited equipment. I've talked to contractors who come to the Expo every year intending to purchase a new piece of equipment and either haul or drive it back home. They know exhibitors spec out show equipment with quality in mind and look for a discount on great new equipment. If you're out for customization, buying equipment off the show floor might not be the best approach for you. But if you see something you really like, you might be able to hook it up to your hitch and go after the event is over.

Find a friend at the roundtable discussions

Many longtime visitors to the Expo have tapped into a little-known networking secret that has paid major dividends. They've met a contractor from another part of the country who operates the same kind of business, and now have a trusted friend to strategize with. I'm sure you would often like a friend in the industry to act as a sounding board for your ideas. But the last person you want to turn to is your direct competitor on the other side of town. That's where the Expo's roundtable discussions offer untold value. The breakfast roundtable event on Feb. 27 groups contractors by topic and type of company, creating a perfect opportunity for you to meet others facing similar business challenges. I've heard from many attendees who've forged lifelong friendships from these networking opportunities. These contractors keep in touch throughout the years and across the country, then meet up every year to enjoy the Expo experience together.

A FINAL WORD

I hope these tips help you build a memorable and successful visit to the Pumper & Cleaner Expo. Do you want to talk some more? If so, you'll find me at the editor's booth near the registration area during the 2014 Expo. See you there! □



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Idaho environment officials developing new onsite system setback regulations

By Doug Day and Sharon Verbeten

Idaho officials are working on rules to provide for septic system setbacks from surface water. The draft model was based on the ability to limit the discharge of phosphorus. According to the Idaho Department of Environmental Quality's synopsis of the draft regulations, it will use a software tool to account for effluent and groundwater quality, and characteristics of the drainfield, aquifer and surface water bodies to calculate the appropriate setback. The new regulations do not address nitrogen, which continues to be governed by existing rules because systems that reduce nitrogen do nothing to reduce the amount of phosphorus.

PENNSYLVANIA

The state Department of Transportation has decided to add or increase weight restrictions for about 1,000 bridges in the Commonwealth. The move could affect septic service companies and others carrying heavy loads. The move affects eight bridges in Erie County and 20 bridges in Crawford County, each of which has been classified as "structurally deficient."

NEW MEXICO

New state liquid waste regulations went into effect Sept. 1. The changes include:

- Revised calculations to determine if a system will be permitted under the Liquid Waste Regulations or require a Groundwater Discharge Permit.
- Changes in drainfield sizing.
- Recalculations of sidewall credits and drainfield product credits.
- Changes in maintenance and monitoring requirements for advanced treatment systems.
- Recalculations for design flows for both residential and commercial systems.

UTAH

The state has clarified and rewritten its Onsite Wastewater System administrative code (R317-4). Details of the code are available at www.waterquality.utah.gov/Onsite/index.htm. The rewrite was designed to make the code easier to read and understand, and quicker to navigate to specific sections. The changes were effective Sept. 1.

WISCONSIN

Some residents in central Wisconsin will soon see costs double to empty holding and septic tanks. According to officials in the Marshfield area, the cost increase is due to the need to treat the septage before applying on agricultural fields. Septic service contractors are currently charged a fee at the city wastewater plant for disposal. To apply the waste to an agricultural field, the septic company must pay for additional labor and treatment supplies such as lime, testing equipment and increased truck maintenance, according to the state Department of Natural Resources, which enforces the regulations related to septage disposal.

The DNR is working to educate licensed businesses and certified haulers about the regulations.

CONNECTICUT

Contain your bamboo or run afoul of the law! One species of the popular plant is beginning to cause problems such as ruined septic systems and damaged foundations, so the Connecticut General Assembly has passed a law holding those with running (yellow grove) bamboo responsible for any damage it does. The plant can grow 40 feet tall and its roots can spread 20 feet a year; it's been known to grow up through asphalt streets. The law requires running bamboo to be contained to prevent spreading, or it must be planted at least 100 feet from a public right of way or other properties. Those who sell it are also required to educate consumers about the plant and how to control it. Besides the civil liability, violators are subject to a \$100 fine. Several communities in New York have reportedly passed local ordinances to deal with the bamboo problem. □

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A forklift battery is tested by Chris McGuire, of the U.S. Navy. (U.S. Navy photo by Mass Communications Specialist 3rd Class Kevin Murphy)

Battery Basics

As installers head into winter maintenance season, a lead-acid battery expert explains cold cranking amps and the complex chemistry behind an important component in your trucks and equipment

By Peter Kenter

What's the best type of battery?

Understanding the basic differences between the three main battery types – Flooded Lead Acid (FLA), Absorbed Glass Mat (AGM) and Gel Cell – will help to determine the best battery for your trucks and equipment

“These three main types of equipment and vehicle batteries are all lead-acid batteries with different construction, different performance characteristics and different charging requirements,” says Gale Kimbrough, manager of the battery engineering and testing lab at Interstate Batteries.

All lead-acid batteries feature lead plates surrounded by an electrolyte containing sulfuric acid. During charging, the positive and negative plates react so that positively charged electrons travel to the negative and negatively charged electrons travel to the positive, using electrolyte as a bridge. The batteries are discharged during use by reversing that process.

If the battery is permanently sealed – that is, its caps can't be removed – and is labeled as AGM or Gel, it's known as a valve-regulated lead-acid battery. These batteries come equipped with one-way pressure release vents.

“Batteries have evolved a great deal,” says Kimbrough. “For example, lead plates have been married to different alloys. One of the latest changes has been the use of lead alloyed with calcium, which minimizes the creation of hydrogen and oxygen gases during normal charging.”

The three main battery types are distinguishable by design and primary function.



Gale Kimbrough

DEFINITIONS

COLD CRANKING AMPS:

The amount of current a battery can provide at 0 degrees F.

DEEP CYCLE BATTERIES:

Deep cycle batteries are designed to provide continuous power over long periods of time. Deep cycling is the process of almost completely discharging a battery before it's recharged.

SHALLOW CYCLE BATTERIES:

Also known as cranking or starting batteries, they deliver large amounts of power for a short period of time, typically to start an engine. The battery is quickly recharged after use.

Flooded Lead Acid

“FLAs are the oldest battery design and have been part of road vehicles since cars gave up hand cranks,” says Kimbrough.

The FLA offers a versatile design. Depending on construction, FLAs can produce high cold cranking amp (CCA) power availability (shallow cycling) and/or a combination of cranking and deep cycling, or deep cycling only (see sidebar).

FLAs may be permanently sealed or designed with accessible vent caps.

Charging options for FLA batteries are probably the widest, ranging from the vehicle recharging system to most non-vehicle rechargers.

Gel Cell

Gel Cell batteries feature a design in which silica has been added to the battery during manufacturing to congeal liquid electrolyte.

"They were developed more than 30 years ago to satisfy a need for a deep cycle battery that was sealed because they could be used in enclosed applications," says Kimbrough. "They were originally used in the telephone industry as backup power for equipment."

Gel Cell batteries usually offer a higher reserve capacity than other batteries.

"They can be used for starting if required, but typically don't produce the same cold cranking amps as an FLA or an AGM battery," says Kimbrough. "They can be made to deep cycle, but these batteries are traditionally used as backup power or for lighting."

Gel Cell batteries must be recharged using lower voltage than other lead-acid batteries.

"Batteries have evolved a great deal. For example, lead plates have been married to different alloys. One of the latest changes has been the use of lead alloyed with calcium, which minimizes the creation of hydrogen and oxygen gases during normal charging."

Gale Kimbrough

Absorbed Glass Mat

What makes the AGM different is a sponge-like fiberglass material separating negative and positive plates. This micro-glass material absorbs the electrolyte solution and keeps it immobilized while maintaining contact with the plates.

The batteries were introduced in the mid-1980s for use in military aircraft because they eliminated the risk of formation of explosive gases. More expensive than FLAs, AGM batteries are gradually replacing Gel Cells, with which they're often confused.

"The strength of the design is that the glass mat and electrolyte combination offer a very low resistance," says Kimbrough.

AGM batteries can be used in high cranking and/or deep cycling applications, such as vehicle starting or electric vehicles, depending on their designed purpose.

"Recent AGM pure lead technology uses thinner plates made of 99.99 percent pure virgin lead," notes Kimbrough. "This technology has allowed AGMs to perform with deep cycling and cranking combined."

Which battery to choose?

Choosing the right battery for your trucks and equipment is usually a matter of balancing cost and performance. If an FLA isn't providing the performance required, it may be time to upgrade to a heavy-duty FLA or an AGM.

"If your regular FLA is performing for one year or less, you need to investigate an upgrade to either a heavier duty FLA or AGM," says Kimbrough. "Also make sure that the batteries you're using or buying haven't aged on the shelf. Excessive storage can cut into performance life."

AGM batteries also perform better than FLAs under heavy vibration, the type of conditions you experience with mini-excavation equipment, for instance. "They typically offer two to five times additional vibration resistance than flooded unless the flooded battery meets extra heavy-duty requirements," Kimbrough notes.

If equipment is stored for extended periods of time between uses, AGMs hold their charge longer than FLAs.

Maintenance matters

Kimbrough recommends that all batteries be visually inspected every three to six months. Terminals should be inspected for corrosion and inspected for cleanliness, since dirt can discharge electricity across positive and negative terminals.

While some FLA batteries have vent caps that can open, others are sealed. If the caps are accessible, the battery can be visually inspected to see if electrolyte continues to cover the plates as specified by the manufacturer.

"If levels are low, you can add water, preferably deionized or distilled, to top up the fluid," says Kimbrough. "You'll probably need to do this more often in high heat or extreme cold conditions."

Depending on their use, batteries can perform for longer or shorter times than their expected lifespan. One testing method involves checking the battery's voltage at rest to help determine its state of charge.

"A generic 12-volt battery that tests at 12.00 volts can indicate an approximate 20 percent remaining charge level," says Kimbrough. "Although it varies depending on the type of battery, typically 12.75 volts to 12.95 volts indicates a near-full charge in a battery at rest." □

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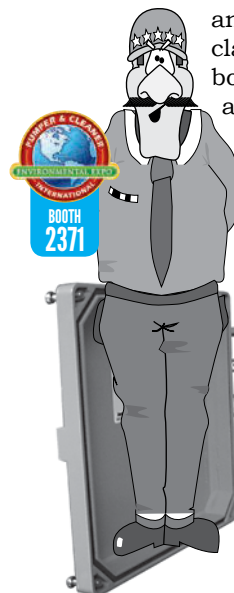
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Photos courtesy of Visit Indy, www.visitindy.com

Visit Indy Neighborhoods

Fountain Square attractions

Six historic districts showcase active art and music scenes for visitors to the Pumper & Cleaner Environmental Expo

By Sharon Verbeten

Founded and platted in 1821, Indianapolis (population 876,804) is known for being located at the “Crossroads of America.” And its varied tourist attractions are just part of what make Indy a unique and thriving city.

According to Lisa Wallace, communications manager, conventions and meetings for Visit Indy, “Visitor favorites include the green space, canal and attractions conveniently located in White River State Park steps away from hotels. Two newer attractions include the Dallara IndyCar Factory and our Cultural Trail, an innovative project connecting visitors on bike or foot with

“New attractions include the Dallara IndyCar Factory and our Cultural Trail, an innovative project connecting visitors on bike or foot with hotels, restaurants and eclectic neighborhoods.”

Lisa Wallace

hotels, restaurants and eclectic neighborhoods throughout the city. The Indianapolis Museum of Art is also popular with prominent works of art inside and 152 acres of gardens and grounds outside that house the original [Robert Indiana] LOVE sculpture.”

Those are just some of the attractions located in the city’s six distinct cultural districts. These include Broad Ripple Village, The Canal and White

River State Park, Fountain Square, Indiana Avenue, Mass Ave. and the Wholesale District. Nestled in these districts are public art, galleries, museums, shops and recreation. Four of the six districts are conveniently located downtown, the site of the Pumper & Cleaner Environmental Expo.

SEE IT ALL

Broad Ripple Village is set against the backdrop of public art, graffiti murals and green spaces. It’s the ideal venue for those adventuresome souls who enjoy art, creative spaces and ethnic foods. Shopping options include works by local artisans, as well as vintage furniture and collectibles. The Indianapolis Art Center and the ARTSPARK outdoor laboratory are located in Broad Ripple.



Broad Ripple Village



Fountain Square Duckpin Bowling



A Mass Ave. outdoor patio beer garden

The Canal and White River State Park are more for history and outdoor lovers. Limestone walkways and American Indian art are part of the experience in this district.

Scattered throughout the Canal and 250-acre White River State Park are some of the city's most inspiring museums and attractions.

The Canal Walk – on the “waterfront” – provides an urban respite for fitness enthusiasts and serenity seekers. Also in this district is the Indianapolis Zoo, the Eiteljorg Museum of American Indians and Western Art, the Glick Indiana History Center, the Indiana State Museum and the NCAA Hall of Champions.

Fountain Square is a historic community spotlighted by a town square and central fountain, evoking images of a European city. It is a literary and artistic haven and home to more offbeat activities like duckpin bowling and swing dancing. More than 75 artists call the Wheeler Arts Community or Murphy Art Center home.

Indiana Avenue anchors the district that spans the Central Canal and White River. Here history, jazz, restored neighborhoods and spirituality embrace the city's rich African-American heritage. Several venues are on the National Register of Historic Places.

Mass Ave. is the city's arts and theater district, including five performing arts theaters. Shops feature local artists' works, and an array of original outdoor art greets visitors.

Wholesale District brings an urban excitement to the city with marquees, tuxedoed doormen and a mall to delight shoppers – the two-block, four-story Circle Centre mall. This is the heart of the business district, home to historic buildings, massive skyscrapers and the Indianapolis Symphony Orchestra and Indiana Repertory Theatre.

The Bankers Life Fieldhouse is home to the National Basketball Association Indiana Pacers and the Women's NBA Indiana Fever. Lucas Oil Stadium hosts the National Football League's Indianapolis Colts. ▣

FOR MORE INFORMATION:

Broad Ripple Village
6311 Westfield Blvd.; 317/251-2782
www.discoverbroadripplevillage.com

Canal Walk and White River State Park
801 W. Washington St.; 317/233-2434;
www.discovercanal.com

Fountain Square
Fountain Square Merchants Association
www.discoverfountainsquare.com

Indiana Avenue, Madame Walker Theatre Center
617 Indiana Ave.; 317/236-2099;
www.discoverindianaavenue.com

Mass Ave.
430 Massachusetts Ave.; 317/637-8996 ext. 202;
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ABOUT THE AUTHOR

Eric Casey is NOWRA's Executive Director. The National Onsite Wastewater Recycling Association is the only national organization dedicated to representing and educating all segments of the onsite/decentralized industry. For more information or to join, visit www.nowra.org or call 800/966-2942.

What is the EPA Decentralized Wastewater Management Partnership ... and why should you care?

By Eric Casey

With onsite systems largely regulated at the state and local level, it's easy to overlook the impact of the U.S. Environmental Protection Agency on our industry. From their landmark 1997 Report to Congress that recognized onsite systems as a permanent part of the nation's wastewater infrastructure, to the research and demonstration projects the agency has funded, to the management, training and public education resources it has developed, the EPA has greatly influenced the evolution and growth of the onsite wastewater industry.

In 2005, the National Onsite Wastewater Recycling Association and seven other national organizations partnered with the EPA, signing a memorandum of understanding creating the Decentralized Wastewater Management Partnership. Goals of the Partnership, which now includes 16 organizations (plus the EPA), are to work together to encourage proper management of decentralized (onsite) systems, and to increase collaboration between the EPA, state and local governments, and decentralized system practitioners and providers.

Those are nice sounding words, you might say. But what do they mean?

Decentralized Wastewater Management Partnership Members:

Association of Clean Water Administrators (ACWA)
 Association of State Drinking Water Administrators (ASDWA)
 Association of State and Territorial Health Officials (ASTHO)
 Center for Disease Control and Prevention (CDC)
 Consortium of Institutions for Decentralized Wastewater Treatment (CIDWT)
 Groundwater Protection Council (GWPC)
 National Association of Towns and Townships (NATaT)
 National Association of Wastewater Transporters (NAWT)
 National Environmental Health Association (NEHA)
 National Environmental Services Center (NESC)
 National Onsite Wastewater Recycling Association (NOWRA)
 National Sanitation Foundation (NSF)
 Rural Community Assistance Program (RCAP)
 State Onsite Regulators Alliance (SORA)
 U.S. Environmental Protection Agency
 Water Environment Federation (WEF)
 Water Environment Research Foundation (WERF)

Good question, because the Partnership has done some pretty interesting things recently. For example:

- The Partnership developed a series of short, nontechnical position papers – endorsed by the EPA – promoting the benefits of decentralized wastewater treatment (they're an economical solution; they protect public health, they're green and sustainable). These are great tools for anyone dealing with public officials who just don't get onsite systems. They are one-page documents that concisely explain the benefits and advantages of onsite systems.

- The EPA recently rolled out their SepticSmart public education program. The idea for a public relations program was originally recommended by the Partnership several years ago. NOWRA worked especially hard to keep the SepticSmart concept alive when EPA budget cuts slowed the initiative's progress. SepticSmart consists of a variety of print and electronic materials to help homeowners better understand what they should (and should not) do to keep their septic systems functioning properly. You should plan to link to the EPA's SepticSmart website.

- The Partnership is developing additional position papers, specifically to demonstrate the impact onsite systems have on economic development, job creation and community growth.

- The Partnership regularly offers free webinars on critical topics of interest to industry professionals. Recent topics, all of which are archived on the EPA's website, include securing funding for onsite wastewater systems, sustainable rural communities, using decentralized systems within a utility environment, how the NSF evaluates systems and much more.

- As part of its efforts to clean up the Chesapeake Bay, EPA recently issued a Model Program for the Management of Onsite Systems in the Chesapeake Bay Watershed. This comprehensive document is likely to be a template used in other large watersheds under orders to reduce Total Maximum Daily Loads (TMDLs). While the document was developed at the regional level, the Partnership reviewed and provided extensive comments on the document before it was released.

Another benefit of the Partnership is member organizations strengthening ties with one another. Those stronger ties make it easier for groups to collaborate on projects of mutual interest. For example, NOWRA recently worked with the National Environmental Health Association (NEHA) and the Consortium of Institutions for Decentralized Wastewater Treatment (CIDWT) on a grant proposal to offer expanded training opportunities for industry professionals. NOWRA also recently collaborated with NEHA to conduct installer training and certification in New Jersey.

While the work of the Partnership doesn't attract many headlines, it plays an important role in connecting the EPA with the onsite industry in meaningful ways. □



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MONDAY FEBRUARY 24, 2014

NASSCO NATIONAL ASSOCIATION OF SEWER SERVICE COMPANIES

- 8 a.m. Lessons Learned During Sewer Rehab on Public and Private Property
- 9:30 a.m. Pipe Bursting a Mature and Diverse Trenchless Technology
- 11 a.m. Resurgence of Chemical Grout Industry: Niche Business Opportunities
- 1:30 p.m. Chemical & Biological Control of F.O.G. in a 2,500-Mile Collection System
- 3 p.m. Lateral Rehabilitation, What's Available
- 4:30 p.m. Fiber Optic Temperature Sensing Technology for CIPP Cure Quality Control

NEHA NATIONAL ENVIRONMENTAL HEALTH ASSOCIATION

- 8 a.m. DEER in the Headlights
- 9:30 a.m. Basic Chemistry of Onsite Wastewater Treatment Systems
- 11 a.m. Making the Most of Experience: Training and Credentials for Wastewater Pros
- 1:30 p.m. Winners Communicate
- 3 p.m. Best Available New Technology
- 4:30 p.m. Best Available New Technology: How to Get Your Regulators on Board

NPCA NATIONAL PRECAST CONCRETE ASSOCIATION

- 3 p.m. 7 Things About Design, Installation & Maintenance of Precast Concrete Tanks
- 4:30 p.m. Grease Interceptors: A Slick Solution to a Greasy Problem

WJTA-IMCA WATERJET TECHNOLOGY ASSOCIATION INDUSTRIAL & MUNICIPAL CLEANING ASSOC.

- 8 a.m. Preparing for your First High Pressure Waterjetting Job
- 9:30 a.m. Vacuum Truck Operation and Safety
- 11 a.m. Hydroexcavation: Getting the Best Bang for Your Buck

SAFETY SESSION JOHN CONLEY

- 8 a.m. Preventing Tank Truck Rollovers

PSAI PORTABLE SANITATION ASSOCIATION INTERNATIONAL

- 9:30 a.m. State of Global Sanitation
- 11 a.m. Industry Image
- 1:30 p.m. Visions of the PSAI and the Education Initiative
- 3 p.m. What's New with OSHA Safety Requirements
- 4:30 p.m. An Introduction to Entering the Federal Government Contracting Arena

SALES & CUSTOMER SERVICE FRANK TACIAK

- 8 a.m. Be Always Profitable: Setting up the Sale
- 9:30 a.m. Be Always Profitable: Your Best Sales Presentation
- 11 a.m. Be Always Profitable: Servicing Your Sale
- 1:30 p.m. Be Always Profitable: Our Attitude to Success

NAWT NATIONAL ASSOCIATION OF WASTEWATER TECHNICIANS

- 8 a.m. CSA 2010 Implementation/Impact on Carriers/Drivers
- 9:30 a.m. DataQ's: When and How to Challenge
- 11 a.m. US DOT Update/Recent, Upcoming and Proposed Regulations
- 1:30 p.m. What is a Good Septic System Inspection?
- 3 p.m. The History of the PSMA Hydraulic Load Process
- 4:30 p.m. Improving Arizona's Inspection Program to Meet Modern Challenge

NOWRA NATIONAL ONSITE WASTEWATER RECYCLING ASSOCIATION

» SITE EVALUATION AND DESIGN OF ONSITE WASTEWATER TREATMENT SYSTEMS

- 8 a.m. Why Do We Care About Soils?
- 9:30 a.m. Design for Dummies
- 11 a.m. How to Do a Good Site Evaluation
- 1:30 p.m. Designing for Tough Sites
- 3 p.m. Wastewater and Soils: Clean It Up AND Get It To Go Away
- 4:30 p.m. Good Installation for Long-Term User Satisfaction

» FROM INSTALLATION TO MARKETING YOUR BUSINESS AND EVERYTHING IN BETWEEN

- 8 a.m. Look Out for Gophers! Taking Care of Mound Systems
- 9:30 a.m. ATU's - How to Make them Work
- 11 a.m. Rest Stops: A Case Study of Challenging Wastewater
- 1:30 p.m. Troubleshooting Onsite Systems
- 3 p.m. Installation Mistakes: How to Avoid and Fix Them
- 4:30 p.m. Marketing & Customer Service for Small Business Owners

SSCSC SOUTHERN SECTION COLLECTION SYSTEMS COMMITTEE

- 8 a.m. Personal Safety
- 9:30 a.m. Understanding the Nuances of a Quality CCTV Inspection Program
- 11 a.m. In the Trenches with Trenchless Pipeline Repair and Renewal
- 1:30 p.m. Nozzle Application: What, Why, Where, When and How?
- 3 p.m. Stop It! A Closer Look at Plugging
- 4:30 p.m. Getting the Most out of Your Combination Unit

BUSINESS TRAINING & MARKETING SUZAN CHIN

- 1:30 p.m. Marketing on a Shoestring
- 3 p.m. Getting Some... Brand Recognition
- 4:30 p.m. The Online Marketing Toolbox

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TUESDAY SESSIONS

February 25, 2014

SSCSC TRACK

- 8 a.m. Don't Fear the Shapefile
- 9:30 a.m. What's Important for Your Company; Is it Size, or Profit or Both?
- 11 a.m. 1 + 1 = 14: Cleaning and Inspection Equipment Working as an Entity

NAWT LAND APPLICATION TRACK

- 8 a.m. Be Ready to Land Apply
- 9:30 a.m. Soils and Cropping Systems
- 11 a.m. Land Application Rates and Nutrient Management

SAFETY COMPLIANCE TRACK

- 8 a.m. OSHA Confined Space and Fall Protection Untangled
- 9:30 a.m. Air Monitoring Application for the Liquid Waste Industry
- 11 a.m. T.B.D.

MUNICIPAL TRACK

- 8 a.m. Sealing - Take Control of Inflow & Infiltration in Manhole Sealing Systems
- 9:30 a.m. DC Water is Utilizing CIPP to Rehabilitate the Nation's Capital
- 11 a.m. Nozzle Explanation and Selections

INSTALLER TRACK

- 8 a.m. Septic Tank Bells and Whistles
- 9:30 a.m. Aeration Units for On-Site Septic Systems
- 11 a.m. Understanding ATU's, their Service Requirement, and Maintenance

GENERAL TRACK

- 8 a.m. Portable - The Best of Both Worlds - Liquids vs. Portion Control Deodorizers
- 9:30 a.m. Vacuum Loaders - Taking the Mystery out of Vacuum Truck Operation
- 11 a.m. DOT Compliance - The Value of DOT Certification for Vacuum Trucks

CUSTOMER SERVICE & EMPLOYEE DEVELOPMENT

- 8 a.m. Gen Y + Gen X + Baby Boomers = #@\$%???
- 9:30 a.m. Get and Keep the Best Co-Workers
- 11 a.m. Win, Win, Win in Residential Service Contracting

WEDNESDAY SESSIONS

February 26, 2014

BUSINESS TRACK

- 8 a.m. Improving Profitability through Tracking
- 9:30 a.m. How Paperless Operations Save Time and Money
- 11 a.m. Book More Calls - Wow More Customers

PORTABLE TRACK

- 8 a.m. Deodorizers and Making the Right Choices
- 9:30 a.m. Oh Shift! 6 Future Trends You Must Gear Up For to Compete and Succeed
- 11 a.m. Portable Restroom Service Units

MUNICIPAL TRACK

- 8 a.m. Sewer Cleaning 101
- 9:30 a.m. Underground Coatings - Restore Deteriorated Infrastructure
- 11 a.m. How Small Contractors Can Make Big Money Doing Manhole Rehabilitation

LIQUID WASTE TRACK

- 8 a.m. Right Sizing Your Pump System
- 9:30 a.m. Make More Money by Using a Biological Product with Your Services
- 11 a.m. Septic Drainfield Restoration

ADVERTISING & MARKETING TRACK

- 8 a.m. Advertising and Marketing for Service Companies
- 9:30 a.m. Getting Sales Personnel to Properly Price and Present
- 11 a.m. 7 Incredibly Effective Ways to Improve Your Sales



ONSITE INSTALLER COURSE

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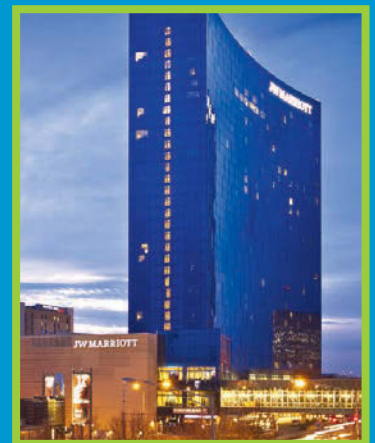
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» Attendees enjoy Craig Morgan at the 2013 Industry Appreciation Party.





The crew prepares the bed for the four Advantex AX-MAX units at URJ Camp Newman in Sonoma County, Calif. (Photos courtesy of Pete Lescure and Shear Builders Inc.)

Keeping the Forest and the Trees

A flexible layout and hand digging allows Shear Builders to install a large drip field in a stand of virgin timber

By David Steinkraus

In the rolling hills of Sonoma County, north of San Francisco and in California's wine country, Shear Builders Inc. put in a new wastewater system to handle effluent from a youth camp.

URJ Camp Newman (URJ means Union for Reform Judaism) abandoned a package plant and effluent spray field on its property and hired engineer Pete Lescure, of Lescure Engineers in Santa Rosa, Calif., to design a modern system that would meet the needs of the facility.



The subsurface drip irrigation system at URJ Camp Newman consists of 13,800 linear feet of 1/2-inch-diameter Geoflow pipe set 12 inches deep.

SYSTEM PROFILE

Location:	Porter Creek Road in Sonoma County, Calif.
Facility served:	URJ Camp Newman
Designer:	Pete Lescure, Lescure Engineers, Santa Rosa, Calif.
Installer:	Shear Builders Inc., Fulton, Calif.
Type of system:	Domestic wastewater system utilizing AdvanTex secondary treatment tanks with discharge to drip field.
Hydraulic capacity:	20,088 gpd

The camp managers are sensitive to their environment, and that matches the emphasis of Shear Builders Inc., says Joe McGee, the SBI construction superintendent for the system.

"It's a great program and a great place and a great group of people to work with," McGee says. It was also a great project to work on because of its size and the need to be careful of not only a stream below the property but also a large stand of trees intended to become the site of the drip irrigation field for the wastewater system, he says.



Job demands

Through the summer the camp hosts 600 to 700 young people for a variety of programs. Campers attend when school is out of session, and the season wraps up in August. SBI was tasked with doing the work through the fall, winter and early spring. The job began in October 2011 and ended the following May, although the nature of the project did not require SBI to be on site every day.

SBI did not do the whole job. Other contractors did the electrical work, some of the piping and installed a backup generator.

Wastewater from the camp's cabins and group buildings flows through a series of pipes to the lowest point where the design called for repurposing a concrete basin already in place. That basin, about 17 feet by 11 feet by 11 feet,

“It was a lot of hand work. We rented a small trencher and did as much as we could mechanically. But as soon as we came to roots of about 2 inches in diameter, we had to hand dig beneath.”

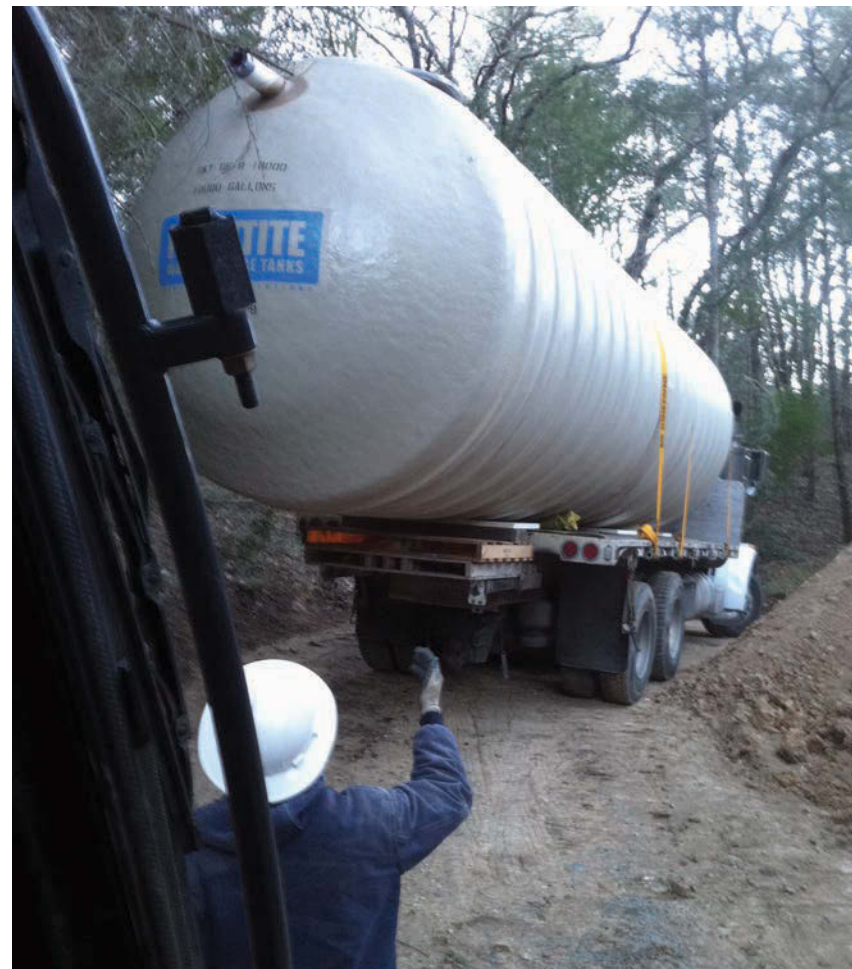
Joe McGee

was used for primary settling. A second settling basin about 6 by 10 by 8 feet clarified water before it flowed through four Polylok filters. Two Orenco PF303032 pumps sent the water through a 1,875-foot-long 4-inch force main to the secondary treatment, which was SBI's part of the project.

Equipment

- Two 10,000-gallon fiberglass Flowtite septic tanks from Containment Solutions.
- Two AdvanTex AX-MAX200-28 5,000 gpd tanks with active air circulation.
- One AdvanTex AX-MAX188-28 4,700 gpd tank.
- One AdvanTex AX-MAX175-28 4,375 gpd tank.
- One 8,000-gallon Containment Solutions fiberglass surge tank.
- Orenco TCOM-DDAX/DAX 480 control panel with remote access for the system maintenance contractor.
- Orenco PF503034 pumps to feed the discharge field.
- Orenco PF751534 pump to recirculate effluent through two of the AdvanTex tanks.
- 13,800 linear feet of 1/2-inch-diameter Geoflow subsurface drip pipe set 12 inches deep and split into four zones.
- Total capacity of the system is 22,088 gpd.

ABOVE: The drip field is installed in a stand of virgin trees at URJ Camp Newman. Because the clients wanted to preserve trees, workers had to split the force mains and run them around some of the larger tree root systems. **BELOW:** A truck delivering a Flowtite septic tank from Containment Solutions backs up in order to complete a turn on the narrow road leading up to the job site at URJ Camp Newman.



Effluent flow

The 4-inch force main from the lower level feeds water into the two 10,000-gallon septic tanks connected in sequence and with gravity moving water from one septic tank to the next. Then water flows into the four-tank Advantex system. Tanks 1 and 2 share a liquid level. Effluent circulates through all four AX units for treatment on a bacteria-holding fabric medium.



The first of four Advantex AX-MAX treatment tanks is set in place at URJ Camp Newman.

MORE INFO:

Containment Solutions, Inc.

877/274-8265
www.containmentsolutions.com

Geoflow, Inc.

800/828-3388
www.geoflow.com

Orengo Systems, Inc.

800/348-9843
www.orengo.com
(See ad page 3)

Polylok

877/765-9565
www.polylok.com
(See ad page 60)

The 8,000-gallon tank stores the treated water until pumps disperse it to the drip field.

The soil is a sandy loam. Across the site soil, depth above bedrock varies between 5 and 15 feet.

“When we were done there was a lot of erosion control. We hand-seeded the ground and manually spread straw. And it’s kind of neat to go up there now and see the grass growing.”

Joe McGee

Nor was the drip field an ideal flat piece of ground. The discharge system utilizes a large stand of trees on hills above the camp. Preserving those trees was one of the project’s challenges. “It was a lot of hand work. We rented a small trencher and did as much as we could mechanically. But as soon as we came to roots of about 2 inches in diameter, we had to hand dig beneath,” McGee says.

Trees were not planted in straight lines. “It was all virgin forest up there,” McGee says. To go around large root systems, they split the 2-inch force main

into a couple of pipes and then linked the Geoflow drip lines to those to cover the soil in and around the roots. “It looked like spaghetti up there for a while,” McGee says.

Although associated with the notion of eternal sunshine California does have a winter, and the SBI project spanned it. From about November through April or May is the rainy season. Access to the job site was a dirt road.

“We got a lot of rain that winter so there were periods of time when we couldn’t actually get in,” McGee recalls. “We had kind of a dry window there when we were actually setting the AX units.”

As it was, trucks couldn’t make it up the grade to the job site without help. One bend was so sharp drivers had to stop and back up to complete the turn, McGee says. To move the tanks SBI had its own trucks, tri-axes with 20 feet of bed. The crew built extensions for the beds so the trucks could haul the septic and AX tanks up to the site. A tractor with a backhoe hooked on to the trucks to help them get up the grade. The same was true for the 15-ton crane that came in to set the tanks. Going downhill wasn’t a problem.

High but not dry

Despite the site’s location high on a hill, the tanks were installed with deadmen to prevent them from floating. There is still some elevation above the tank site, McGee says. “It rains all winter pretty much, and the water table fluctuates greatly.” There is probably no danger of the tanks breaking through the surface, yet they’re fiberglass, and if they are completely emptied the cables will ensure they remain in the ground.

When the installation was done, the work was not. There was still the environment to take care of. “When we were done there was a lot of erosion control. We hand-seeded the ground and manually spread straw. And it’s kind of neat to go up there now and see the grass growing.”

Systems like the Advantex are becoming the norm in his part of California, McGee says. Sonoma County is a popular second-home location, and the state’s stringent environmental regulations make it increasingly difficult to find locations where traditional septic systems are permitted.

“We find ourselves more and more putting these advanced systems in challenging places, among tress and in other terrain like Camp Newman. Advantex water is so clean, the owners can use it for subsurface irrigation,” McGee says. □

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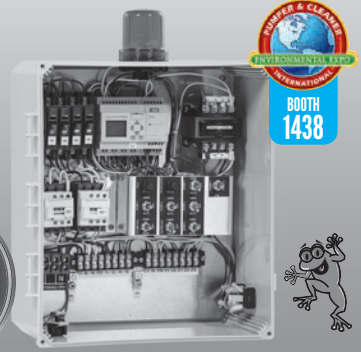
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FEBRUARY 24, 2014

SESSION	DESCRIPTION	RECOMMENDED
Preventing Tank Truck Rollovers 8:00 AM - 9:00 AM Room: 136-138 Speaker: John Conley	One of the most important tools in the liquid waste industry is the tanker truck, and the most important person is the one who drives it. While the tank truck industry, including the liquid waste sector, has a very good safety record, it does face a special challenge in eliminating tanker rollovers. According to a study conducted for the Federal Motor Carrier Safety Administration, straight tanker trucks account for over 25 percent of all cargo tank rollovers. That same study found that over 75 percent of rollovers are the result of a driver action. Most rollovers are preventable. John Conley, Past President of National Tank Truck Carriers, will discuss efforts by industry and government to eliminate tanker rollovers and other trucking safety and operations issues.	
PSAI Visions of the PSAI and the Education Initiative 9:30 AM - 10:30 AM Room: 136-138 Speakers: Jeff Wigley, Owner, Pit Stop Todd Hilde, President and CEO, Satellite Industries	The Education Initiative exists within the PSAI to advance the use of portable sanitation around the world through education regarding its benefits to humanity. Todd Hilde, President of Satellite Industries, will present an overall vision for this important effort. It is an excellent opportunity to gain a new perspective on the portable sanitation industry, and learn how you can participate in spreading this important message. In addition, Jeff Wigley, the Immediate Past President of the PSAI, will provide operators with an overview of the activities, advancements and changes within the association over the past two years.	
PSAI Industry Image 11:00 AM - 12:00 PM Room: 136-138 Speakers: Nancy Gump, Owner, Andy Gump, Inc. Sarah Nasby, Vice President, S & B Porta-Bowl Restrooms	There is a growing effort among operators and the PSAI to change the public's perception of portable restrooms, because a negative public image does reduce rental fees and ultimately profits. This effort is well underway, as operators and suppliers belonging to the PSAI have joined together to actively promote a healthy, positive image of the industry through the use of press releases, professional marketing materials, partnering with other associations and working to establish an official Portable Sanitation Day to combat the negative press usually associated with this industry. Come learn what the Education Initiative is all about, and how it can help you increase your reputation and profitability.	
PSAI State of Global Sanitation 1:30 PM - 2:30 PM Room: 136-138 Speakers: Rajeev Kher, Founder, 3S Shramik Steve Brinton, VP of Sales, Satellite Industries	It is clear that portable sanitation protects billions of people around the world from sickness and deadly diseases. However, there are many areas of the world where portable sanitation is underused or non-existent, and billions of people suffer on a daily basis. Thankfully, there are operators in these regions who are making a difference. Come hear their stories, and be inspired as you learn how valuable your business is to the community you live in.	
PSAI What's New with OSHA Safety Requirements 3:00 PM - 4:00 PM Room: 136-138 Speaker: Anthony Kuritz, Compliance Officer, OSHA	Anthony Kuritz is an Industrial Hygiene Consultant working for the Bureau of Safety Education and Training within the Indiana Department of Labor as an INSafe Training Instructor. In this session he will provide important information on OSHA's new GHS requirements for all businesses, truck and driver safety guidelines and other regulations pertaining to workplace safety. There will be time for questions and answers at the end of the presentation.	



PSAI

An Introduction to Entering the Federal Government Contracting Arena

4:30 PM - 5:30 PM

Room: 136-138

Speaker: Terri Baldwin Flanigan, Consultant, Phoenix Site Solutions

You've made the decision to enter the world of government contracting. Now what? First, we will help you understand the contract and its requirements to determine if the contract is right for you. Second, we will walk you through the process of putting a bid together. Finally, we will provide you with a list of beneficial websites pertaining to government contracts.



NOWRA

Why Do We Care About Soils?

8:00 AM - 9:00 AM

Room: 240-242

Speaker:

Randy Miles, Soil Scientist, University of MO

Soil is a valuable component of decentralized wastewater systems, as it provides the ability to disperse large volumes of effluent, and serves as a treatment component to assure public health and environmental quality while fostering recycling and reuse of water and nutrients. A discussion of critical soil properties such as color, texture, and structure, and their direct or indicator role in treating, dispersing and recycling will be presented. This session will explore why specific technologies and associated designs may need to be employed in unique soil-site scenarios.



NOWRA

Design for Dummies

9:30 AM - 10:30 AM

Room: 240-242

Speaker: John R. Buchanan, Ph.D., P.E., Assoc. Professor, University of TN

Onsite wastewater system design must be based on the volume and characteristics of the wastewater, and the hydraulic properties of the soil. This session will focus on evaluating the wastewater source to determine the area of soil required for final treatment and dispersal. Specific discussion issues include wastewater strength, daily volume, long-term acceptance rate, and boundary conditions.



NOWRA

How to do a Good Site Evaluation

11:00 AM - 12:00 PM

Room: 240-242

Speaker:

Randy Miles, Soil Scientist, University of MO

Site evaluation is the most critical input into the design and installation of an onsite wastewater system. The site evaluator must provide a prediction of the hydrological flow characteristics within the soil landscape. This session will focus on evaluation of the internal soil properties relative to their occurrence in the landscape. Discussion will include the iterative process that the site evaluator should have with the installer and homeowner.



NOWRA

Designing for Tough Sites

1:30 PM - 2:30 PM

Room: 240-242

Speaker: John R. Buchanan, Ph.D., P.E., Assoc. Professor, University of TN

Onsite wastewater systems must be designed to match the conditions of the soil and site. Frequently sites are limited by wet soils and shallow restrictive layers. This session will discuss the decision process to determine the appropriate system configuration for various site and soil conditions. Further, this session will explore various site modifications to improve the site acceptability.



NOWRA

Wastewater and Soils:

Clean It Up AND

Get It To Go Away

3:00 PM - 4:00 PM

Room: 240-242

The primary goal in dispersing effluent in the soil treatment component is to encourage unsaturated flow. Unsaturated flow provides the ability for greater contact with soil particle surfaces while allowing oxygen in the larger soil pores, thus greater treatment than under saturated flow conditions. Specific discussion will include dispersal technologies, soil properties, and water management strategies and devices.



NOWRA

Good Installation for Long-Term User Satisfaction

4:30 PM - 5:00 PM

Room: 240-242

Speaker: John R. Buchanan, Ph.D., P.E., Assoc. Professor, University of TN

The primary goal when installing an onsite wastewater system is to protect public and environmental health. However, installers should also consider ease of maintenance and landscaping as the system is installed. The system is more likely to be maintained if the components are readily accessible. Appropriate landscaping can divert surface water away from system components. This session will focus on these important issues that can make the installation a long-term success.



NOWRA

Look Out for Gophers! Taking Care of Mound Systems

8:00 AM - 9:00 AM

Room: 243-245

Speaker: Sara Heger, Engineer, University of MN

This presentation will cover providing maintenance for mound systems. It will cover the tasks related to septic tanks, pump tanks, pumps, pressure distribution, inspection pipes, the soil treatment system itself and landscaping, including those troublesome gophers.



NOWRA

ATUs - How to Make Them Work

9:30 AM - 10:30 AM

Room: 243-245**Speaker:** Tom Fritts, Vice President,
Residential Sewage Treatment Co.

Aerobic treatment units were first introduced in the mid 1950s, and have become a reliable technology when properly maintained. There are no longer just a handful of ATU manufacturers out there, and they all need qualified service providers to maintain the many different systems being sold today. We will review the basics of servicing these systems and some of the responsibilities that come with the NSF Standard 40 certification.



NOWRA

Rest Stops: A Case Study of Challenging Wastewater

11:00 AM - 12:00 PM

Room: 243-245**Speaker:** Sara Heger, Engineer, University of MN

The University of Minnesota's Onsite Sewage Treatment Program is working with the Minnesota Department of Transportation to evaluate the 51 septic systems serving the rest stops and truck garages across Minnesota at MnDOT facilities. Many of these systems are more than 30 years old, and the lack of information makes managing these systems, prioritizing replacement and designing replacement systems very difficult. It is generally understood that these systems are subject to challenging site conditions and wastewater characteristics. This presentation will cover protocol for investigation and the field data.



NOWRA

Troubleshooting Onsite Systems

1:30 PM - 2:30 PM

Room: 243-245**Speaker:** Tom Fritts, Vice President,
Residential Sewage Treatment Co.

Understanding the "treatment train" and learning how to "run the rope" are skills you should have to be a proficient troubleshooter. Troubleshooting is more than just the importance of knowing how the system works. Many troubleshooting skills are no different than those used by your family physician or Mission Control. Having a good understanding of the system and following known procedures will allow your troubleshooting visit to be efficient and effective.



NOWRA

Installation Mistakes: How to Avoid and Fix Them

3:00 PM - 4:00 PM

Room: 243-245**Speaker:** Sara Heger, Engineer, University of MN

Installing systems right from the beginning will save you time and money. Key aspects of proper installation will be discussed, including protecting the natural soil conditions, proper bedding of piping, tanks and treatment units and working on difficult sites. But what do you do when it is already been messed up? Potential remedies will be covered.



NOWRA

Marketing & Customer Service for Small Business Owners

4:30 PM - 5:30 PM

Room: 243-245**Speaker:** Tom Fritts, Vice President,
Residential Sewage Treatment Co.

Designing, installing, pumping and servicing ... is that enough? NO! Our businesses are not run by executives in penthouse offices ... we are the executives ... we are the entrepreneurs. Learning easy ways to market your company and effective customer service can take your profits to the next level. You may be surprised how many tools you already have that you are just not using.



SSCSC

Personal Safety

8:00 AM - 9:00 AM

Room: 231-233**Speaker:** John Chadwell,
Western Regional Manager, EHS International

This is a fascinating, high-energy class that's applicable to challenges encountered in today's workplace. It will provide an overview of industry safety issues such as workplace violence and personal safety, as well as the tools necessary to deal with the challenges of working with the public and with fellow employees. Throughout attendees will be presented with concepts on how to develop a survival mindset that could help improve their overall safety through personal awareness training. Attendees will leave with a better understanding of personal safety at the workplace or worksite, and valuable lessons that can be applied to their lives outside of work.



SSCSC

Understanding the Nuances of a Quality CCTV Inspection Program

9:30 AM - 10:30 AM

Room: 231-233**Speaker:** Jim Aanderud,
Owner/President, Innerline Engineering

The success or failure of any pipeline inspection program comes down to two important factors – the quality of the videos and the quantity of footage inspected. Falling short in either one can prove fatal for the contractor and the public agency alike. This class will clearly define the makeup of a quality pipeline inspection, and discuss the steps that must be taken to produce a superior video. We will also look at specific and proven ways in which we can increase production and profitability. This class will help define a successful CCTV inspection program.




	SESSION	DESCRIPTION	RECOMMENDED
SSCSC	<p>In the Trenches with Trenchless Pipeline Repair and Renewal 11:00 AM - 12:00 PM Room: 231-233 Speaker: Mark Hill, P.E., Civil Engineer, Michael Baker Corp.</p>	<p>Trenchless pipeline repair and renewal is a growing industry with new innovative processes being offered. This class takes a look at the benefits and drawbacks of some of the most common and some of the innovative pipeline repair and renewal technologies currently on the market. We will look at the specific site conditions that are a challenge for trenchless rehabilitation, what has been successful, and what has fallen short.</p>	<p>Cleaner </p>
SSCSC	<p>Nozzle Application: What, Why, Where, When and How? 1:30 PM - 2:30 PM Room: 231-233 Speaker: Duane Johnson, Vice President, Affordable Pipeline Services</p>	<p>Too often cleaning truck operators believe that only one or two nozzles are sufficient to complete any project. Just because they have had great results with one nozzle in certain cleaning applications, they unfortunately continue to use the same nozzle in every other cleaning condition. This class will look at a variety of cleaning situations and discuss the various options available for cleaning. We will focus on specific pipeline conditions, and then discuss the precise type of nozzle needed to efficiently clean in each of these situations. Our goal will be for each attendee to learn a new approach to pipeline cleaning, and to begin thinking outside of the box when it comes to encountering new and challenging cleaning situations. Our ultimate goal is to increase effectiveness and productivity for each operator by always using the correct nozzle in any given cleaning condition.</p>	<p>Cleaner </p>
SSCSC	<p>Stop It! 3:00 PM - 4:00 PM Room: 231-233 Speaker: Denis Pollak</p>	<p>The ins and outs of plugging and line stopping of sanitary sewers can be very challenging, and a sizable risk to say the least. There are many ways of controlling flow with the use of inflatable and mechanical pipe plugs. The standard of care and safety when plugging is sometimes overlooked or misunderstood. In this class we will take a close look at plugging, and discuss their advantages and practical uses. We will also look at alternative methods of controlling flow, such as line stopping, pipe freezing and bypassing. Plugging can be a very effective tool in a variety of applications. For example, by controlling the flow, lines that would otherwise be inaccessible can be accessed and inspected by conventional CCTV inspection equipment. We will look at how plugging can be a valuable tool for CCTV, cleaning and rehabilitation projects.</p>	<p>Cleaner </p>
SSCSC	<p>Getting the Most out of your Combination Unit 4:30 PM - 5:30 PM Room: 231-233 Speaker: Rick Lewis</p>	<p>During today's economic times, agencies and contractors are keeping their combination units much longer. In order to extend the life of these units, there are critical steps that must be taken in order to guarantee that they continue to function at the optimum level. In this class we will define the key components of a combination unit and provide the necessary tools to maintain the truck and maximize its efficiency. We will discuss procedures and tricks of the trade that are needed in order to maintain its proficiency while ensuring its safety.</p>	<p>Cleaner  Pumper </p>
WJTA-IMCA	<p>Preparing for Your First High Pressure Waterjetting Job 8:00 AM - 9:00 AM Room: 133-135 Speaker: Gary Toothe</p>	<p>Waterblaster? Check. High-pressure hose? Check. Let's do some waterblasting. Hold on there, partner. There is a lot more to successful waterblasting than just loading up the truck. Let's start with, "What are you trying to do?" Now be careful, this may be a question with more than one answer! In this session we will explore what needs to happen before the wheels ever start rolling for that first (or any) waterblasting job.</p>	<p>Cleaner  </p>
WJTA-IMCA	<p>Vacuum Truck Operation and Safety 9:30 AM - 10:30 AM Room: 133-135 Speaker: Gary Toothe</p>	<p>One of the bigger myths in the industrial cleaning industry is that there is nothing to operating a liquid vacuum truck. Nothing could be further from the truth. What you don't know about proper vacuum truck operation and safety could cost you a job, a truck, or a life. In this session we will explore the basics of liquid vacuum truck operation and safety on materials from water up to flammable liquids, and what your people need to know before they fire that unit up.</p>	<p>Cleaner  Pumper </p>

Hydroexcavation: Getting the Best Bang for Your Buck

11:00 AM - 12:00 PM

Room: 133-135

Speaker: Neil McLean

Learn how to dial your hydroexcavation truck in to make your company look professional to your customers while increasing production, performance and safety. This program will discuss options like multiple wands and the right nozzle design to increase your performance. You will also learn how to use proper water management for the best production outcome.



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Marketing on a Shoestring

1:30 PM - 2:30 PM

Room: 133-135

Speaker: Suzan Chin, Founder and Chief Marketing Officer, Creative Raven

What you are experiencing in your business today is not because of what you are doing at this moment in time, but rather a direct result of what you did or failed to do six to nine months ago. This session will review five important marketing activities that can be accomplished on a modest budget in a relatively short period of time: 1. The World's Smallest Brochure: How to make your business card one of your most powerful marketing and advertising tools 2. Networking: Tips and tricks for tapping into your personal and professional networks and creating a powerful 15 or 30 second "elevator pitch" for networking events and meeting key strategic influencers and gatekeepers 3. Website Auditing: Performing an in-depth review of your online presence, developing a plan for making your website a better marketing or sales tool for your business 4. E-Newsletters: Using the power of e-based communication to nurture prospects into customers and keep existing customers wanting more 5. Press Power: Getting positive publicity and your name in the headlines and leveraging positive press exposure. Participants will leave with instructions, resources and samples on how to implement these budget-friendly marketing activities quickly and easily for their business.

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Getting Some.....

3:00 PM - 4:00 PM

Room: 133-135

Speaker: Suzan Chin, Founder and Chief Marketing Officer, Creative Raven

Brand recognition and positive publicity ... how do those big companies do it? This session will provide an interactive view of branding, its core components, what goes into creating a great brand and marketplace recognition. We will review why consistency is key, how color and presentation can set a company apart, as well as "personal branding." For many small to medium-sized businesses, personal branding is crucial to developing customer loyalty and powerful word-of-mouth referral business. Participants will learn: What goes into creating a great logo and memorable visual branding identity; Key components of establishing a brand and market perception; Essentials for developing your "personal brand" and engaging your customer. Publicity also plays a vital role in establishing a brand and keeping a company in the forefront of the target customer's mind. Often more powerful than paid advertising, it is a frequently overlooked and underused form of marketing, and this session will demonstrate how participants can tap into this inexpensive form of marketing that has incredible return on investment. Take aways include: Basics of developing a great news release; Insider tips for writing your own feature news articles; and idea generators for publicity and positive PR.

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The Online Marketing Toolbox

4:30 PM - 5:30 PM

Room: 133-135

Speaker: Suzan Chin, Founder and Chief Marketing Officer, Creative Raven

Be present and present ... navigating and exploiting the world of online marketing. Like it or not, online media is now a part of our daily lives. Smart phones, tablets, laptops, WIFI – we are a society that is "wired-in" so business owners need to take advantage of all this new and ever-evolving platform for communication. Today's online marketing toolbox needs to include many components: an engaging website with great content, social media, SEO and blogging. But how as a busy business owner do you develop these and ride the digital marketing wave? This session will review: The nuts and bolts of developing a responsive website; What business owners need to plan for and be ready to implement; Creating compelling content; How, when and why to use social media and the basic skills needed for getting involved. As SEO rules and algorithms have changed dramatically, we will share what can impact a site's rankings and the use of blogging to boost traffic, visibility and higher placement in search results including: How to set up a blog; Creating an editorial calendar; Ongoing maintenance tips; Connecting it to social media efforts. At the end of the session, participants will have a greater understanding of how all the different forms of digital communication work together, what tools are best suited for helping them achieve their goals and how to start incorporating e-based communication methods into their overall marketing strategy.

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NAWT

**CSA 2010 Implementation/
Impact on Carriers/Drivers**

8:00 AM - 9:00 AM

Room: 234-236

Speaker:

Buddy Mauger, Compliance and Training Specialist

This training will discuss the implementation of CAS 2010 and what it will mean for companies and drivers. We will cover what you will need to stay out of trouble with the new requirements of CSA 2010. We will show you how to check your CSA 2010 "BASIC" scores to see where any problems may be. We will also create a DOT Portal Access and review data via the U.S. DOT Portal.

Pumper

NAWT

**DataQ's: When and
How to Challenge**

9:30 AM - 10:30 AM

Room: 234-236

Speaker:

Buddy Mauger, Compliance and Training Specialist

In this session we will take a look at the U.S. DOT's DataQ Challenge Protocol, and how and what to look for when reviewing roadside inspections. The training will cover the following: DataQ's how to log on and create a user profile, submitting a challenge to an inspection, how to review your data to find changes and what to do to challenge an error, and how to request reports via DataQ.

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NAWT

**US DOT Update/Recent, Upcoming
and Proposed Regulations**

11:00 AM - 12:00 PM

Room: 234-236

Speaker:

Buddy Mauger, Compliance and Training Specialist

This training will cover recent changes, updates and proposed regulations. It will cover hours of service regulations (changes and court challenges), electronic logs (scheduled 2015), entry-level driver training requirements (scheduled 2014), National Registry of Medical Examiners (May 2014) and Skill Performance Standards (July 2014).

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NAWT

**What is a Good Septic
System Inspection?**

1:30 PM - 2:30 PM

Room: 234-236

This seminar will discuss the basics of a septic system inspection, including why it is important to locate and open all components of the system. It will provide information on locating techniques, evaluation of drainfields, and interacting with homeowners or other clients about scope of services and results.

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NAWT

**The History of the PSMA
Hydraulic Load Process**

3:00 PM - 4:00 PM

Room: 234-236

Speaker:

Ray Erb, Consultant, Thomas Erb & Sons, Inc.

The development of the Pennsylvania Hydraulic Load Test will be presented. This will include the background on why the test was developed, and what problems were hoped to be solved by conducting the test during a septic system inspection. The current procedures will be discussed, with an introduction to some of the problems with the test and potential solutions.

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NAWT

**Improving Arizona's Inspection
Program to Meet Modern Challenges**

4:30 PM - 5:30 PM

Room: 234-236

Speakers: **Dawn Long****Kitt Farrell – Poe**, Ph.D, Professor, University of AZ

The Arizona Transfer of Ownership Inspection Program began in 2001. In the past 13 years, it has become evident that improved inspection procedures are needed for determining the physical and operational condition of seepage pits and for properties that have been vacated for extended periods of time. Arizona is looking at the NAWT Hydraulic Loading Test as a standard operating procedure to address these issues.

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NEHA

DEER in the Headlights

8:00 AM - 9:00 AM

Room: 237-239

Speaker: **Doug Lassiter**, Executive Director,
North Carolina Septic Tank Association

Downsized Effective Efficient Regulation (DEER) should be on everyone's minds. Most states and jurisdictions developed their regulations concerning onsite permitting and septage over decades of efforts, creating a piecemeal document that is cumbersome and confusing to the normal person. Many times it's a prescriptive standard and because of its mass, is slow to react and embrace the accelerated rate of technologies in our field. This discussion may step on some toes, but the industry is changing and we must change with it. DEER is essentially creating less bulk, more adaptability in the regulations bringing better returns in the commerce of residential and commercial building. This presentation will help you make positive change in how regulations affect you — the onsite wastewater professional.

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NEHA

Basic Chemistry of Onsite Wastewater Treatment Systems

9:30 AM - 10:30 AM

Room: 237-239

Speaker: **A. Robert Rubin**,
Emeritus Professor, North Carolina State University

For onsite wastewater professionals, understanding the chemistry of wastewater is essential to understanding the technology needed for each situation. This presentation will provide a basic overview of the chemical reactions that take place in onsite wastewater systems, and how those reactions are influenced by outside factors. Alkalinity, water hardness, and the effects of temperature and time will all be discussed. By the end of this session, attendees will have a basic understanding of the chemical reactions that take place in onsite systems, and their relationship to technology that is used. Additionally, this will provide background material to support management requirements, an element of any successful system.

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NEHA

Making the Most of Your Experience: Training and Credentials for the Onsite Wastewater Professional

11:00 AM - 12:00 PM

Room: 237-239

Speaker: **Anthony Smithson**, Consultant

Historically, training in the onsite wastewater industry has been on-the-job and code-specific, or a notch better for those lucky enough to have training center in their state. National organizations like NAWT and NOWRA are working to change that by bringing training developed by the respected members of the Consortiums of Institutes for Decentralized Wastewater Treatment to areas that have been underserved in getting a more comprehensive view at onsite technologies and strategies. To further advance the profession, the NEHA certified installer of onsite wastewater systems credential examination will be offered with the training as applicable. This presentation will focus on how training and credentialing can develop stronger onsite programs, and on the positive impacts that training and credentialing can have on all levels of the onsite wastewater industry.

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NEHA

Winners Communicate!

1:30 PM - 2:30 PM

Room: 237-239

Speaker: **Doug Lassiter**, Executive Director,
North Carolina Septic Tank Association

As onsite wastewater systems evolve and get more complicated, communication is needed – especially when the management of systems is required. This is a discussion on the essential nature of constantly improving communication lines within a business, whether it's with regulators, customers, employees, or the public. The leaders in any field of industry, in the community, or in government are always the persons that can communicate with their target audience. This presentation gives some common traits of successful people, how they improve their talents, and how they are rewarded for their efforts. Sometimes, it's not the shiny, new truck that people remember. It's the memory that the person took the time to communicate, and that's what separates them from their competition.

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NEHA

Best Available New Technology

3:00 PM - 4:00 PM

Room: 237-239

Speaker: **A. Robert Rubin**,
Emeritus Professor, North Carolina State University

Amazing new technology for onsite wastewater systems is being developed all the time. But how do you know what works for what situation? This presentation will provide information on new technologies that incorporate disinfection, nutrient removal and water re-use. Included will be how these systems work, and what environments are best suited for their use as well as advantages and pitfalls of new technologies. The presentation will wrap up with a discussion of the management responsibilities that go hand-in-hand with new technology. Please note: it is recommended that you attend the Basic Chemistry presentation prior to this presentation to make the most of the material presented.

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NEHA

Best Available New Technology: How to Get Your Regulator On Board

4:30 PM - 5:30 PM

Room: 237-239

Speaker: **Anthony Smithson**, Consultant

Every year new technologies are developed for the onsite wastewater industry. But fitting the new technology into old regulations takes a bit of work. This presentation will focus on taking new technology and ways to make it work within constrictive regulatory frameworks. Understanding how the regulatory process works and how new technologies are approved make the whole process a bit easier. Included will be a discussion of how regulations can be designed to foster new technology and improve practices across the industry.

ONSITE
installer



NASSCO

Lessons Learned During Sewer Rehabilitation on Public and Private Property

8:00 AM - 9:00 AM

Room: 130-132

Speakers:

Robert Kelly, P.E., Director of Engineering,
City of Westlake
Scott Belz, URS Corporation

In 2001, the City of Westlake implemented an Inflow and Infiltration (I & I) program to eliminate excessive storm water from entering their sanitary sewer system during rain events. They hired URS Corporation of Cleveland, Ohio, to conduct the I & I testing portion of the program. Each area used similar rehabilitation techniques; however, through the course of each project, certain lessons were identified from the testing, to the bidding and finally during the construction phase. Various rehabilitation techniques, materials and methods have been conducted in each area. The city modified their program in the subsequent phases based on the lessons learned in each previous phase. Even though different rehabilitation methods have been used, all reduced I & I. The areas and year of completion are Salem-Radcliffe Subdivision (2001), Berkeley Estates (2004) and Canterbury Area (2007), and Melrose Area (2011). Through this program, the city has successfully eliminated I & I from each area tested, reduced basement flooding and improved overall storm drainage.



Cleaner



NASSCO

Pipe Bursting a Mature and Diverse Trenchless Technology

9:30 AM - 10:30 AM

Room: 130-132

Speakers:

Matt Timberlake, Vice President,
Ted Berry Company Inc.
Matt Werth

Pipe bursting is a mature and widely used trenchless method for renewal of deteriorated and undersized gas, water, sewer, utility conduits and other pipelines throughout the world. Pipe bursting is an economic pipe replacement alternative that reduces social disturbance to business and residents when it is compared to the open cut technique or pipeline rehabilitation techniques. This presentation will describe current pipe bursting practices used successfully throughout the world, and will assist those involved in pipeline replacement and/or rehabilitation projects to evaluate the capabilities of pipe bursting and its practical application. Information shared will be consistent with the IPBA guidelines for pipe bursting, which is widely recognized as the most current and factual pipe-bursting document available.



Cleaner

NASSCO

Resurgence of Chemical Grout Industry: Niche Business Opportunities

11:00 AM - 12:00 PM

Room: 130-132

Speakers:

Donald Rigby, Director of Marketing, Avanti International
Richard Schantz, P.E., Consulting

This presentation will include an overview of small business opportunities doing specialty grouting in the utility and construction industry. It also covers the various major market segments, overall soil, pipe trench and structure considerations, types of grouts available, how to develop your know-how and building a sound business reputation.



Cleaner

NASSCO

Chemical & Biological Control of F.O.G. in a 2,500-Mile Collection System

1:30 PM - 2:30 PM

Room: 130-132

Speakers:

Brian Conroy, Duke's
Jim Elliott, Vice President of Sales, In-Pipe
Rich Schici, In-Pipe

This session will review a treatment plant-friendly method of grease elimination from a sewer collection system. The technique causes the grease to be liquefied, allowing it to be flushed downstream without re-coagulating. This technique will be illustrated for the control of fats, oils and grease in a 2,500-mile collection system.



Cleaner



NASSCO

Lateral Rehabilitation, What's Available?

3:00 PM - 4:00 PM

Room: 130-132

Speaker:

Jacob Trapani

In this session we will offer a complete overview of all lateral and main/lateral connection rehabilitation technologies available today. In an effort to seek a viable, cost-effective solution to one of the most significant contributors to our failing sewer infrastructure, technology providers have developed several methods to structurally repair and/or seal lateral pipes and their connection to the main sewer. Individual lateral pipes often have multiple bends, diameter changes, shifted joints, cracks, deposits, and roots, which create considerable challenges to repair or seal. The lateral pipe connection to the sewer main also poses problems due to leaks, cracks and poor alignment. Accessibility of lateral pipe is another issue, since one end is located in the sewer main and the other in a building. In some cases, a clean-out exists either in or outside of the building. It is critical that the methods developed cope with the existing conditions to provide an effective product and installation method that can be installed efficiently.



Cleaner



NASSCO

Fiber Optic Temperature Sensing Technology for CIPP Cure Quality Control

4:30 PM - 5:30 PM

Room: 130-132

Speaker: **Don Barnhart**,
Product Manager, Janssen Technology

For cured-in-place pipe installation, fiber optic technology offers a quantum leap in temperature resolution over conventional practice to assist contractors in revealing and overcoming heat sinks inhibiting cure and for better control of the cooldown process as well. With temperature knowledge every inch along the liner, contractors also avoid costly labor and fuel costs associated with over-cooking the liner.



Sales and Customer Service

Be Always Profitable: Setting up the Sale

8:00 AM - 9:00 AM

Room: 140-142

Speaker: **Frank Taciak**

This session teaches participants methods and guidelines for a successful sales call. Sales, whether we want them to or not, drive business. They either make our profit, or kill our success. Making a profit always starts before the job begins because "if it wasn't planned at the beginning it won't be found at the end." Participants will learn: How Sales = Profit; Implementing effective sales techniques and concepts; How to set up sales for business potential. Figuring what your costs are so that you charge for it. How to stop worrying about the competition. Setting up sales for maximum success. Participants will leave this session with key strategies to set up their sales process for maximum success.

Pumper Cleaner

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MUNICIPAL SEWER WATER

GAS OIL MINING CONTRACTOR

PRO
PORTABLE RESTROOM OPERATOR

Sales and Customer Service

Be Always Profitable – Your Best Sales Presentation

9:30 AM - 10:30 AM

Room: 140-142

Speaker: **Frank Taciak**

This session provides an overview of the actual sales process. Participants will learn a step-by-step method of presenting their business and creating a win-win outcome for both contractor and customer. Participants will learn: Where the sales presentation starts; How to handle calls, emails, and communication; Methods for setting up the appointment; Guidelines for meeting with customers; Effectively using selling options; How to close the sale. Participants will take home methods, ideas, and concepts that they can immediately use in making their sales process more successful.

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MUNICIPAL SEWER WATER

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Sales and Customer Service

Be Always Profitable – Servicing Your Sale

11:00 AM - 12:00 PM

Room: 140-142

Speaker: **Frank Taciak**

This session teaches participants how to both manage job fulfillment in their sales process, as well as create positive customer attitudes about their work. Customer service is key in effective business and making sure customers are happy is no longer an option in our marketplace. Participants will learn: Guidelines for setting up the work schedule; Basics of structuring man power on the job; Rules for managing contact with the customer; Strategies for guaranteeing payment. Participants will leave with a thorough understanding of customer service skills and how to best use these in all aspects of their work.

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MUNICIPAL SEWER WATER

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Sales and Customer Service

Be Always Profitable – Our Attitude to Success

1:30 PM - 2:30 PM

Room: 140-142

Speaker: **Frank Taciak**

Can YOU have a successful life and business? This session answers that question, and gives participants the tools they need to make their life ... WORK! Never before have there been as many tools and strategies available to make a business successful, but are we implementing them? Participants will learn: How to implement an effective plan; How to turn a successful business into a successful life; Learn to envision what winners look like. At the end of this session, participants will leave with the knowledge, skills, and motivation they need to achieve success in their life's work.

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MUNICIPAL SEWER WATER

GAS OIL MINING CONTRACTOR

PRO
PORTABLE RESTROOM OPERATOR

NPCA

7 Things you Should Know About Design, Installation and Maintenance of Precast Concrete Septic Tanks

3:00 PM - 4:00 PM

Room: 140-142

Speaker: **Claude Goguen P.E.**

As population in the U.S. continues to migrate away from cities and into rural areas, and as municipalities struggle with limited infrastructure budgets, there has been a larger demand for high-quality, efficient and durable onsite wastewater systems. In order for those systems to successfully treat residential wastewater, all the components must work efficiently to allow for the chemical and biological reactions to occur. This includes the proper design and performance of the structures that house and convey the wastewater as it's being treated. Precast concrete manufacturers are tasked with providing reliable structures that will be subjected to a variety of loads and extreme exposure conditions. At the same time, they must be easily installed, watertight, and able to house the evolving

onsite installer

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NPCA

(continued)
7 Things you Should Know About Design, Installation and Maintenance of Precast Concrete Septic Tanks

treatment technologies that serve to reduce nutrient loading into the soil and groundwater. This course will explore the stresses that precast concrete tanks are subjected to in service, and how they are designed to counter those stresses. The course will also include discussion on watertightness, proper installation practices and testing. The attendee will be able to describe stresses on an underground wastewater treatment tank in service, identify the main keys to a watertight precast concrete septic tank, and give three examples of poor tank installation practices that could jeopardize the effectiveness of the septic system.



NPCA

Grease Interceptors: A Slick Solution to a Greasy Problem

4:30 PM - 5:30 PM

Room: 140-142

Speaker:

Cyndi Glascock, Design Consultant, Gainey's Concrete Products

As communities across America are struggling to maintain aging sewers, it is more important than ever to manage harmful discharges that may compromise the effectiveness of the system. Precast concrete grease interceptors play a major role in pretreating grease-laden waste streams and protecting the sewer systems. They must be designed to provide easy access for maintenance and be sized to hold large quantities of grease to reduce pumping/cleanout costs. This course will cover elements of proper design of grease interceptors, including sizing and placement of baffling tees and filters. That design must also take into account anticipated loading conditions. The course will also include best practices in selecting the location for the grease interceptor as well as proper installation. Attendees will be able to: Size large outdoor precast grease interceptors; Differentiate between hydrodynamic and gravity-fed grease interceptors and their sizing charts; Define the key factors to designing grease interceptors for site loading requirements; Identify the considerations required for properly installing a grease interceptor.







FEBRUARY 25, 2014

SSCSC

Don't Fear the Shapefile

8:00 AM - 9:00 AM

Room: 231-233

Speaker:

Mark Hill, P.E., Civil Engineer, Michael Baker Corp.

More and more agencies and companies have implemented GIS mapping and want to provide that data to their contractors performing work. This class will address what to do with the data, what it looks like, how to import it into common CCTV inspection software, and how to link data to it for a submittal.





SSCSC

What's Important for Your Company; Is it Size, or Profit or Both?

9:30 AM - 10:30 AM

Room: 231-233

Speaker:

Duane Johnson, Vice President, Affordable Pipeline Services

It is often said that most small businesses fail to have a plan and most often tend to operate reactively. As they get busier, they add more employees and more equipment in order to meet the added workload. Without a plan, this approach can have devastating effects on a company by destroying their financial solvency. It's important to understand the true meaning of growth and the real costs associated with it. This class will look at some of the important questions that must be asked and analyzed before embarking in any future growth. Participants will help bring into focus the proper approach for making correct business decisions. As an owner and manager of two distinct businesses (a drain cleaning company and a pipeline cleaning and inspection company), Johnson will take on a unique approach as he discusses some of the challenges that come from growth and the need to stay focused on profitability. Remember that bigger is not always better, sometimes it is just bigger.








SSCSC

1 + 1 = 14: Cleaning and Inspection Equipment Working as one Entity

11:00 AM - 12:00 PM

Room: 231-233

Speaker:

Jim Aanderud, Owner/President, Innerline Engineering

Whether it's cleaning and video projects or specialized cleaning applications, the way in which combination units and CCTV inspection vehicles work together will determine ongoing success. In this class participants will look at the relationship between these two pieces of equipment, and discuss the importance of the working relationship between their crews. They will focus on the importance of planning, communication, organization and execution, then will look closely at the keys to success in cleaning and video projects, and the methods for maximizing production and profitability. They will also look at the proper use of CCTV cameras during high-end cleaning and cutting applications and discuss their importance for safety and cleaning effectiveness.





NAWT

Be Ready to Land Apply

8:00 AM - 9:00 AM

Room: 234-236

Speaker:

Bill Toffey, Owner, Effluent Synergies LLC

The purpose of this session is to start at the beginning when a decision is made to land apply septage. Local community and site conditions will be discussed; along with what equipment is needed to properly land apply under different conditions, agreements with landowners, scheduling application times, and what it takes to meet the Federal 503 regulations on pathogen control, including lime stabilization and reporting requirements.



NAWT

Soils and Cropping Systems

9:30 AM - 10:30 AM

Room: 234-236

Speakers:

Bruce Fox, Partner, Allstate Septic Systems LLP**Dave Gustafson**, UW MN

This session will concentrate on the land-application site from the perspective of the soil and slope conditions and how they impact application rates. Erosion and runoff control measures and oil separation requirements will be discussed. The identification of sensitive areas that need to be addressed, along with setback requirements from sensitive areas, buildings, and roads will be highlighted.



NAWT

Land Application Rates and Nutrient Management

11:00 AM - 12:00 PM

Room: 234-236

Speakers:

Bruce Fox, Partner, Allstate Septic Systems LLP**Jim Anderson**, Education Coordinator, NAWT

This session will look at both daily and yearly application rates. Establishing a nutrient management plan will be discussed. How to stay within the nitrogen application rate requirements while balancing crop nutrient needs will be discussed. Crop selection will be discussed from both an application rate perspective as well as crop usage for animal feed.



Customer Service & Employee Development

Gen Y + Gen X +**Baby Boomers = #@\$%???**

8:00 AM - 9:00 AM

Room: 237-239

Speaker: **Jerard Nighorn**, Lenzyme

Solve this equation ... this seminar will be packed with generation laughter. Attendees will learn how to solve hiring problems, keep customers, collect receivables and communicate across generations. The answer to this equation will help all business owners solve problems they may not even know are happening, and create a new way of looking at customers, workers, co-workers and generations in whole. Knowing the answer or knowledge will sure help to increase your overall business profits and take you and your business to the next level.



Customer Service & Employee Development

Get and Keep the Best Coworkers

9:30 AM - 10:30 AM

Room: 237-239

Speaker: **David Heimer**,

Chief Operating Officer, Service Roundtable

You can't grow your business if you can't find, hire and keep the right people. Why is it that some companies can't find qualified personnel, while other companies always have a flood of applicants and get to pick and choose? Why are some companies always fighting turnover battles, while other companies routinely keep their best employee for 20-30 years? Heimer will show attendees how to build a recruiting pipeline, attract the kind of employees they want, and keep them for years. He will share real-life positive and negative experiences from service business owners, and the lessons learned. You CAN find and keep the coworkers you want; you just need to learn how.



Customer Service & Employee Development

Win, Win, Win in Residential Service Contracting

11:00 AM - 12:00 PM

Room: 237-239

Speaker:

Bill Raymond, Co-Owner, Frank and Lindy Plumbing Heating and Cooling

Learn how to create a well-balanced company that wows its customers, nurtures employees and achieves their financial goals. So often one or more of the three are missing. This workshop will focus on fundamentals from each area, bringing a better understanding of business planning, customer expectations and employee development and retention.



OSHA Confined Space and Fall Protection Untangled

8:00 AM - 9:00 AM

Room: 240-242

Speaker: **Chris Cira**, Partner, MTech

This session presents a different and unique high-level overview of confined space, air monitoring and fall protection regulations. We will untangle the multitude of regulations regarding these topics and bring it down to a practical and understandable approach and most important an approach that can actually be implemented in the field. We will also touch on the differences related to general industry, construction, agriculture and maritime regulations, and which one impacts you in the field.

**Air Monitoring Application for the Liquid Waste Industry**

9:30 AM - 10:30 AM

Room: 240-242

Speaker: **Ed Fitzgerald**, Jack Doherty Companies

This program will outline the application and use of air monitoring equipment for confined space and area monitors as it applies to the liquid waste industry. It will be in layman's terms, and will include a review of terminology such as PPM, LEL, TWA and % X Volume. All alarm points, as they apply to the industry, will be compared to day-to-day exposures that we all experience so that the employee will understand that they are protected and will not feel any effects when the alarm sounds.

**Vacuum Loaders**

9:30 AM - 10:30 AM

Room: 243-245

Speaker: **William Akins**, Manger, Vac-Con Services Inc.

This program will outline the different applications of various vacuum trucks (combination machines, hydroexcavators, and industrial machines). It will also outline use cases for determining necessary equipment. This program will then give a detailed overview of industrial vacuum trucks, their components, and capabilities. It is intended to be interactive with active Q&A throughout.

**The Value of DOT Certification for Vacuum Trucks**

11:00 AM - 12:00 PM

Room: 243-245

Speaker: **Anne Brantley**, Director of Product Development, Wastequip Cusco

In this session attendees will discuss the purpose of DOT certification to strengthen a truck's tank and bumper to prevent spillage of hazardous materials during rollover accidents or rear-end collisions. Trends indicate that DOT certification is being required for more types of materials – not just hazardous material. DOT certification can increase the price of vacuum truck by as much as 20 percent, so when should fleet owners make that extra investment? What are the requirements for truck DOT certification, and how can you choose a reputable manufacturer to ensure your fleet is in compliance with evolving regulations?

**Take Control of Inflow & Infiltration in Manholes**

8:00 AM - 9:00 AM

Room: 130-132

Speaker: **William Goff**, Sealing Systems

Many people are aware of the challenges inflow and infiltration bring to any utility. However, they may not be fully aware of how easy it is to identify the problems, and what methods are recommended to fix them. This presentation will give attendee a closer look at infiltration identification, and methods and products to use for correction and remediation of infiltration and rehabilitation. It will also address proactive efforts and products to reduce or deny infiltration and thus eliminate the need for rehabilitation. Prevention is always less costly than remediation.

**DC Water is Utilizing CIPP to Rehabilitate the Nation's Capital**

9:30 AM - 10:30 AM

Room: 130-132

Speaker: **Muminu Badmus**, Projects Manger, Perma-Liner Industries, LLC.

DC Water provides critical water and sewer services to the nation's capital; the infrastructure that supports these services is old and deteriorating. The median age of the 1,800 miles of sewer pipe is 86 years old, with some in-service trunk mains installed before the Civil War. One of DC Water's strategic initiatives is to evaluate different technologies to improve service delivery while lowering asset life cycle costs. The lateral program seemed a likely candidate to evaluate trenchless solutions, since over 20 percent of the project costs were related to restoration. DC Water staff were interested in a trenchless solution, specifically a cured in place pipe (CIPP) solution, as a possible alternative to the traditional open-trench method.



MUNICIPAL

Nozzle Explanation and Selections

11:00 AM - 12:00 PM

Room: 130-132**Speaker:****Scott Paquet**, President/CEO, NozzTeq Inc.

In this session participants will discuss the different types of nozzles available on the market today, including how you make your selection and what to look for in a nozzle. Paquet will examine hose-line loss and what this means when setting a nozzle up properly. Participants will look at the design of nozzles and why some are more effective than others. This will give the end user an education in determining what nozzles to purchase and in the selection of nozzles. A supplied hose-line loss chart will explain why the end of the hose pressure is the most important. Participants will also cover how to test nozzles with a cost-effective test kit. This will also include complete instructions to make the proper selection and an understanding that one nozzle does not do it all.

Cleaner

INSTALLER

Septic Tank Bells and Whistles

8:00 AM - 9:00 AM

Room: 133-135**Speaker:****Bob Smith**, Engineer, Orenco Systems, Inc.

There are a number of different accessories for installation with a residential septic tank. The broad categories include equipment for ease of access, equipment for improvement of effluent quality, equipment for ease of operation and maintenance and equipment for improving dispersal distribution. This presentation will go over these four classes of septic tank accessories and how they can benefit the function and maintenance of an onsite system.

ONSITE installer

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Aeration Units for Onsite Septic Systems

9:30 AM - 10:30 AM

Room: 133-135**Speaker: David Flagg**, President/CEO
Septic Services, Inc.

This session will touch on the history of aeration, and the difference between aerobic and anaerobic digestion. It will move along to the many types of tanks, aerators and features and benefits of each design, along with diffuser types, filtering, electrical requirements, and safety and maintenance of the system, effects on the adsorption field, including both pictures and video. Aeration is not a new process, as its use began at the turn of the century in municipalities, and began to be used on residential sites as far back as the 1940s. However, because of the high cost and less concern for the environment, the process did not become popular until many years later. In a septic tank, anaerobic bacteria digest the sewage and require little to no oxygen to break down the waste material. In an aeration tank, aerobic bacteria require lots of oxygen to survive to break down and digest the sewage, so consider anaerobic bacteria at the speed of Wile E. Coyote and aerobic bacteria like the Roadrunner. By aerating a tank, it allows you to process more sewage in a smaller space, producing a cleaner effluent to the adsorption system. The benefits in the adsorption field will also be discussed.

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Understanding ATUs, their Service Requirement, and Maintenance

11:00 AM - 12:00 PM

Room: 133-135**Speaker: Doug Dent**, Ecological Labs

The presentation provides detailed information on how to service ATU systems, how to evaluate problems from influent to effluent, and the equipment needed to assure correct identification of system problems from as simple as; when to pump an ATU, the need to check pH levels from time to time, dealing with odor issues, to understanding the good guys in biology to the bad guys, this referring to sludge bulking caused by filamentous microorganisms. The presentation reviews ATU design and comparison to standard onsite septic systems, with adequate attention to the importance of the ATU's relationship with biology presented in an easy to understand technical format that will satisfy both new and seasoned operators, and service personal. The program covers the ATU biological process, factors that effect ATU performance, and methods and tools necessary to identify, correct, and resolve many ATU problems. The session includes hand-out materials and information to meet the session's goal of achieving a level of knowledge and understanding that will allow proper service of ATU systems by those that attend the session.

ONSITE installer

PORT. SANITATION

The Best of Both Worlds

8:00 AM - 9:00 AM

Room: 243-245**Speaker: David Roncadori**, J & J Chemical Co.

In this session participants will discuss liquids vs. portion control deodorizers. Liquids can be non-formaldehyde, formaldehyde or biological. The discussion will include how liquid deodorizers can be applied; direct charge, dilute, or premix – controlling the use of liquid deodorizer utilizing a blend system; and what strength is best for you. Portion control includes tablets or packets. Discussed will be choosing the right portion control method for your needs; one-size-doesn't-fit-all requirements; how seasons and environment can influence your choice of product; and the pros and cons of liquid and portion control, including storage, transport, spillage, cost, and limitations.

PRO
PORTABLE RESTROOM OPERATOR

FEBRUARY 26, 2014

INSTALLER

COLE Publishing's Onsite Installer Course

8:00 AM - 5:00 PM

Room: 234-236

Speakers:

Dave Gustafson, UW MN

Jim Anderson, Education Coordinator, NAWT

This 8-hour course will train participants on the basics of installing onsite wastewater treatment systems. It will include discussion on installing sewage tanks, trenches, pumps and pump stations, above-ground systems, and media filters.


PORT. SANITATION

Deodorizers and Making the Right Choices

8:00 AM - 9:00 AM

Room: 237-239

Speaker:

Dale Wallace, GM, Green Way Products
division of PolyPortables, LLC

This seminar will cover a number of questions and decisions to be made that will help guide new and or established operators on how to properly service and maintain their investment, "The Portable Toilet." The decisions you make will impact the success of your business. Why do we do what we do? What governs your choices when you decide how and how much to service your customer? This discussion addresses: Why this business? How do you grow your business? How do you make the most of your business? How do I take care of a toilet? What about urine scale and bio films? What should you use as a deodorizer with so many choices out there? And should you detail your toilets, and if so, how?


PORT. SANITATION

Oh Shift! Six Future Trends You Must Gear Up For to Compete and Succeed

9:30 AM - 10:30 AM

Room: 237-239

Speaker:

Beverly Lewis, President, Beverly Lewis Group

Several global trends on the horizon will have a major impact on your sanitation business. This session will discuss six epic shifts that will change the face of portable sanitation. The seminar will raise awareness and create long-range visibility for these trends, and discuss specific strategies to turn these changes to your advantage. Topics include technology, workforce demographics, communication, consolidation and sustainability.


PORT. SANITATION

Portable Restroom Service Units

11:00 AM - 12:00 PM

Room: 237-239

Speaker: Randy Tischendorf, Sales,
Imperial Industries, Inc.

This seminar will cover the proper selection of chassis in correspondence with weight distribution and the Bridge Law. It will supply the attendee with both the maximum capacities allowable on a given chassis, taking into consideration if a trailer is being pulled. The seminar will cover the estimated overall weight of tanks manufactured in aluminum, steel and stainless steel and the proper chassis selection for each basic tank capacity. Also discussed will be the various styles of tanks used in the portable restroom industry, and their uses.


**Business Training
and Marketing**

Improving Profitability through Tracking

8:00 AM - 9:00 AM

Room: 240-242

Speaker: Clint Smith, CallSource

In a sea of competing companies, what makes your company stand out from the rest? Callers are looking for precisely this answer, and how you communicate this will separate you from your competition. Learn how to get the best "bang for your buck" on the thousands you spend to get the phone to ring. While call volume is a key component, you're still ultimately as good as you book. Timing, tone, and confidence all play large roles in earning the caller's trust. In order to get more techs to more doors, you must first improve your current situation. Knowing how to find these improvement areas is crucial since you cannot improve what you don't measure.








**Advertising and Marketing
for Service Companies**

8:00 AM - 9:00 AM

Room: 243-245**Speaker:** **Jeff Bruss**,
President, COLE Publishing

Often overlooked by service companies, a strong marketing and advertising program will keep your business in front of both customers and the competition. Topics covered include phone book advertising, social media, Internet, newspapers and more. Learn how to develop your brand and the most economical and intelligent places to put it.

**How Anywhere, Anytime
Paperless Operations Save
Time and Money**

9:30 AM - 10:30 AM

Room: 240-242**Speaker:** **Joel Smith**, Business Consultant

This presentation will go over a typical business cycle for portables and liquid waste services (brown, yellow, black oil, septic, graywater) from first customer contact through verification of service. It includes how changes can save from 15 to 45 percent; invoices, route sheets, receivables, customer contact, marketing, and order taking; implementations for the field; how to get the greatest benefits; how to handle exception customers; and services to differentiate your company from the competition.

**Achieving Financial Balance
in Your Business**

9:30 AM - 10:30 AM

Room: 243-245**Speaker:**
Russ Decker, CEO, Trade-Serve

This session will teach attendees how to properly price sewer, septic and plumbing services, and how to market using discounts without losing your profits. It will include how to easily plan for retirement, depreciation, taxes and retained earning while having sufficient money for the owners' draws. Achieve financial balance between your production employees, customers and the shareholder(s), and get access to software that will help you. This session will be hands-on practice with take-home handouts that you will be able to use in your business immediately.

**Book More Calls –
Wow More Customers**

11:00 AM - 12:00 PM

Room: 240-242**Speaker:**
Brigham Dickinson, Founder,
Power Selling Pros

In this class, owners will learn to master a set of principles that will help them and their call-handling team book more calls and wow more customers over the phone. What better way is there to keep your dispatch board full than to book the calls that are already coming in to your office? With this class, you'll learn how your call-handling team can become more passionate in their interaction with your customers; they'll not only book more calls, but also become fundamentally great at taking care of customers. For business owners looking to book more calls and wow more customers, your attendance at this class is a must.

**7 Incredibly Effective Ways
to Improve Your Sales**

11:00 AM - 12:00 PM

Room: 243-245**Speaker:** **Ara Mahdessian**, CEO, ServiceTitan

In this session attendees will take a look at the simple yet incredibly effective methods that the most successful contractors use to improve their sales. They will discuss how they motivate technicians, ensure satisfaction, generate more repeat business and other secrets that you can quickly and easily implement when you return to your office.

**Sewer Cleaning 101**

8:00 AM - 9:00 AM

Room: 130-132**Speaker:** **Ken Billingham**, KEG Technologies

This session discusses the understanding of how the crew, equipment and nozzles are integral to the successful completion of the task at hand. Topics discussed include pressure drop, cleaning procedures, and nozzle selection, and how they are related to each other. Learn how to effectively clean sewer and storm lines using minimal fuel, water and time. This class will be of interest to owners, managers and operators alike.



MUNICIPAL

SEALING: Underground Coatings – Restore Deteriorated Infrastructure

9:30 AM - 10:30 AM

Room: 130-132

Speaker: Stewart Nance,
Sales & Marketing Manager, Interfit USA

Infiltration into sewer systems is insidious, pervasive and monumentally expensive. Collection systems develop increasingly worse infiltration over time due to defective and deteriorating components. Cementitious and epoxy liners, and the combination of both, have proven effective in permanently and economically restoring and protecting deteriorated structures, and thus eliminating infiltration.



MUNICIPAL

Rehabilitation: How Small Contractors Can Make Big Money Doing Manhole Rehabilitation

11:00 AM - 12:00 PM

Room: 130-132

Speaker: Bill Shook, President and Founder,
AP/M Permaform

There are more than 20 million manholes in America, and more than half are over 50 years old and in need of serious repair. This session discusses the variety of techniques that are presently available to seal, reinforce and protect old block, brick/mortar and corroded precast manholes to better than new condition without digging. For a small investment, contractors can net big returns. Case studies will be shared.



PUMPER

Right Sizing Your Pump System

8:00 AM - 9:00 AM

Room: 133-135

Speaker: Jason Reading, Sales Manager,
National Vacuum Equipment

Attendees will discuss the process for evaluating an application and determining what would be the correct system for use. It will provide attendees with a takeaway that includes a list of "Rules of Thumb," pitfalls to avoid and confirmation of steps that the end user will find helpful to ensure they have the right system for their job.



PUMPER

Make More Money by Using a Biological Product with your Services

9:30 AM - 10:30 AM

Room: 133-135

Speaker: Mireya Eavey, One Biotechnology

Using a biological product adds beneficial bacteria needed for a healthy tank. The product will continue to flow through the drainfield and breakdown the biomat. Subjected to bleaches, detergents, and other chemicals, naturally occurring bacteria struggle to survive and keep up with the influx of waste in residential and commercial septic systems. Adding a biological product formulated to work in the harsh conditions that requires no pH neutralizing and is performance ready, will decrease the amount of times a system has to be pumped, while giving a customer lasting results.



PUMPER

Septic Drainfield Restoration

11:00 AM - 12:00 PM

Room: 133-135

Speaker: Mark Reynolds, CEO/President,
RCS II and Municipal Sales, Inc.

According to the US EPA 90 percent of all septic failures occur in the drainfield. It's important to understand the system your working with, and to take the time to see if your building department has an as built drawing of the system. What are the reasons systems fail? This session will discuss the steps to solve these issues.



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PUMPER & CLEANER ENVIRONMENTAL EXPO

EDUCATION DAY: FEB. 24, 2014 EXHIBITS OPEN: FEB. 25-27, 2014

INDIANA CONVENTION CENTER - INDIANAPOLIS



Show guests received firsthand look at self-cleaning UV system

By Ed Wodalski

Speaking with pumpers, installers and inspectors about Premier Tech Aqua's self-cleaning DiUV ultraviolet disinfection system, the company's regional supervisor Mike Kaub says this year's Pumper & Cleaner Environmental Expo International could prove quite profitable. In addition to sales leads, one contact he met at the show has the potential to expand distribution into other countries.

"Who knows, that could become a multimillion-dollar deal," he says. "And if I wasn't at the Pumper & Cleaner Expo, I wouldn't have gotten it."

Kaub says a key feature of the new disinfection unit is its self-cleaning function, which automatically cleans off the film to ensure proper treatment.

"Homeowners will not touch anything out in the yard that has to do with septic systems," he says. "Being an installer and service provider, I can speak from experience. We take that out of the homeowner's hands."

The ground-level disinfection system is easy to access and maintain.

"With some of the older units, installers were putting them in an 8-inch sleeve that could be several feet into the ground. How are you going to service that? What happens is they don't. This is at the surface. You remove four bolts [and take off the top]. We have camlock fittings, so no tools are required to disconnect it. Pull it up, take off the side panels and remove the [UV] bulbs. Replace the bulbs, put it back down in, connect the two pieces of pipe and put the lid back on."

"Homeowners will not touch anything out in the yard that has to do with septic systems. Being an installer and service provider, I can speak from experience. We take that out of the homeowner's hands."

Mike Kaub

To attain tertiary treatment level, wastewater meeting NSF Standard 40 Class 1 water quality is pumped to the surface-level unit for disinfection. Water circulates through the quartz sleeve under a controlled and constant flow rate, providing optimum pathogen contact.

"It keeps everything at the surface so you don't have to worry about water infiltrating into the system," Kaub says of the disinfection system that rests inside a 43 1/4-inch tall, 26 1/4-inch in diameter prefabricated enclosure. A handle enables the UV unit to be lifted up and out for servicing.

The system can handle flow rates of 6.6 gpm or 9,000 gpd. "Most residential homes are 400 to 500 gpd, so it's a commercial unit as well," Kaub says.

Designed for new installs, retrofits or the replacement of failing systems where stream, ditch or surface discharges are permitted, the UV unit treats



Mike Kaub, regional supervisor for Premier Tech Aqua, describes the key features of the self-cleaning DiUV ultraviolet disinfection system to guests at the Pumper & Cleaner Environmental Expo.

fecal coliform effluent to less than 200 cfu per 100 mL, BOD and TSS influent to less than 30 mg/L and hardness of influent water to less than 500 mg/L.

"It's a clean-stream DiUV," Kaub says. "We can retrofit it into where people are using chlorinators. There again we're relying on the homeowner to buy the material. They go to the store and buy pool chlorine, which is not the right stuff because it gets gummed up." Installed inside a small lift chamber, the UV unit can ensure we're putting clean water into our streams like we're supposed to, he says.

Looking forward to the 2014 Pumper & Cleaner Expo, Kaub promises to have a new treatment system on display. Currently in the testing phase, results are expected in time for the show. 800/632-6356; www.premiertechaqua.com. □

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ALBERTA, CAN.

Provincial variance for at-grade systems

In its September newsletter, the Alberta Onsite Wastewater Management Association reported on a new province-wide variance allowing selection of the LFH at-grade system as the final treatment in private onsite systems. The STANDATA, which outlines requirements for design and installation of the system is available for download through the Alberta Municipal Affairs website.

BRITISH COLUMBIA, CAN.

Technical discussion forum available

The Western Canada Onsite Wastewater Management Association launched a forum for members to share information on technical issues. The forum has an open discussion format, but posts are monitored. Participants are asked not to solicit business on the forum. For information on how to sign up for the forum and participate, go to www.wcowma.com.

CALENDAR OF EVENTS

Jan. 8-9

Iowa Onsite Waste Water Association Annual Conference, Iowa Events Center, Des Moines. Call 515/225-1051 or visit www.iowwa.com.

Jan. 15-16

Ohio Onsite Wastewater Association Annual Conference and Trade Show, Deer Creek Lodge and Conference Center, Mount Sterling. Call 866/843-4429 or email oowa@ohionsite.org.

Jan. 21-22

Missouri Smallflows Organization Conference and Trade Show, Boone County Fairgrounds, Columbia. Call 417/739-4100 or email contact@mosmallflows.org.

Jan. 30-Feb. 1

The Wisconsin Onsite Water Recycling Association and Wisconsin Liquid Waste Carriers Association Joint Annual Conference, Holiday Inn & Convention Center, Stevens Point. Call 800/377-6672 or visit www.wowra.com.

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TRAINING AND EDUCATION

Connecticut

The Connecticut Onsite Wastewater Recycling Association will conduct its Installer School on six consecutive Thursdays, Jan. 16, 23, 30 and Feb. 6, 13 and 20. The Pumper/Cleaner School will be held Thursday, Feb. 20. The snow date for either program is Feb. 27. The schools will be held at Wesleyan University, Middletown. For more information call 860/267-1057 or email info@cowra-online.org.

Delaware

The Delaware Technical Community College-Owens Campus has these courses:

- Online: Pumps, Motors and Controls – enrollment until Dec. 13.
 - Dec. 12 – Soils
 - Dec. 18 – Tracking Water Movement Through Doppler and Transit Time Flowmeters
- Call Hilary Valentine at 302/259-6384.

Minnesota

The University of Minnesota Onsite Sewage Treatment Program has these classes:

- Dec. 12-13 – Installing Onsite Systems, Mankato
 - Dec. 16-17 – General Continuing Education, Brainerd
 - Dec. 18-19 – Installer Continuing Education, Mankato
 - Dec. 19 – Pipelayer Certification, Mankato
- Call Nick Haig at 800/322-8642 (612/625-9797) or visit <http://septic.umn.edu>.

Missouri

The Missouri Smallflows Organization has these CEU courses:

- Dec. 11 – Drip Irrigation, Camdenton
 - Dec. 12 – Pumps, Panels, and Electrical, Camdenton
- Call Tammy Trantham at 417/739-4100 or visit www.mosmallflows.org.

Nebraska

The University of Nebraska-Lincoln Extension has these state-approved courses:

- Dec. 10-11 – Mound Systems, Norfolk
 - Dec. 12-13 – Mound Systems, Ithaca
- Call 402/472-9390.

New England

The New England Onsite Wastewater Training Center at the University of Rhode Island in Kingston has this course:

- Dec. 12 – Designing Nitrogen Removal Technologies
- Call 401/874-5950 or visit www.uri.edu/ce/wq. For soil courses, call Mark Stolt at 401/874-2915 or email mstolt@uri.edu.

North Carolina

The North Carolina Pumper Group and Portable Toilet Group have an educational seminar on septage management and land application on Dec. 14 in Raleigh. Call Joe McClees at 252/249-1097 or visit www.ncpumpergroup.org or www.ncportabletoiletgroup.org. □

Pumping and Onsite System Maintenance

By Craig Mandli

By adding tools, such as vacuum trucks and trailers, pumps and hose, septic system installers can add pumping and system maintenance to their service menu. Here are several products designed to help installers expand their offerings, and their revenue.

VACUUM TRUCKS/CHASSIS AND TANKS

Septic/grease vacuum tank

The 4,000-gallon aluminum Matador septic/grease vacuum tank from Amthor International comes standard with a 5/16-inch-thick side shell and floor, full head baffles and no external rings. It is available as a dumping tank with or without full-opening rear doors, as well as with off-road construction options for various applications. Various pump models are available. 800/328-6633; www.amthorinternational.com.



4,000-gallon vacuum truck

Vacuum trucks from Best Enterprises are built on a 2014 Kenworth chassis and using a 4,000-gallon stainless steel tank. Features include a 6-inch dump valve with heated collar; two stainless steel toolboxes; a 20-inch stainless steel manway; a 36-inch rear stainless steel manway; strobe lights; a heated coil in the water compartment; a Moro PM110 600 cfm liquid-cooled vacuum pump; a DC10 MTH water pump with low-pressure hose reel; back-up camera with 5-inch LCD display; stainless steel ladder; vane flush kit; LED DOT lights; PTO with angle-drive system; outside switch box for lights, vacuum pump and water pump; LED stop/turn taillights and sealed-bulb backup lights; heavy-duty bumper with receiver-style trailer hitch with a seven-way plug; three 5-inch sight glasses; two 3-inch suction inlets; and a 2-inch bucket dump. 800/288-2378; www.bestenterprises.net.



Positive-displacement vacuum truck

The HV55 HydroVax from GapVax is constructed from ASTM A572-Grade 50 steel, and has a 12.5-cubic-yard debris body and water tank options ranging from 400 to 1,400 gallons. Features include a positive displacement vacuum pump rated at 5,250 cfm with 28 inches Hg, prolonging the life of the filter bags and eliminating the threat of material entering the vacuum pump. The tailgate is fully opening with a field-adjustable hinge and dual cylinders and also has four fail-safe, individually adjustable locks that assure a complete seal. Options include a cold-weather recirculation package, sludge pump, auger unloading system,



body pressurization system, remote pendants and wireless remotes, a high rail package and stainless steel body. 888/442-7829; www.gapvax.com.

Aluminum vacuum trailer

MRK6000 Series aluminum vacuum trailers from Imperial Industries come standard with a 6,000-gallon aluminum tank (6,300-gallon units are available). They feature full-length aluminum hose trays, external ribs, three topside 20-inch aluminum manways, a 12-inch primary with a 4-inch air line, a 4-inch intake and 6-inch discharge, LED running lights, a Henderson INTRAAX AAT 25K suspension, leveling height control, an air-ride suspension, Haldex slack adjusters and optional full-length catwalk with hand rails. 800/558-2945; www.imperialind.com.



Combination unit

The 3300 combo unit from Ledwell features a choice of vacuum systems, along with a large number of options. It features an ASME/DOT 412 rating, full-opening hydraulically operated rear door, a 20-inch top manway with ladder and platform, a three-stage hydraulically operated front tank hoist, a 6-inch air-operated rear discharge, a 4-inch rear-mounted intake valve, bolt-in interior baffles, a hydraulically operated liquid or air-cooled vacuum pump, rear-mounted liquid level indicator, rear-mounted adjustable hose hooks and pressure off-load capability. Additional features include a hydraulically operated transfer pump, variable vacuum pump capability, multicompartiment capability, high-pressure wash-down option, top mounted hydraulic boom and a tri-axle body design. 888/533-9355; www.ledwell.com.



Versatile truck chassis

The 338 Model truck chassis from Hino Motor Sales U.S.A. is suited for vacuum service applications at a gross vehicle weight of 33,000 pounds. It is equipped with a Hino 8L J08 engine rated at 260 hp and 660 ft-lbs of torque, and backed by a five-year, 250,000-mile warranty with three years of free roadside assistance. It has an 80,000 psi standard frame, with a 120,000 psi frame optional. It comes



standard with an Allison 2500 RDS transmission with shift energy management, while an Allison 3000 RDS is optional. Other options include power heated driver and passenger side mirrors and INSIGHT, Hino's telematics program. 248/699-9300; www.hino.com.

Pressure/vacuum trailer

Mid-State Tank/Arthur Custom Tank manufacture aluminum pressure/vacuum trailers in various capacities. A popular model is the 7,600-gallon tri-axle unit with airlift on the rear axle, available with or without a pump. Units can be manufactured to satisfy a variety of vacuum requirements. 800/722-8384; www.midstatetank.com.



PTO-driven vacuum system truck

The MD3200 steel service module vacuum truck from Satellite Industries features a PTO-driven vacuum system for pumping waste, with a four-way valve for pressure off-loading and unplugging lines. Its right-angle gearbox, Woods-style coupler and driveline keys help prevent drivetrain damage in case of overflow or pump failure. Preset fast idle control protects the pump from unintentional over-speeding. Vacuum and pressure relief valves are installed to prevent tank or pump damage. The automatic pump-oiling system needs no adjusting, and a clear poly remote oil reservoir allows for easy viewing of the oil level to help prevent pump damage caused by oil starvation. A Masport HXL400WV water-cooled pump with pressure dump and PTO with torque overload protection comes standard. 800/328-3332; www.satelliteindustries.com.



Industrial vacuum truck

Industrial vacuum trucks from V & H Inc. feature Sterling chassis and 2,500-gallon Imperial Industries steel tanks with a Masport 350 cfm HXL15 pump and 3- and 6-inch brass lever valves. The discharge is mounted on a four-bolt flange, which makes it easier to change to piston valve with air cylinder. The tank has aluminum hose trays, which help with corrosion issues, rear work lights for working in low daylight hours and an aluminum toolbox. It has a Cat engine and Fuller six-speed transmission with tilt steering wheel which makes it easier for different size drivers, cruise control, A/C and heated mirrors. 800/826-2308; www.vhtrucks.com.



VACUUM PUMPS

Commercial-duty vacuum system

The Eliminator Package Model ELIM A-SM from Fruitland Manufacturing offers liquid waste haulers a commercial-duty vacuum system designed to reduce cost and downtime. It includes a heavy-duty mounting bracket, gearbox, coupler, 99.9 percent efficient oil-catch muffler, pressure and vacuum relief valves and secondary shut-off designed to be serviced in the field. It also features Fruitland's RCF500 LUF commercial-duty vacuum pump that offers low oil consumption, including an automated oiling system with only steel lines, vane gauging ports, antishock design, three primary cooling phases, integral air-intake filter, designed to work both on vacuum and pressure. 800/663-9003; www.fruitlandmanufacturing.com.



Dual fan-cooled vacuum pump

The Jurop RVC360 vacuum pump from CEI – Chandler Equipment Inc. is available in multiple drive configurations, which include either gearbox, hydraulic or belt drive. It operates at 72 dBA while producing 18 inches Hg. It has a recommended input speed of 1,100 to 1,300 rpm, with an output of 360 cfm at free air and 332 cfm at 18 inches Hg. 800/342-0887; www.chandlerequipment.com.



Heavy-duty fan-cooled pump

The VK650 from Masport is a fan-cooled pump capable of 377 cfm, 20 psi continuous duty, and 23 inches Hg continuous-duty vacuum. The pump also includes an integrated stainless steel air filter to protect the pump, as well as an integrated 1-gallon oil tank. The four-way integral valve has bolt-on 3-inch NPT flanges to help ease of installation, as well as a posi-lock handle for secure positioning. Heavy-duty bearings, automatic oil pump, cushioned spring washer end thrust protection and carbon fiber vanes ensure superior pump life. 800/228-4510; www.masportpump.com.



Fan-cooled vacuum pump

The PM80T from Moro USA is a continuous-duty dual fan-cooled vacuum pump capable of 29 psi positive and a continuous vacuum of 24 inches Hg, with a flow rate of 350 cfm capable of pumping nonvolatile liquids and sludge from long distances. It features industrial-duty bearings, Viton seals and a 1,100 rpm rotating speed. It doesn't require a liquid cooling system, as dual cooling fans keep it operating efficiently. It includes an integrated check valve, change-over valve and oiling system allowing for ease-of-use and installation, and has 3-inch hose connections. It is available in preassembled pump packages complete with stand, secondary, oil catch and drive, gearbox, hydraulic, pulley or engine driven. 800/383-6304; www.morousa.com.



HOSE

Industrial vacuum hose

MG-Series vacuum hose from Flexaust is flexible, lightweight and chemical resistant, making it suitable for a variety of commercial and industrial applications. Available in PVC and polyurethane versions, or blended thermoplastic elastomers, this all-purpose hose is reinforced with a vinyl-coated spring-steel wire helix and is available with plain ends or cuffs. Featuring a smooth interior, it comes in 3/4- to 4-inch I.D. sizes and the PVC version (MG-V) standard color is gray with custom colors optional. It operates from 29 inches Hg to 15 psi, at -10 to 160 degrees F. 800/343-0428; www.flexaust.com.



Material handling hose

Tigerflex Amphibian AMPH Series heavy-duty polyurethane-lined wet or dry material handling hose from Kuriyama of America resists internal wear, especially in the hose bends. It is extremely flexible, with a convoluted cover and "Cold-Flex" materials that resist



(continued)

(continued from page 57)

kinking and promote flexibility in subzero temperatures. It is oil and UV resistant, and can be used for fly ash collection, hydroexcavation, industrial vacuum equipment, rock, gravel, sand and crushed concrete vacuuming, sewer truck boom hose and slurry handling. 847/755-0360; www.kuriyama.com.

ACCESSORIES

Stubby valves

The VSFMT220SS from Banjo Corp. is a 2-inch full port stainless steel stubby valve and features 100 percent PTFE ball seats. Its compact design has all TFE seals with no elastomers and a 1,000 psi maximum pressure. A 2-inch FP male adapter will fit with the 2-inch NPT stainless steel stubby valve. 765/362-7367; www.banjocorp.com.



Six-bolt ball valve

Six-bolt ball valves from Green Leaf Inc. are precision molded in polypropylene and reinforced with fiberglass for additional strength. The self-aligning ball moves freely against Teflon seats for smooth operation. The valve opens and closes with little pressure on the handle. The ball is diamond turned after molding to make it spherically perfect, which provides precise contact between ball and seats. Valves feature stainless steel bolts, Viton O-rings and Teflon self-lubricating stem bushings and seats that cannot stick or bind. Sizes range from 2 to 3 inches, with a maximum operating pressure of 65 psi at 150 degrees F. They are available in full or standard port design. 800/654-9808; www.grnleafinc.com. □



industrynews

Kobelco names warranty administrator

Kobelco Construction Machinery USA named Kris Bojarzin warranty administrator. He will be responsible for processing warranty claims, as well as recording and tracking repair data.



Kris Bojarzin

Septic Maxx moves to new facilities

Septic Maxx moved to a new 5,400-square-foot office facility in Delray Beach, Fla. The 1-year-old company, which began manufacturing all-natural bacteria and enzyme products for consumer septic systems, has expanded into commercial and industrial sales in Europe and Canada.

TBEI names vice president of sales and marketing

Truck Bodies & Equipment International named Henry Bell to the newly created position of vice president, sales and marketing, for all TBEI brands.

Manitou celebrates 40 years of Gehl brand

Manitou Americas is celebrating 40 years of the Gehl brand, first manufactured in July 1973 in Madison, S.D. Today, the skid-steer line includes three vertical lift models and seven radial lift models.

Groups work to reduce non-flushable products

INDA, the Association of the Nonwoven Fabrics Industry, the National Association of Clean Water Agencies (NACWA), the Water Environment Federation (WEF) and the American Public Works Association (APWA) are working to reduce non-flushable disposable products in the wastewater system. The associations believe that rigorous product assessment before making a flushable claim, along with improved product labeling, could significantly reduce the amount of non-flushable items in the sewer system. To assist companies with product flushability assessments and to provide guidance on proper labeling, INDA and its European counterpart, EDANA, released a code of practice for manufacturers and marketers of wipes and other disposable nonwoven products that includes a process to determine proper labeling of a product.

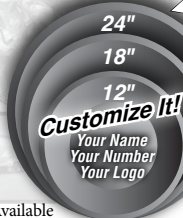
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SJE-Rhombus hosts training session

SJE-Rhombus held a training session in September for 23 distributors, installers and manufacturer representatives. Held at its headquarters in Detroit Lakes, Minn., the session focused on onsite control products, basic electrical theory with multimeters, component overview, control panel overview, panel configuration, control panel assembly, operation and troubleshooting, floatless technology, best installation practices and tour of the facility. □

Quanics pressure distribution valves

Pressure distribution valves and valve assembly packages from Quanics are available in two to six outlets, enabling a single valve to alternately dose up to six difference zones. Applications include mound, LPP systems, sand filters, drip irrigation fields and advanced treatment module dosing. Valves are available as a complete assembly installed inside a basin package with lid. Preassembled packages (fully insulated or insulated lid) include ball valve for adjusting flow, quick disconnects and clear sections of PVC piping for monitoring flow. 877/782-6427; www.quanics.net. □



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HAND TOOLS

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PUMPS

Hydromatic, Zoeller, Liberty, ABS, Myers, grinder and effluent pumps. Lift station packages and high water alarms are also available. Septic Services, Inc. www.septicserv.com, 1-800-536-5564 (IM)

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