



NO-DIG IN THE BIG D

Annual NASTT Show Brings Trenchless Pros to Texas

By Mike Kezdi

It's that time of year again — trade show season — and the largest event in North America for trenchless professionals is NASTT's No-Dig Show.

Trading Denver's Blue Bear for Dallas' Traveling Man — shown above reclining against debris salvaged from a rail tunnel in the Big D's Deep Ellum neighborhood — NASTT's 2016 No-Dig show takes place March 20-24 at the Gaylord Texan Resort and Convention Center. The show last stopped in this Lonestar State hub and the Gaylord Texan, which overlooks Lake Grapevine, in 2008.

Show activities, from gala dinners and technical sessions to short courses and chapter meetings take place at The Gaylord, which is located six miles from Dallas/Fort Worth International Airport.

With several dining and shopping options on property, attendees don't have to leave the Gaylord, but if you choose to venture out, the resort is within minutes of the 1.6 million-sq-ft Grapevine Mills Mall and several golf courses including Cowboys Golf Club, the only NFL-theme golf course in the country. For more off-site extracurricular adventures, visit grapevinetexasusa.com.

More than 170 exhibitors will fill the exhibit hall, displaying the latest in trenchless equipment and technology and to answer attendees' questions. New this year is the addition of six, 50-minute long trenchless roundtable discussions, which cover a variety of topics moderated by program chair Jeff Maier or program vice chair Jennifer Glynn.

The No-Dig technical paper program brings approximately 160 peer-reviewed technical papers to be presented, focusing on a diverse range of trenchless topics, including horizontal directional drilling (HDD), cured-in-place pipe (CIPP), microtunneling, inspection, case histories, asset management, pipe jacking and ramming, water and sewer rehabilitation, project planning, inspection and trenchless research.

The No-Dig papers are presented in a six-track schedule and are grouped mostly by subject matter so attendees can choose to attend five paper presentations at any given time.

As the show nears, here are few items to mark on your calendars..

Pre- and post-conference seminars are available to attendees at an additional cost.

- Sunday, March 20, NASTT's Trenchless Technology Short Course-

New Construction and Rehabilitation will be held.

- Slated for March 23-24, are several informative courses presented by NASTT.

The conference gets under way with its annual kick-off breakfast from 7:30 to 9:15 a.m. Monday, March 21.

- During this event, the formal presentation of the 2016 *Trenchless Technology* Person of the Year will be made. This year's recipient is Lynn Osborn, P.E. — an industry professional who has helped to shape and expand the trenchless industry over the last 30 years.
- Following that presentation, the winners, runners up and honorable mentions for the 2015 *Trenchless Technology* Projects of the Year for Rehabilitation and New Installation will be formally recognized.
- Rounding out the breakfast awards are NASTT's 2015 Outstanding Papers in Rehabilitation and New Installation Awards.

Let your brain and body unwind at the most anticipated networking event of the conference, NASTT's 15th annual Educational Fund Auction & Reception from 5:30 to 7:30 p.m. March 21. The fund-raising soirée — benefitting NASTT's educational initiatives — is a themed event. For 2016, channel your inner Elvis, grab a can of Aqua Net and tease away or dust off your Dr. Martens for "Rockin' Auction." NASTT wants attendees to dress as their favorite rock star past or present. As always, the event will feature the tropical vacation and 50/50 raffles.

Tuesday, March 22, NASTT will host its annual gala awards dinner. NASTT will present several awards and will induct its fifth NASTT Hall of Fame Class: Ken Foster, Martin Cherrington and Richard Thomasson.

Gas Industry Day is Wednesday, March 23, and features a full day of education and networking specifically for the gas industry.

2016 No-Dig closes with a luncheon and keynote address on March 23. This also serves as a look ahead to Washington D.C. in 2017.

For more information about NASTT's 2016 No-Dig Show, visit nodigshow.com.

Mike Kezdi is associate editor of *Trenchless Technology*.



MAX PERFORMANCE.

Max out your capabilities with our complete CIPP solution:

- High performance resins that are economical and ecologically-friendly
- Compact equipment for laterals, verticals and hard-to-reach pipes
- Supplies, liners and resins made by the world's leading manufacturers
- Quality felt liners that curve, stretch and accommodate up to 90° bends
- Custom solutions with 4-6" transitions for any liner length or complexity

MAXLINER

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3M

3M's trenchless solution for potable water pipe in situ rehabilitation, 3M Scotchkote Pipe Renewal Liner 2400, can: Protect water quality by inhibiting tuberculation and corrosion that contribute to red and brown water; increase water flow by restoring and maintaining internal pipe diameter; and reduce water loss by helping to repair cracks, pin holes and corrosion pitting. Scotchkote Liner 2400 is a polyurea solution that cures completely in as little as 60 minutes. Depending on local regulation, service can be restored in as little as one day. Scotchkote Liner 2400 can be used on pipes between 4 in. and 36 in. made of a variety of materials. 3M's culture of creative collaboration inspires powerful technologies that make life better. 3M Scotchkote products have helped protect critical infrastructure around the world for over 50 years. *Booth #709*

ADS/INSERTA TEE

The Inserta Tee unit from Advanced Drainage Systems Inc.



(ADS) provides a fast method of water-tight lateral service connection for wastewater and storm water pipe systems. Inserta Tees readily fit ADS pipe and can be used to connect CMP and PVC pipe plus corrugated, solid wall and profile wall pipe regardless of the manufacturer. Additionally, the easy-to-install Inserta Wye is used for tapping a lateral connection into most types and sizes of mainline pipe or structures. It can be connected to the pipe without the need to dig underneath with no securing straps required. The Inserta Wye meets ASTM 3212 using air pressure and is watertight to meet requirements for storm and sanitary sewer lines. Available in both 4- and 6-in. inlets, the Inserta Wye can be used to connect corrugated, solid wall, profile wall and concrete pipe regardless of manufacturer. *Booth #306*

AKKERMAN

Akkerman introduces its peripheral drive, face access family of microtunnel boring machines (MTBMs) precisely complete ex-



tended and curved tunnels with exceptional drive and cutting torque in virtually any ground condition. This new generation of peripheral MTBMs enables contractors to offer their expertise to tackle the complex long distance and curved alignments that infrastructure demands. The peripheral drive family, comprised of the SL86P, SL102P and SL114P MTBMs, feature an on-board electric over hydraulic power pack for cutterhead drive with low, medium, and high torque modes for accurate control in changeable geology. High-pressure jetting nozzles, an articulated steering joint, three-point steering control and hydraulically articulated dirt wings capabilities present enhanced operation control. The Akkerman peripheral drive MTBMs feature face access to the cutterhead. The service and replacement of worn tooling while underground is accomplished through a cutterhead access panel and back-loaded tooling and mounts and can be utilized during pressurized intervention, thus lessening the need for intermediate shafts. *Booth #613*

AMERICAN AUGERS

American Augers is proud to announce

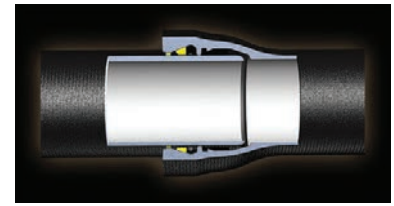


the new mud system M-200D. This mud recycler's most predominate feature is the use of a Derrick 503 single shaker. Using a single shaker reduces the system size while providing plenty of screen area for outstanding performance. The shaker angle can be adjusted while running to maximize cleaning efficiency. Derrick shakers are recognized as the highest quality and highest performing shakers across multiple industries. This 200-gpm system is perfect for the 100,000-lb and below class of drill rigs. American Augers builds the largest category of horizontal directional drills in the industry and a full range of auger boring machines. *Booth #910*

AMERICAN CAST IRON PIPE CO.

AMERICAN Cast Iron Pipe Co.'s Flex-Ring restrained joint ductile iron pipe uses the sealing features of its Fastite joint and a boltless restrained connection, providing flexible restraint against endwise separation from thrust. Easy and very quick to as-

semble, the joint is designed for a working pressure up to 250 psi. Flex-Ring also lends



itself perfectly to installations using HDD and pipebursting. *Booth #324*

AMERON PROTECTIVE LININGS

The T-Hab System, from NOV Ameron Protective Linings Division, is a trenchless, large diameter sewer tunnel and pipeline rehabilitation process that utilizes the tried and true T-Lock PVC liner technology. An added benefit to the T-Hab System is that it can be used to rehabilitate either cylindrical or non-cylindrical



tunnel and pipe configurations. Once the damaged sewer tunnel or pipeline has been cleaned and prepped, special formwork is brought into the tunnel. T-Lock sheets, which have been pre-manufactured to the required circumferential dimension, are then placed over this form. A quick-curing, structural grout is then pumped into the annular space between the form and the damaged surface. Then, with the form expanding out, the T-Lock sheet is uniformly pressed into the grout, where it quickly locks into place. As the form moves to the next section to be repaired, the overlapping seams of the newly lined tunnel are then heat-welded to produce a continuous gas-tight lining throughout the entire rehabilitated structure. *Booth #1000*

AOC RESINS

AOC's state-of-the-art manufacturing facilities and quality control measures produce consistent resins that help



OUT OF SIGHT, OUT OF MIND

INFILTRATION IS OUT OF CONTROL

Every city battles groundwater migration in the sewer system. Infiltration attacks the integrity of underground infrastructure resulting in excess flow, reduced capacity, higher maintenance, shorter lifecycle, and greater expense to rate-payer. Unresolved, the cost to rehabilitate or replace increases exponentially.

Injection grouts are the low-cost, high-reward solution engineered specifically to mitigate infiltration at all four points of entry: mainlines, laterals, lateral connections and manholes. Acrylamide grout creates a positive seal outside the structure by forming a protective gel/soil matrix, and according to the U.S. DOE, has a 362 year half-life in soil.

Common sense leads to common practice. If you specify, manage, or rehab sewer systems, **Grout First** is the renewed battle-cry. Complimentary to all other trenchless technologies, grouting stops leaks and stabilizes soil. To restore integrity, chemical grouting remains the only proven method to stop infiltration.

Engage with Avanti. As the leading producer of acrylic, polyurethane, and ultrafine cement grouts, Avanti serves more engineers, contractors, and public works authorities than any other resource in North America. You will understand why when you visit www.AvantiGrout.com or call **800-877-2570**.



AVANTI

Stop leaks. Stabilize soil.
Control groundwater.
Permanently.

customers improve quality and boost performance. AOC's newest investment brings cured-in-place pipe (CIPP) filling and chilling capabilities to the Tennessee manufacturing plant. This gives AOC the ability to service filled CIPP resins at all five U.S. and Canadian plants AOC's filled resins allow customers to design thinner liners, increase flow capacity and reduce costs for the end user. This new expansion in Tennessee increases capacity and decreases transportation time, which ensures AOC continues to meet customer needs in the growing CIPP market. With a complete product line, customized formulations, and the best service and support in the industry, AOC remains the leader in CIPP resins. *Booth #307*

APPLIED FELTS/MAXLINER

A pioneer in CIPP technology nearly 40 years ago, Applied Felts is the world's largest independent manufacturer of 100 percent vertically integrated, quality liners. Every phase of manufacturing — including a 28-stage testing system — is done in one location, ensuring confidence that Applied Felts' quality liners will stand the test of time. Applied Felts now offers its latest innovations in CIPP liner technology: Aqua-Cure RP

— a breakthrough liner that combines fiberglass reinforcement with Applied Felts' existing, best-in-class felt liner design and construction; AquaCure PS — specially designed for pressure sewer pipes and other non-potable water applications; and AquaCure PW— the newest innovation for potable water applications. MaxLiner leads the field with materials including quality felt liners that curve, stretch and accommodate up to 90-degree bends; high-performance resins that are economical and ecologically-friendly; and the best equipment and service around. *Booth #215*



AQUAPIPE/SANEXEN ENVIRONMENTAL SERVICES INC.

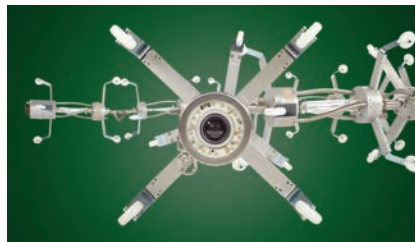
Aqua-Pipe is a Class IV, stand-alone structural CIPP technology used for the rehabilitation of water mains, ranging from 6- to 24-in. in diameter. The process



is a trenchless technology, thus saving direct construction and indirect social costs. Developed by Sanexen, Aqua-Pipe is certified to NSF/ANSI Standard 61. AWWA Service Provider Member *Booth #607*

ARIES INDUSTRIES

The Anaconda UV Curing System, from Aries Industries Inc., provides consistent lining installation with CCTV video inspection before and during the cure. The simple technology ensures uniform curing with one-third less time than steam-cured processes. This rehabilitation method uses a "light train" that emits ultraviolet light as it is pulled through the resin-impregnated liner. The light cures



and hardens the liner forming a new joint-free pipe. A camera inspects the pipeline before and during the cure, allowing any sags and wrinkles in the liner to be corrected. With no need to invert the liner, UV curing requires less equipment and smaller crews. No hot water usage eliminates the steam truck for less fuel consumption. Lingering odor and potential downstream contamination are eliminated. Aries offers a portable unit for lining pipe diameters of 6 to 12 in. and a vehicle-mounted system that provides a professional platform for lining pipe to 60 in. *Booth #331*

AVANTI

Avanti's AV-100 Acrylamide grout is an ultra-low viscosity, chemically reactive gel that has a similar viscosity to water,



and is the thinnest product on the market. AV-100 can permeate anywhere water can travel and has adjustable cure times from 5 seconds to ±10 hours. AV-100 creates an effective, long-lasting water barrier while providing remarkable soil stabilization and has a proven track

record of dependability and reliability in the field. Alone, the cured AV-100 gel is flexible (left), but has impressive strength when injected into sand or soil substrate (right). Primary uses of AV-100 are rehabilitating and sustaining municipal sanitary sewer systems, eliminating infiltration in manholes, laterals, and joints, and stabilizing external substrate around underground structures. When injected properly into soil, AV-100 has a half-life of 362 years by EPA standards. *Booth #526*

BARBCO

Barbco Inc. is displaying a new product line it calls PitBoss at this year's No-Dig Show. The PitBoss product line includes an assortment of products designed for trench safety, compliance and crew comfort and convenience. With



trench ventilation becoming a rising concern CommandAir Fresh Air Blowers take the leading roll. Trench Box Handrails, Bridges and more rounds out the PitBoss product line. Obtain more information on the PitBoss products by contacting US Shoring and Equipment of Euless, Texas, the exclusive distributor for the PitBoss line. *Booth #430*

BID OCEAN

America's first free national business network has been launched



by Bid Ocean's social enterprise, North America Procurement Council (NAPC). The network consists of 53 national and state web portals with bids from most every government agency and many private organizations. There are more than 700,000 bid opportunities each year, with an annual contract value of more than \$2 trillion. The network also features a free and easy-to-use e-procurement system, business news and free classifieds. Best of all, the portals are owned by the people. These new state and national portals are part of a "Do-it-Ourselfs Economic & Democracy Stimulus Program" that provides greater transparency of govern-

PIPE BURSTING PROS DEPEND ON HAMMERHEAD®

“ We worked very closely with HammerHead Trenchless Equipment in the development of their new 100XT static pipe bursting system, and we couldn't be happier with the final result. It's fast, reliable, and backed by customer support that has always been quick to respond when we have a question. Municipalities are catching on to the advantages of pipe bursting, and our 100XT positions us to take advantage of pipe bursting's growing popularity.”

MARK DIMICHELE,
Owner, D & D Water & Sewer, Canton MI



**EQUIPMENT.
EXPERTISE.
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HammerHead Equipment products and expertise take the guesswork out of pipe bursting. And legendary factory support puts even the toughest pipe bursting jobs within your reach.



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ment spending and will stimulate the economy. The portals are already used by 1.5 million businesses. *Booth #1022*

BIT BROKERS INTERNATIONAL

Bit Brokers International is a family run business with more than 100 years of combined experience in the drilling industry. Bit Brokers manufactures its own line of PDC bits that are designed specifically for HDD drilling. PDC pilot bits drill three to five times faster than roller cone pilot bits and often last much longer because there are no bearings to wear out. Bit Brokers also has a PDC reamer called the VersaReam. The VersaReam is a replaceable/expandable blade PDC reamer that comes standard to be either pushed or pulled. The VersaReam reduces the cost of using PDC reamers because you can simply replace or repair the blades instead of buying a whole new body. Bit Brokers also supplies pilot roller cone bits, roller cone reamers, hammers, hammer bits and other HDD tooling. *Booth #901*



BUZZI UNICEM USA

Buzzi Unicem USA, a worldwide cement company and leader in rapid setting repair products for sending and receiving openings, small-hole technology, and stan-



dard sized utility openings. Its rapid setting repair products are designed to allow for same day restoration, reducing crew exposure to traffic dangers, expediting the opening of areas to public travel, and allowing additional jobs to be completed due to reduced labor hours per job. Its products range from rapid setting, self-mixing, self-compacting, backfill, core reinstatement grout, leak detection opening repair grout, and a permanent capping material for both asphalt and concrete roadways. All products come in cold weather versions, allowing for work to extend into cold weather seasons. *Booth #116*

CIPP CORP.

CIPP Corp. is the world's leader in municipal pipeline infrastructure renewal. Its new CIPP H2O liner makes water line renewal fast and affordable with limited disruption of service. It fea-



tures a unique technology that allows you to fabricate on the spot for perfect custom results on every job, large or small. This liner is NSF/ANSI 61/ BNQ Certified and meets or exceeds ASTM F1216 standards. It is highly versatile, designed to meet any application, and it is more corrosion resistant than PVC. With the CIPP H2O liner, there's no more extensive digging, no more labor-intensive line removal and replacement. Whenever and wherever drinking water lines need attention, our CIPP H2O liner offers a simple, affordable and reliable solution. *Booth #531*

CONTECH ENGINEERED SOLUTIONS

Contech has been providing fully-structural rehabilitation and relining solutions using steel and aluminum tunnel liner plate and structural plate, steel reinforced polyethylene pipe, PVC liner pipe and many others for more than 70 years — recently adding in situ manufactured spiral wound PVC and steel reinforced HDPE materials. Knowing pipe assessment, structural design and hydraulic analysis is what we do. The result is the right solution for your project needs — done right, on time and under budget. Contech Engineered Solutions is a leading provider of site solution products and services for the civil engineering industry. Contech's product portfolio includes bridges, drainage, retaining walls, storm and sanitary sewer, stormwater treatment, and erosion control products. *Booth #903*



CTSPEC

For more than 15 years, CTSpec has provided applications for the inspection and management of sewer systems, with contractors and municipalities realizing a high return on their investment in CTSpec. CTSpec Sewer was created by field people with extensive experience in the management of sewer networks, and designed to meet the needs of any organization responsible for the operation and management of sewer networks. Our passion and expertise for underground infrastructures are reflected in our commitment to develop



the best solutions and services in the industry. CTSpec is your information technology partner and that's why customers select us. We have at heart our customers; their success is our greatest reward. *Booth #330*

CUES

Made to withstand the most severe conditions and ergonomically designed for comfort and efficiency, CUES truck-mounted systems can include TV inspection equipment for sewer/storm/potable water lines, mainline joint or lateral sealing, and lateral reinstatement cutters for the relining industry. CUES custom TV and cutter inspection trucks are available with Schwalm self-propelled cutters for 6- to 12-in. lines or 8- to 24-in. lines or CUES Kangaroo Cutters, which include full capabilities for reinstating lateral services, removal of protruding taps, brush finishing existing cuts, and pre and post TV inspection. *Booth #129*



DERRICK EQUIPMENT CO.

Backed by more than 60 years of cost-effective solutions plus award-winning service, the Derrick Hyperpool shaker is the latest in a long line of products designed expressly to exceed the demanding needs of today's drilling operations. With its compact footprint, industry-leading processing capacity, solids bypass prevention, and low maintenance cost, the Hyperpool is well suited for all drilling applications where drilling performance and rig modularity are required. The Hyperpool is designed to bring maximum value to the customer. Derrick, a family-owned and operated company founded in 1951, has a 25-year history of offering solids control equipment to the worldwide HDD, microtunneling, slurry wall and foundation drilling, tunneling, water well drilling and various other underground construction industries. All Derrick machines, screen panels and tanks systems are manufactured in-house at the Buffalo, N.Y., headquarters. *Booth #203*



Raise The Bar

Don't Settle for Second Best

The HOBAS history of success is based on supplying products which far exceed the minimum national standards for sewer pipe. So, do not settle for products that simply meet minimum national standards.

To achieve the successful HOBAS track record, specify HOBAS performance.



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DITCH WITCH

Featuring a 130-hp, Tier 4 engine, the Ditch Witch JT25 HDD offers 27,000 lbs of thrust and pullback, an exclusive rotational drive with 4,000 ft-lbs of torque, and the industry's quietest mid-size drill operation. It is ideal for installing utility pipe and ca-



bles up to 12-in. at lengths up to 500 ft. To improve jobsite efficiency and reduce job-site expense, the Ditch Witch MR90 mud-recycling system promises versatility on the job. The single, self-contained unit can mix and recycle mud, handle spoils and is the only unit that can be transported full of fluid. The MR90 mud recycling system is equipped to meet the demands of any small to medium-size drill with up to 90-gpm cleaning capability and pullback ratings from 20,000 to 60,000 lbs. The MR90 has a 340-gal first-pass mud tank, and 110-gal clean tank with 3-in. vacuum connections. An optional 300-gal fresh water tank with transfer pump provides additional drilling fluid capacity and high-pressure water for clean-up. *Booth #713*

DUKE'S ROOT CONTROL

Duke's Root Control does it all, providing the best chemical root control product available, applied by the most professional

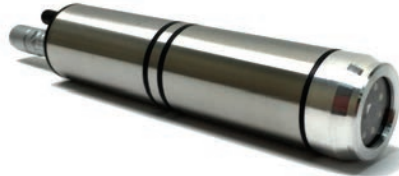


crews in the industry. Razorooter II is the only diquat-based herbicide registered by the U.S. EPA for controlling nuisance tree roots in sanitary sewer line collection systems and received a classification of "evidence of non-carcinogenicity for humans" (U.S. EPA Diquat R.E.D. Facts, July 1995). In 2014, the EPA further approved an amendment of Duke's diquat dibromide labels to lower the signal word from "warning" to "caution." Crews insert a hose from manhole to manhole, preparing to fill the affected sewer pipe with Razorooter II. The foam is then released, compressing against pipe surfaces, penetrating cracks,

joints and connecting sewers. Roots are killed on contact, decay naturally and slough away. Duke's applications prevent root-related stoppages for two to three years. *Booth #527*

ELECTRO SCAN

Electro Scan's ground-breaking, multi-sensor water leak detection probe combines its patent pending low voltage conductivity technology, with a high definition CCTV camera, pressure sensor and acoustic hydrophone, to accurately measure lo-



cation, size and GPM of each water leak. Representing the first reliable, repeatable and measurable solution for water loss leak detection, Electro Scan's tethered 4-in-1 probe finds water losses in pressurized water mains, accessing mains through fire hydrants, valves, flow meters and pressure fittings, to measure variations of electricity flowing through cracks, pinhole leaks, broken joints, and defective service connections, in accordance with ASTM F2550-13. Available exclusively as a professional service by the company, Electro Scan Services is able to find and measure leaks, typically not detected or correctly measured by legacy techniques. Integrated with the company's CriticalH2O cloud application, results are available within minutes, not days or weeks. *Booth #101*

ELGIN SEPARATION SOLUTIONS

Elgin Separation Solutions is a leading manufacturer of effective mud recycling systems for the trenchless industry. The Kemtron 600HD2.2 has set the standard



in design and performance. Redesigned from the ground up for 2016, Elgin introduces a new level of performance in mud systems. Featuring a 4,000-gal tank, inset pump pockets, HMI touch screen control panel with Wi-Fi network capabilities, single-point shaker jacking system, high/low tank level sensors and hydraulic trailer leveling jacks, to name a few. Now

you can control the system from your smart phone, tablet or laptop. Stop by the booth at the 2016 No-Dig Show and see how Kemtron maximizes your solids control and saves you time, money and the environment. *Booth #908*

GAME CONSULTANTS

G A M E Consultants is a specialized trenchless engineering firm that has one office in Port St. Lucie, Fla., and three offices in Canada; Montreal, Quebec, Ottawa, Ontario and Vancouver, British Columbia. GAME provides trenchless feasibility studies, specifications, contract administration and watermain condition assessment in live conditions or out of service, for small (100 to 300-mm, 4- to 12-in.) and large diameter (> 300 mm, > 12-in.) watermains. Its condition assessment tools can provide live CCTV inspection, leak detection and location for all diameter pipes. GAME also provides large diameter watermain inspection for pipes out of service. Since its origins in 2013, GAME has completed projects from coast to coast in both Canada and the United States. Let GAME take the guess work out of your watermains without any interruption to your service. *Booth #624*



GLOBAL MACHINERY

With its adjustable 20,000 to 88,000 lbs of pulling force, the X 400 is the best Cable Burster on the market today. The X 400 has the ability to burst 1.5 - to 10-in. diameter existing pipe, up to 500 ft in length. It boasts a remote control for fully automatic operation up to 480ft/hr. With its unique manhole frame, it can be operated from the surface, manhole-to-manhole or pit-to-pit. Global Machinery can provide Terra Cable Bursters up to 400,000 lbs, should your bursting job require it. Global Machinery and Terra also provide Terra-Hammer Underground Piercing Tools (moles) to customers throughout the United States. The exclusive combi-head is fast, accurate and traceable, and is offered from 1.5 to 6 in. and larger. *Booth #715*



GODWIN

The Godwin Dri-Prime NC150 pump is an extremely powerful, yet compact pump designed to handle the toughest stringy material and general dewatering applications. It features the Dri-Prime



SPR™ PE

Yes, we can manufacture a new pipe inside the host with equipment that fits through a 22" manhole opening!



CONTECH
ENGINEERED SOLUTIONS

RELINING DONE RIGHT™

With over 70 years of relining experience, **Contech Engineered Solutions** provides permanent, fully structural (the way a structural engineer uses the term) solutions based on time-proven design methods. Since we've been around the block a few times, we don't play games with the hydraulics or structural design. Knowing pipe assessment, structural design & hydraulic analysis is what we do. The result – the right solution for your project needs - done right, on time and under budget.

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automatic self-priming system and Flygt N-technology self-cleaning impeller, with flow capabilities to 1,770

gpm. Xylem's Godwin NC Series pumps deliver sustained high efficiency resulting in lower energy and fuel costs while reducing unplanned downtime, making the NC150 a best-in-class portable rental pump suitable for both sewage and clean water pumping applications. It is available for rent for sewage bypass applications and offers both electric and diesel drive options. The NC150 features emissions compliant engines and is available with a Critically Silenced enclosure to reduce sound levels to 69 dBA at 30 ft. *Booth #413*



HAMMERHEAD TRENCHLESS

Contractors now have 99 tons of pulling force for sewer, water and gas line replacement jobs from the new, powerful, compact HydroBurst 100XT static pipebursting system from HammerHead Trenchless Equipment. Featuring tethered remote control, the streamlined 100XT pays out rod very quickly due to the pipe industry's first automated rod spinning assembly and the unique design of its hydraulic cylinders. The unit weighs just 3,200 lbs and is only 39 in. tall by 30 in. wide. It can replace pipes up to 16-in. in diameter yet is compact enough to use with pipes as small as 4 in. The pulling machine's water-cooled PP4500 hydraulic powerpack with 72.7 hp Kubota engine pumps hydraulic fluid at up to 43.5 gpm and 4,500 psi. In 50-ton mode, the unit directs all hydraulic fluid to just two of the cylinders, which then can move twice as fast as in 100-ton mode. *Booth #801*



HEBNA CORP.

HEBNA specializes in compressive-fit HDPE internal pipeline liner installation, pipeline rehabilitation and plastic pipe systems. The installation of HDPE pipe via trenchless technology is a time-tested best solution for the renewal of water transmission mains and the prevention of pipeline corrosion



and/or abrasion. Pipeline owners and operators count on HEBNA to provide the most advanced materials and installation techniques to protect and renew their pipelines. Applicable to pipelines ranging from 3 to 48 in., we can cost-efficiently provide a renewed pipeline with increased flow capacity, as well as decreased pipeline maintenance costs. Protect your pipeline from corrosion or abrasion. Protect your reputation by lowering your risk of main breaks. Protect the environment by eliminating costly leaks. Protect your budget by extending the life of your pipeline assets and lowering operating costs. HEBNA's safety program and credentials are monitored in real-time via PEC, Complyworks, Browz and ISNETworld. *Booth #118*

HERRENKNECHT

The new HDD Fullface Hole opener from Herrenknecht enables the HDD contractor to ream from pilot bore to final diameter (30 in. to 56 in.) in one step through the hardest formations. The Fullface Hole openers can be easily and fast redressed in the field with three types of cutters for different geological conditions. The tooling can be complemented with a specially designed downhole jet-pump system (DHJP), which enables to transport the cuttings inside the drill pipe directly to the separation plant on the pipe site. Thereby not only the cutting sizes can be



maximized, which results in an extended service life of the cutting tools, but more importantly the frac-out risk is minimized with much less requirements for the design and management of the overall mud system. Contractors using the system benefit from the savings, installation time and costs. *Booth #219*

HOLLY PIPE/NST CORP.

Over the past two decades in the HDD industry, the use of wash pipe for "surface casing" has become more and more popular. Drill and Drive wash pipe links hand in hand with the common HDD tools for drilling through preventing hydro-fractures, stabilizing the pilot bore hole and also creates a firm "backstop" for pushing

off of. Traditional wash pipe is typically screwed/welded together and "washed over" the existing pilot string, which can take one to three days to complete if welding is required.

NST's Drill and Drive wash pipe will render traditional methods useless while cutting fabrication time out and mitigating threading issues of common wash pipe. Eliminating rig downtime and allowing drillers to push farther is how "Drill and Drive" will revolutionize the initial set up and completion of pilot holes and beyond. NST can supply tool joints for welding on or provide complete Drill and Drive pipe ready for service. *Booth #329*



HYDRA-FLEX INC.

The Ripsaw Rotating Nozzle, from Hydra-Flex Inc., is designed specifically for the rugged demands of hydro excavation projects. It blasts a 0-degree straight water jet at up to 3,200 psi while rotating at an optimized speed to form an 18-degree cone-shaped spray pattern. Its concentrated stream results in greater impingement — allowing operators to dig faster while also using dramatically less water. Ripsaw nozzle owners have reported increases in productivity of up to 35 percent upon switching to this nozzle style. These heavy-duty, high-impact nozzles are constructed with stainless steel housings and tungsten carbide wear surfaces to withstand harsh environments and provide longer life than ceramic nozzles. Non-conductive urethane coating on the nozzle body also protects the user and sensitive underground assets. The Ripsaw is available in nozzle sizes #3.0 to 12.0, with repair kits available to extend the nozzle's life and lower overall operating costs. *Booth #227*



IMPREG INTERNATIONAL A/S

With the most advanced and most complete UV-cured liner portfolio on the market, covering the entire size range up to 63 in. (DN 1600), IMPREG is the ideal partner to address all rehabilitation needs within the traditional gravity sewer application, but also for the growing

NEW LISY 3.2

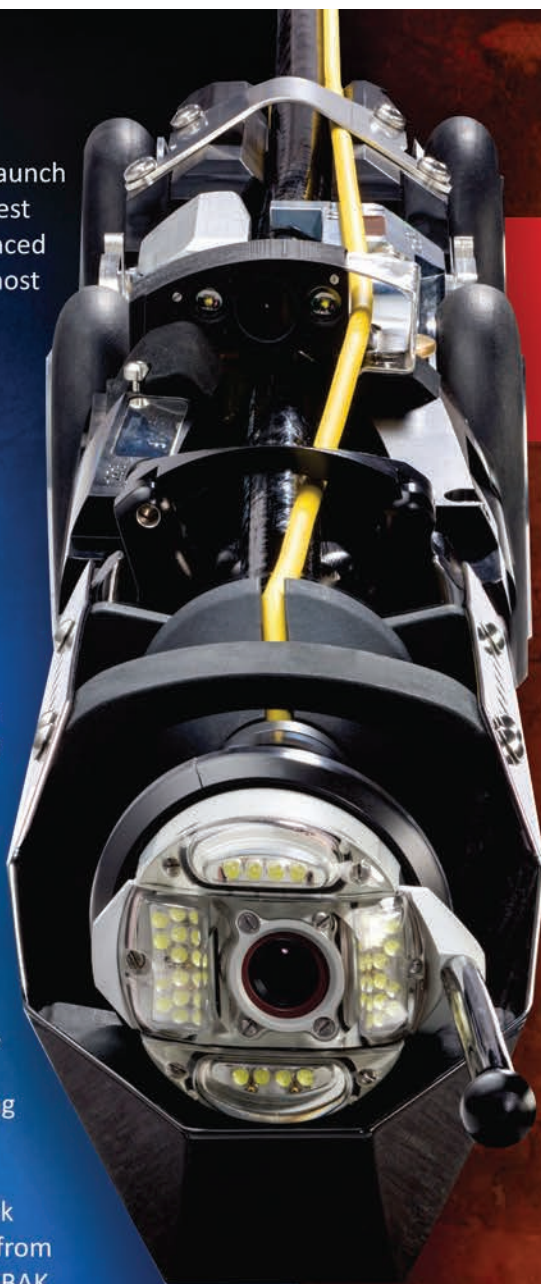
Introducing the new LISY 3.2 Lateral Launch System by IBAK. The LISY 3.2 is the latest evolution in the industry's most advanced lateral launching system. Trusted by most major contractors and large cities throughout the world, the LISY has always provided you with superior production capabilities.

The front articulation arm of the LISY 3.2 has been redesigned for greater strength and lower weight. The geometry of the front end has been altered to avoid debris and water retention during operations. Cable routing has been improved to protect critical cables. The entire drive system was revamped with a larger drive motor and more efficient pressure wheels to increase the launch speed by up to **4 times faster** than other lateral launchers!

With faster launch speeds, shorter more flexible front connector options, and smaller launch cameras, the LISY 3.2 is perfect for your more demanding projects, including reverse-launches.

The new LISY 3.2 was designed to work with the new **3-D GeoSense® system** from IBAK. This revolutionary system from IBAK gives you the power to map lateral pipelines with accuracy and speed. The new 3-D GeoSense® sensor tracks the movement of the camera as it travels through the lateral, capturing distance, position and depth in three dimensional space. This data is captured and displayed by your data logging software. **Finally, there is no more guessing. You no longer have to track the system above ground with a locator, simply conduct your inspection and collect the positional data. This is the perfect system for cross-bore analysis!**

**NASTT NO-DIG
BOOTH #210**



Currently integrated with WinCan VX. Other integrations in preparation.



**NEW TECH
ON DISPLAY AT WWETT
BOOTH #2207**



INTRODUCING

NANO

Small Diameter - Huge Features

While the NANO® is capable of traveling in pipelines as small as 2" in diameter, you will not be giving up power or flexibility. The NANO® has many of the same features of the larger ORION Zoom including: laser measurement, integrated location transmitter, bright LED lights, pressure regulation and full pan and tilt functionality!

**Pushrod, Tractor
or Lateral Launch
CAPABLE!**

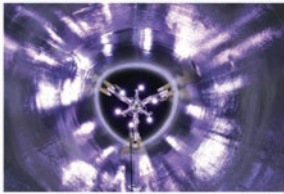
Camera Dimensions

Length	84mm / 3.30"
Diameter	47mm / 1.85"

Technical Specifications

Pan Range	+/- 120°
Angle of View	+/- 150°
Rotation	Continuous
Pressure Protection	Standard
Operating Range	2" and up
Upright Picture	Automatic
Lateral Launch Capability	Yes
Pushrod Deployment	Yes
Tractor Deployment	Yes
Laser Measurement	Diameter, Deflection, Defect
Location Transmitter	33 kHz

culvert market place. The ability for the professional installer to conduct multiple culvert installation per day with a liner portfolio, that arrives ready-to-install on site is economically, as well ecologically attractive. The iMPREG liner portfolio is available either in an advanced polyester or vinyl ester resin



configuration, addressing today's rehabilitation needs. As with all of iMPREG's liner solutions, the latest, most comprehensive equipment and accessories are part of the program. iMPREG continues to develop liner solutions to meet the demands of the expanding CIPP industry. *Booth #221*

INFOSENSE INC.

The Sewer Line Rapid Assessment Tool or SL-RAT provides collection system operators with a revolutionary new tool for focusing camera and cleaning



efforts on the dirtiest gravity-fed lines. Reduce cleaning water usage and effort by not "cleaning clean pipe." The technology exploits the fact that sound energy flows similarly to water through a pipe. The SL-RAT "yells" in one manhole and "listens" in an adjacent manhole to provide an overall blockage assessment. The SL-RAT's operating costs are typically 1/10th to 1/20th that of other cleaning or inspection technologies. Highly portable with ruggedized field-tested construction. No confined space entry and no waste flow contact. Train operators in minutes. Test results, including GPS coordinates, are immediately available with little interpretation required. Results can be saved to the SL-DOG cloud application for additional analysis. *Booth #427*

INFRASTEEL by PRECISION PIPE

Precision Pipe and Products Inc. has



developed the ability to roll smooth steel pipe into custom shapes — round, arched, modified arched and elliptical — in thickness up to 1 in. for sliplining of culverts and other structures. InfraSteel provides a cost-effective, and environmentally friendly alternative to "remove-and-replace" methods. Design life expectancy is 50 to 100 years. When a project is complete, it is one smooth pipe with no joints to fail. Precision Pipe also has developed a Modified Arch for lining of box culverts. This design helps ensure desired flow rates. *Booth #732*

INFRASTRUCTURE REPAIR SYSTEMS INC.

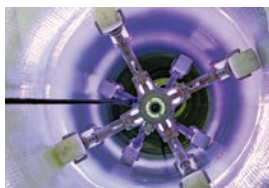
Infrastructure Repair Systems Inc. has been a U.S.-based manufacturer of CIPP repair products for more than 18 years.



Its IRSI trenchless Point Repair System kits include premeasured scientifically formulated, hot or cold weather, two-part epoxy resins and prefabricated liners. Its mainline, lateral and elbow liners have patented features and are sized exactly for the job, saving your company time and money. Additionally, its Infragard Manhole Rehab System has no VOCs, is corrosion resistant and includes ChimCoat, which provides strength and flexibility for acute temperature changes above the freeze-thaw line and also includes Top Coat, which provides strength and durability for the rest of the repair. With more than 30,000 permanent point repairs installed by our customers and zero product failures, IRS product specialists and certification team can help ensure your success with IRSI products. *Booth #631*

INLINER TECHNOLOGIES

Inliner Technologies, a leader in CIPP renewal, is pleased to intro-

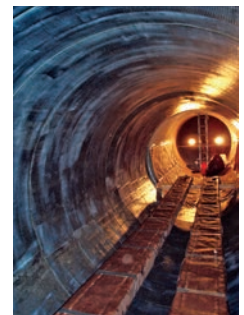


duce an ultraviolet light-cured product to complement its traditional hot water and steam-cured CIPP processes. The UV-cured product, known as Inliner STXTM, combines a reinforced liner and alternative catalyst system — resulting in reduced wall thicknesses and a longer shelf life of the impregnated liner. The Inliner STX product complies with ASTM F2019

requirements and is a viable solution for pipe diameters up to 60 in., for environmentally sensitive applications and when a stronger reinforced liner is beneficial. Focusing on superior customer service and innovation, Inliner has earned a reputation for unmatched integrity and quality. In-house lining manufacturing capabilities combined with a skilled network of installers results in a quality product at competitive pricing levels — giving municipal and industrial customers cost-effective, reliable and long-term pipeline solutions. *Booth #204*

INSITUFORM TECHNOLOGIES LLC/FIBRWRAP CONSTRUCTION SERVICES INC.

Insituform Technologies LLC and Fibrwrap Construction are part of Aegion's infrastructure solutions platform. Together, these companies provide infrastructure rehabilitation and strengthening solutions for pipelines, buildings, bridges and other structures. Insituform is a leading worldwide provider of CIPP and other technologies and services for the rehabilitation of pipeline systems. Insituform's expertise is based on more than 40 years of experience spent in the reconstruction of more than 20,000 miles of pipe. Insituform offers a full spectrum of trenchless rehabilitation products including Insituform's flagship CIPP, as well as products for pressure pipe systems including fiber-reinforced CIPP and HDPE linings. — *Booth #919* — Fibrwrap Construction is your complete source for structural repair, strengthening and restoration. With over 20 years of experience, Fibrwrap specializes in the application of advanced composites and is certified in the installation of Fyfe Company's Tyfo Fibrwrap system. *Booth #921*



INTERPLASTIC

Interplastic's CIPP "green" resin allows for the repairing of partially or fully deteriorated underground pipes with environmental safety in mind. These new resins are a proven solution in gravity pipelines providing consistent quality, fast wet out,





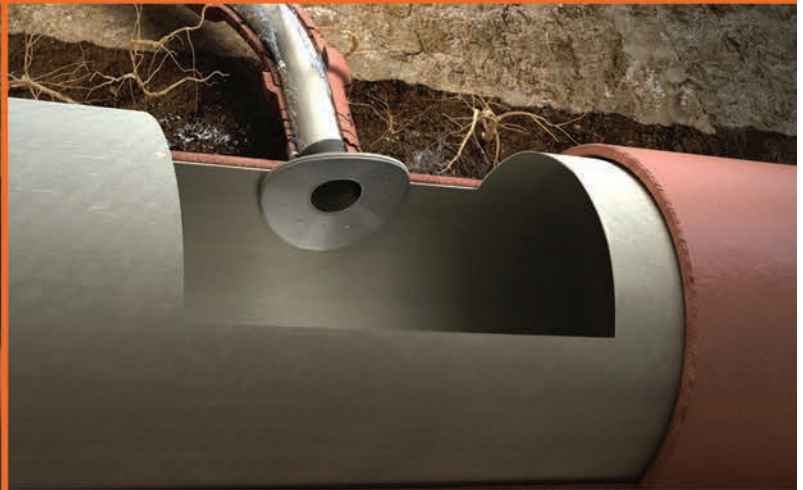
T-Liner®



Sectional T-Liner



Shorty™



Large Diameter Lapel Liner

OFFERING THE WIDEST RANGE OF MAIN-TO-LATERAL REHABILITATION SOLUTIONS

T-Liner

- ASTM F2561 Compliant
- One-Piece Connection Lining Systems
- Insignia™ Compression Gaskets

Sectional T-Liner

- Simultaneously repairs a section of the mainline pipe and the lateral service line
- No more reinstatement after spot repair

Shorty

- A one-piece, structural, stand-alone homogeneous Main/Lateral CIPP connection liner that extends 3 ft. to 10 ft. up into the lateral pipe

Large Diameter Lapel Liner

- Rehabilitates the main-to-lateral connection in lined or unlined large diameter main pipe lines via man entry



Visit us at NASTT's No-Dig Show



**BOOTH 818
LIVE DEMOS**

MAINLINES | LATERALS | MANHOLES | GASKET SEALS | EQUIPMENT

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trouble-free processing, high strength and flexural modulus properties. The ECO series resins — CORVE8290, vinyl ester; CORVE8295, modulus enhanced ECO Series vinyl ester; and CORVE8287, ambient cure ECO Series for laterals and point repairs — have no styrene, no volatile organic compounds (VOCs) and no hazardous air pollutants (HAPs). The resins meet ASTM F1216 requirements and reduce the likelihood of stress cracking and shrinkage with a lower exotherm in the enhanced version. Interplastic Corp. is a specialty chemical company that focuses on the production and sale of unsaturated polyester and vinyl ester resins, gel coats, colorants and putties for the composites and cast polymer industries. Interplastic is ISO 9001:2008 and ISO 14001:2004 certified. *Booth #707*

KAYDEN INDUSTRIES

Kayden Industries released a new high-capacity centrifuge built for large volume HDD projects. This centrifuge processes 1,056 gpm of 9 ppg fluid. The Titan-3100's larger bowl is complemented by a 120:1 ratio gearbox. This gearbox creates an output of 442,000 in./lb; substantially higher than competitors in the market. The Titan runs off a 200-hp main drive motor, and is fully variable. The design of the Titan-3100 translates into a higher volume of solids being removed from the fluid on the first circulation. The 7-degree beach, which is one of the longest in the solids control industry, allows for maximum drying time of the cuttings before it is discharged from the machine. *Booth #421*



LANEY DIRECTIONAL DRILLING CO.

Laney is a leading trenchless services company including HDD and Direct Pipe technologies, providing integrated engineering, design and construction services. HDD is a trenchless method of installing pipelines and conduits in the areas where traditional open-cut excavations are not feasible and/or not desired for environmental and/or constructability reasons. It is commonly used for the installation of



pipelines beneath rivers, highways, railroads and other environmentally sensitive areas, or areas where the topography or site conditions along a proposed alignment conflicts with conventional cut and cover installation practices. Direct Pipe is a single pass process that uses a steerable tunnel boring machine-cutting head. The technology tunnels and pushes the pipe into place at the same time, filling the void as it progresses. This technology greatly reduces the likelihood of hydraulic fracture and inadvertent returns and is ideal for crossing under levees and environmentally sensitive areas. *Booth #300*



LiquiForce has developed and patented a process for the rehabilitation of mains, laterals and manholes without any digging. This unique engineered method seals the entire system and returns it to "as new" condition for much less cost than conventional dig-and-replace, and in a much shorter period of time. With no access hole being made in front yards, driveways or sidewalks, our system greatly reduces homeowner concerns and long-term liability is reduced by not having to install a cleanout in the current lateral. Through the use of this "totally trenchless" program, trees are not removed, and traffic disruption is reduced. As part of the project, LiquiForce provides a real-time tie-in to the work being done, which allows for better management and controls of all program aspects by all involved, right from their own computer. *Booth #635*

LMK TECHNOLOGIES

LMK's T-Liner is a one-piece homologous main and lateral CIPP connection liner that is ASTM F2561 compliant. T-Liner has a uniform wall thickness and incorporates compressible lining material at the upstream and downstream ends creating a smooth tapered transition to the host pipe. Both the mainline and lateral sections are formed as a structural cylinder that renews 18 in. and 360-degrees of the mainline and extends up the lateral pipe as one continuous lining. T-Liner with Insignia compression gasket-sealing technology provides a verifiable non-leaking system. These com-



pression gaskets are embedded between the host pipe and the T-Liner and are compatible with all pipe types including polyethylene. A permanent lateral Identification Indicia is placed on the mainline lining, which includes the building address and other pertinent information regarding the raw materials and other pertinent manufacturing details. *Booth #818*

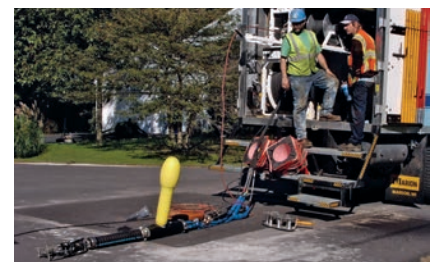
LOGAN CLAY PRODUCTS

No-Dig Pipe by Logan Clay Products is vitrified clay jacking pipe (VCP) that features high axial strength to withstand jacking forces, precision machined joints to ensure high performance, and unmatched corrosion resistance. No-Dig Pipe has been used in pipe bursting, slurry microtunneling, sliplining and pilot tube method installations throughout North America for over 20 years. It is the predominant jacking pipe in the standard VCP sizes. The continuing growth of the pilot tube method in the trenchless industry is built on utilizing No-Dig Pipe to provide a highly accurate and economical trenchless installation method for gravity flow applications. The pilot tube method and No-Dig Pipe have been used extensively to install long lasting sewers in challenging conditions where open-cut is not an economical solution and in areas where disruption to the community or the environment needs to be kept to a minimum. *Booth #909*



LOGIBALL

Logiball manufactures a complete line of test and seal packers for the trenchless rehabilitation of collection systems. Specialty contractors and municipalities around the world use Logiball lateral packers to stop infiltration at lateral connections and in lateral joints, all from the mainline sewer access as far as 30 ft from the mainline. Chemical grout is pumped through the packer and forced out through existing pipe defects to seal and stabilize the soil around the injection points preventing washout of backfill fines into the sewer and sealing off infiltration. *Booth #524*



Want to Find All Leaks in Your CIPP Project That Were Missed By CCTV?



Liner Leakage

Independent Lab Testing Finds Leaks Not Visually Detected, But Found Using Electro Scan.

Will these newly installed liners last their estimated 50 year useful life?

Fast, Accurate, & Unbiased Results.

As featured in the SEVENTH EDITION, VOLUME 1, OPERATION & MAINTENANCE OF WASTEWATER COLLECTION SYSTEMS.

In accordance with ASTM F2550-13. US Patent #9143740 and International Patents Pending.



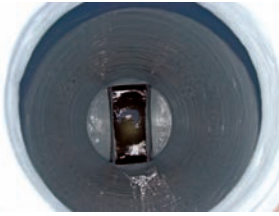
Add to Your CCTV Truck, Purchase Your Own Van, or Call for Service.

electro^{scan}inc.

916.779.0660 | info@electroscan.com | www.electroscan.com | 1745 Markston Road, Sacramento, CA 95825

MADEWELL PRODUCTS CORP.

The Mainstay Composite Liner is a two-component system consisting of a high-strength restoration mortar, such as Mainstay ML-72 Microsilica Restoration Mortar, and an epoxy corrosion barrier coating, such as Mainstay DS-5 Epoxy Coating, that cures simultaneously to repair and protect manholes and other sanitary sewer structures. The mortar is first shot onto a new or deteriorated substrate, and an epoxy topcoat is then immediately applied while the mortar is still soft. The simultaneous combination of these materials creates a monolithic lining that cures into a strong, highly corrosion resistant and continuous surface, free of pinholes, holidays and voids. The mortar and topcoat are tightly bonded not only to the substrate but also to each other. *Booth #201*



MCELROY

The Super Trac-Star 28 is the No. 1 choice for ease of maneuverability and productivity on jobsites fusing pipe from 2- to 8-in. The self-contained, self-propelled, track-mounted vehicle handles grades of up to 30 percent and combines a Pit Bull 28 carriage with a larger Trac-Star 412 diesel-powered chassis, which provides greater flexibility for users on jobsites where gasoline is not permitted. The Super 28 features an interchangeable 4-jaw carriage that can be easily removed for in-ditch fusions. For tight installations, the outer fixed jaw and skid can be removed from the carriage converting it to a 3-jaw carriage for an even more compact fusion unit. It can be ordered as a combination unit that allows fusion of branch saddles with a maximum base diameter of 9.63 in. onto any size main. Visit McElroy at the Alliance for PE Pipe booth at the 2016 No-Dig Show. *Booth #315*



MCLAUGHLIN GROUP INC.

The Vermeer by McLaughlin CS418B core saw is designed to cut 4- to 18-in. diameter holes in hard surfaces, like asphalt and concrete, to help utility contractors

safely locate and excavate underground utilities. The core saw is built on a portable, compact trailer measuring 137-in. long and 69-in. wide for easy jobsite access and can be towed with a ½-ton pickup. Core sawing creates less disruption to traffic, less manual labor and preserves the road integrity when compared to saw cutting. Powered by a 25-hp Kohler EFI engine, the core saw has a two-speed operation that can generate up to 380 rpm for varying job site conditions. The CS418B features an on-board water tank to cool the saw bit and can be easily moved into position with the telescoping and pivoting arm. *Booth #533*



MEARS



Mears Group Inc., HDD, has been an industry leader for more than 20 years. As one of the largest contractors specializing in HDD services, its focus is on value-added projects — design/build and engineering/procurement/construction — where HDD is a critical factor. Serving the oil and gas, electrical and water/wastewater industries, its mission is to be the industry's first choice as a partner that is a problem solver, collaborative and has the technical ability and resources to produce safe, high-quality work. Mears is certified in Safety, Quality, and Environmental: OHSAS 18001:2007, ISO 9001:2008 and ISO 14001:2004. Mears continues to revolutionize HDD for land and marine, creating world records along the way. *Booth #218*

MICHEL'S

Tunneling projects come in a variety of sizes, complexities and methodologies. Michels Corp. continues to build on its reputation as a go-to contractor for handling some of the most challenging ones. Last year, Michels completed construction of 5,000-ft-long parallel sanitary and storm sewer trunks in Saskatoon, Saskatchewan, Canada; and completed construction of a five-mile-long water tunnel under the San Francisco Bay in California (Bay Tunnel). Michels has set the bar for rapid performance, environmental protection and



safety in complex work environments. The company is experienced with various tunneling methods in hard rock and soft ground and the construction of shafts of all sizes and depths. Michels is proud to be a progressive leader and active participant in the trenchless technology industry for more than 25 years, said tunneling manager Craig Vandaele. Vandaele was recently elected to the NASTT board of directors. *Booth #507*

MIDWEST MOLE

The Metropolitan Sewer District of Greater Cincinnati recently received a Design Build Institute of America Award for its Oakley Sewer Separation Project. Midwest Mole was the trenchless contractor for the project which included 1,930 ft of 94-in. rib and bored tunnel for a 60-in. carrier and 285 ft of 72-in. tunnel for a 60-in. carrier. The project had a curve in the middle of the long 94-in. tunnel that added additional complexities to the project. The project came in under budget, ahead of schedule and well before the cities consent decree mandate. Midwest Mole is a leader in the trenchless industry. *Booth #615*



MILLER PIPELINE

Miller Pipeline's WEKO-SEAL, the industry's leading internal joint seal technology, is used extensively for internally resolving joint leakage, punctures and crack repairs in pipelines ranging in diameter from 18-in. and larger. With more than 285,000 installations to date, the WEKO-SEAL has become the repair method of choice for many contractors, municipalities, gas utilities, industrial and nuclear power customers throughout the United States. Miller's experienced confined space technicians complete all installations using time proven techniques to provide permanent, flexible, leak-proof repairs. With the WEKO-SEAL, do the job once. This man-entry repair system is a flexible rubber leak clamp that ensures a non-corrodible, bottle-tight seal around the full inside circumference at every installed location, while offering significant savings over conventional external repair methods using individual excavations. *Booth #835*



THE PIPE THAT FITS IN SO MANY WAYS.



NovaForm™ PVC Liner

The sewer & culvert rehabilitation solution in the sizes you need.

Aging sewer and water infrastructure has led to ever increasing maintenance costs for municipalities. The engineers at IPEX recognized this development and responded with NovaForm PVC Liner, a product that brings the benefits of factory-made PVC pipe to the North American trenchless pipe rehabilitation industry.

A Size for Every Job

Available in the sizes you need: 6" to 30" and industry-standard dimension ratios DR 35 and DR 41.

Durability of PVC

Useful life of 100 years, plus excellent chemical resistance properties.

Consistent Production

Factory-made, quality-controlled and tested to stringent ASTM standards.

Peace of Mind

IPEX has been a leading manufacturer of PVC piping systems for more than 50 years and developing trenchless PVC solutions for the past 20 years. Plus, we back everything we sell with in-field technical support throughout North America.

To learn more, call us toll free at **1-800-463-9572**
or visit **www.ipexamerica.com**

NovaForm™ is manufactured by IPEX Inc. and distributed in the United States by IPEX USA LLC.



MILLIKEN INFRASTRUCTURE SOLUTIONS

Milliken Infrastructure Solutions LLC, a subsidiary of Milliken & Co., introduced GeoSpray 61, the latest addition



to its innovative line of geopolymer mortar system solutions. Building on the company's core geopolymer expertise, GeoSpray 61 is ideal for concrete pressure pipe rehabilitation and is safe for application in potable water systems. GeoSpray 61 is third-party tested and NSF/ANSI 61-2014 certified. The product can be used as a protective mortar lining for corrosion protection or as a structural enhancement in large diameter pipes. The company's range of geopolymer mortar products are cost-effective solutions that not only increase chemical resistance and physical performance, but also significantly reduce greenhouse emissions. MIS works to solve infrastructure challenges differently, offering solutions that rehabilitate, strengthen, and protect infrastructure components. Backed by the company's extensive engineering expertise and support, these systems install easier and faster than functional equivalents. *Booth #519*

MONOFORM by HYDRO-KLEAN



MONOFORM by Hydro-Klean is an ABS interior manhole forming system that allows the pouring of new concrete walls and bases for complete rehabilitation of existing manhole structures. The new structure is designed to exceed H-20 traffic loading requirements. Restoration is completed without traffic detours, external sewage bypassing and disruption to adjacent utilities. Custom forms are available for larger structures such as lift station rehab or retrofit. Contractor and municipal inquiries are welcome. Hydro-Klean offers MONOFORM rehabilitation as a service with its own crews or can provide the forming system to be used by others. Onsite training is available. *Booth #225*

NASSCO INC.

The National Association of Sewer Service Companies (NASSCO), is committed to setting industry standards for the assessment and rehabilitation of underground infrastructure. Pipeline cleaning and inspection are critical components to sustaining our underground infrastructure. NASSCO recently published two specification guidelines that were written to provide a comprehensive, uniform and consistent template for the procurement of pipeline cleaning and pipeline inspection. They include guidance for the successful planning, implementation and completion of a sewer cleaning and/or sewer inspection project. These specification guidelines have been prepared by the NASSCO Industry Standards Committee, which is comprised of experts in the field including contractors, owners (public and private), equipment manufacturers, operators, and engineers. Specification Guidelines supporting trenchless technologies are provided as a complimentary service at nassco.org (under specifications) and at tradeshow and conferences to continue NASSCO's steadfast commitment to assure the continued acceptance and growth of trenchless technologies through quality specifications. *Booth #829*

NIGHTSTICK by BAYCO

The new Nightstick XPP-5422GM Intrinsically Safe Class I, Division 1 Dual-Light Flashlight is an all-LED industrial



lighting industry game-changer. Constructed from tough glass-filled nylon polymer, the forward-facing LED on the XPP-5422GM emits 120 lumens 170+ m to reach far distances. A secondary and independent 120 lumen LED floodlight for seeing items up-close is integrated perpendicular to the flashlight providing soft unfocused light towards your feet as you walk. This exclusive Dual-Light innovation from Nightstick offers you the ability to turn both the



flashlight and floodlight simultaneously while also allowing you to go hands-free with two integrated magnets for 360 degrees of freedom. By providing two completely unique forms of light for half the price of traditional Intrinsically Safe lighting products, the XPP-5422GM dual-light flashlight is changing the way lighting is used now and into the future. Nightstick is tough, durable and affordable. *Booth #626*

OXFORD PLASTICS USA

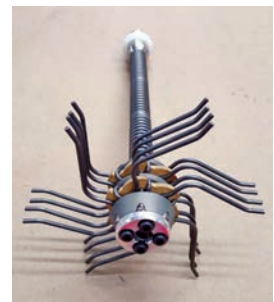
The Oxford 16/12 Composite Sidewalk Cover, is an alternative to steel and/or timber trench covers. Designed to provide safe passage over open trenches of maximum width of 35.4 in., it can handle the distributed weight up to 4,400 lbs. High visibility, slip-resistant surface with



chamfered edges, prevents tripping. Underside has ribbed framework for added strength. Oxford Plastics composite road plates and sidewalk covers have been in use in Europe for many years, providing a lightweight, high visibility, slip-resistant solution during construction. These products were designed and developed in partnership with utility companies, to meet their standards and requirements. Currently, the 16/12 is in wide use in New York City, Washington, D.C., Boston and other major cities throughout the United States. *Booth #923*

PICOTE SOLUTIONS INC.

The new innovative Smart Spider — operated with the Picote Maxi Miller — cleans



all types of pipes fast and efficiently and is even safe to use in PVC pipes. A unique tool designed specifically for pipes where the base or other sections are missing. Easily navigates 90-degree bends in 4- and 6-in. pipes. Additionally, Picote's high-speed drain cleaning system for 1.25- to 10-in. diameter cast



24/7 Emergency Response

When you need to get it done,
call the experts
with the biggest toolbox.

Confined space and pipe drying
Air compressors
Ground protection
Containment berms
General construction equipment



Sunbelt Rentals Pump & Power Services division provides innovative rental solutions for a wide range of equipment needs. With an extensive selection of pumps and highly trained specialists, we have the equipment and expertise to design and install turnkey bypass and dewatering solutions that will exceed expectations. When you need comprehensive solutions, turn to the experts at Sunbelt Rentals.

800-736-2504 sunbeltrentals.com

iron drains and sewers. First, choose your powerful Picote Miller — three sizes available. Second, attach one of Picote's superior stainless steel grinding chains — Circular Cyclone for fragile pipes or the Original, an all-round general chain. The system allows fast and efficient cleaning of soft blockages, scale and calcium buildup, tree roots, concrete, lead and failed gaskets and imperfections in pipe. It comes with world class engineering and R&D support, as well as reduced cleaning time compared to traditional methods and a proven track record of success around the world. *Booth #935*

PIPEMEDIC by QUAKE- WRAP

PipeMedic is one of the QuakeWrap family of products invented by Dr. Mo Ehsani, professor emeritus of structural engineering who pioneered the introduction of FRPs to the construction industry. PipeMedic products provide patented FRP repair solutions to protect and extend the life of high pressure and gravity pipelines of all sizes and shapes. PipeMedic products also include StifPipe, SuperLaminate, and InfinitPipe, providing fast, cost-effective piping solutions for a wide variety of applications. *Booth #434*



PLASTICS PIPE INSTITUTE

PPI technical and engineering staff will be available to answer questions about the new C906-15 AWWA standard that now includes PE4710 enhanced performance HDPE resins that improve the durability



and reliability of HDPE pressure pipe used in municipal and industrial water and wastewater systems. Additionally, three polyethylene pipe software programs will be available. PPI-BoreAid software simplifies the analysis process for trenchless applications of polyethylene pipe used in gas distribution, water and sewer systems. The PPI Design and Engineering Calculator assists engineers with computations relating to internal and external pressure

ratings, pressure and gravity water flow, water hammer, low pressure and high pressure gas flow, and automates other assessments for above and underground PE pipe systems. PPI PACE allows industry professionals to easily perform pressure pipe analysis calculations for water distribution, transmission main systems and force mains in accordance with current published AWWA and ASTM industry standards. *Booth #313*

PRIME RESINS INC.

Prime Resins' AR 800 is a very low viscosity, hydrophilic acrylate resin that produces an elastomeric gel with variable set times. This three-component resin is used for leak sealing and soil consolidation. It is ideal for geotechnical applications in humid environments. The variable set time range is long — from minutes to more than an hour — and is adjustable in the field. The resin remains fluid until polymerization, allowing for excellent penetration, so it is a great choice for sandy to less permeable soils. Recommended uses: Mainline and lateral sewer grouting, curtain grouting, water control in tunneling operations, soil stabilization and crack injection water stop. Typical areas of use: tunnels (subway, water, utility, etc.), manholes, culverts, storm sewers, retaining walls and below-grade parking decks. Advantages: meets NSF/ANSI Standard 61, long adjustable open time, ideal in wet or humid conditions, operates in same equipment as acrylamide grouts (though stainless steel wetted parts are required). *Booth #625*



PROFESSIONAL PIPE SERVICES (PRO-PIPE)

For nearly 25 years, Hoffman Southwest Corp.'s Professional Pipe Services (Pro-Pipe) Division has provided video inspection, cleaning and rehabilitation of pipelines in a variety of sizes throughout the western United States. Today, Pro-Pipe is the largest CCTV inspection company concentrated in the Western United States (second in the nation) and



the trusted leader of natural gas companies for the identification of cross bores in lateral lines. Pro-Pipe is a service provider focused on the long-term commitment to quality for facility owners, government agencies, engineers, construction firms, general contractors and natural gas providers. Driven by a stringent safety culture to protect staff, crews and the general population, Pro-pipe has a large fleet, the most experienced NASSCO PACP-certified operators in the industry and is well capitalized, allowing acquisition of equipment at a moment's notice. No job is too big or too small. *Booth #925*

RAEDLINGER PRIMUS LINE

Primus Line is a Kevlar-reinforced, flexible pressure pipe rehabilitation technology and holds numerous international

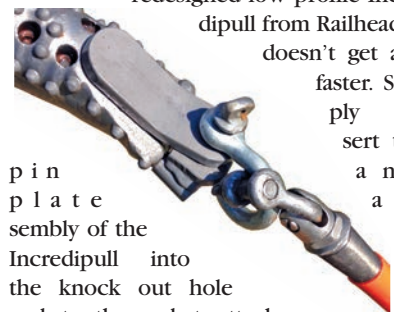


potable water certificates including NSF/ANSI 61. Its composite system, including the liner and the specially engineered end fittings, have been used in Europe for more than 15 years for different pressure applications such as potable water, sewage, natural gas and crude oil. The Primus Liner is characterized by long insertion lengths of 8,000 ft and more in one single pull and the ability to traverse multiple bends up to 45 degrees. The system can accommodate maximum operating pressures of 800 psi in a straight line with a wall thickness of only 0.24 in. Pressure pipelines in difficult to access places such as river crossings, main traffic arteries or even environmental protected areas can easily be rehabilitated with this technology. Furthermore, the pressure rating on existing water mains can be increased by installing a high pressure Primus Liner. *Booth #222*

RAILHEAD UNDERGROUND PRODUCTS

Installation speed is priority in horizontal directional drilling. With the newly redesigned low profile Incredipull from Railhead, it

doesn't get any faster. Simply insert the pin plate assembly of the Incredipull into the knock out hole and tooth pocket attach the clevis and you are ready to



www.trenchlessonline.com



PALTEM

Is Coming To America!

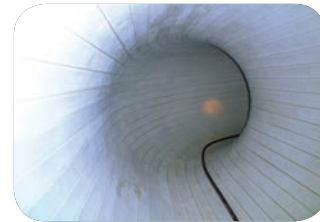
PALTEM: Japan's choice for trenchless rehabilitation. Over the last 30 years, more than 1,800 miles of pipeline have been rehabilitated using the PALTEM system in Japan.

The PALTEM family of technologies can be used to rehabilitate virtually any type of pipe, including water, sewer, gas, oil, electricity and telecommunications.



PALTEM Flow-Ring (FR) forms a new structure inside existing pipes. The Flow-Ring (FR) can rehabilitate virtually any shape or size of pipe from 800 to 5,000 mm (31 – 197 inch)

The new structure consists of steel rings as frame work, plastic strips making the surface, and a special mortar to grout the space between the existing wall and the new structure.



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ASHIMORI



go. Tight installation locations are no problem with this easy installation. The new low profile design will not hang up during pull back. The times avings of not dealing with bolts, pins or other fasteners, will keep more money in your pocket. *Booth #931*

RAMVAC

Ramvac by Sewer Equipment's HX-6 truck-mounted hydro excavator is one of the smaller models in the Ramvac truck



family, but is equipped with large productivity features. While other units may be successful hydro excavators with air capabilities or great air excavators with water capabilities, Ramvac's HX-6 is truly both an air excavator and hydro excavator built into one unit. This unit offers a 6-cubic yard debris body and a 10 gpm at 2,500 psi water system with 650 gal of on-board water — all in a temperature controlled enclosure. This high-pressure water system, coupled with a 350 cfm and 150 psi air compressor, is the perfect fit for any hydro or air application. The 6 in. vacuum system with 3,000 cfm blower will prevent clogging in the vacuum hose during air or hydro excavation applications. All of these incredible features comes in a compact footprint, with a NEMA rated electrical system, debris blow-off system and a fully hydraulic power train for superior durability. *Booth #128*

RAUSCH USA

The Rausch Laser Profiler now performs measurements in pipe diameters from 8 in. to 72 in. It performs three individual tasks utilizing one integrated system: CCTV in-

rauschUSA

spection, crack measurement, and laser profiling. This is not a third party manufactured clip-on laser profiler, but a full Rausch camera connected to the L135 steerable tractor. The Rausch system features two laser diodes integrated into a mainline TV camera head. The lasers project onto the pipe wall and the rotating camera head analyzes the pipe profile via "spinning laser" technology. No time consuming, manual field calibration is necessary — simply place the profiler in the pipe and begin. All data is instantly and accurately generated on site

utilizing POSM Pro software. No third party data processing is required, thus providing immediate and reliable evaluation of the pipe right on site. Meets ASTM F3080-14 and ASTM F3095-14 standards. *Booth #100*

RELIN AMERICA

Reline America Inc. is the leading North American manufacturer of ultra-violet

RELIN AMERICA

glass reinforced cured-in-place pipe. Reline America Inc. manufactures state-of-the-art installation equipment specific to Alphasiner. Its lining materials are for 6- to 54-in. diameter pipelines. Its award-winning Quality-Tracker System monitors and records all critical aspects of the installation process. Reline America serves the infrastructure protection and rehabilitation needs of municipalities, DOTs and industries throughout North America. Lining, equipment rigs, support vehicles and equipment are designed and built to suit each installer's specific requirements and budget. Its UV technology provides; no contaminated discharge, least disruptive job site, minimal carbon footprint, and job site odor containment. More than 1.4 million lf has been installed across North America. Made in the USA. *Booth #513*

RESIPLAST

Resiplast US is the American division of Spetec, a Belgian-based manufacturer

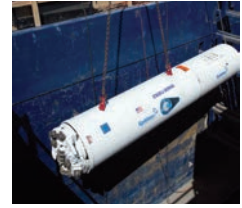
Spetec

of high-quality polyurethane and acrylic injection resins. Spetec has been in the industry for more than 30 years and is supplying its products in the United States via its dedicated sales team and distribution network. Spetec Injection Resins find their use in the waterproofing of below grade structures and in the conditioning of soils and substrates. A team of specialist engineers and technicians are the backbone of the support group that can assist our clients worldwide in finding solutions to their waterproofing problems. The success of its growth is primarily the result of this intense interaction between its clients and its team, combined with first class products and innovative technical solutions. *Booth #200*

THE ROBBINS CO.

The Robbins Co. brings 60 years of tunnel boring experience to its utility tunneling product line, which includes

Small Boring Units (SBU-A), Motorized Small Boring Units (SBU-M), Rockheads (SBU-RH) and



the innovative Remotely-Controlled Motorized Small Boring Unit (SBU-RC). Available from 30 to 36 in., the SBU-RC is ideal for mixed ground and hard rock applications with laser-guided steering and vacuum spoil removal. Robbins SBUs are a proven solution that provide the most time- and cost-effective way to bore through difficult ground for utility installation projects. *Booth #325*

R.S. TECHNICAL SERVICES

A cost-effective configuration for pipeline contractors and municipalities alike,



R. S. Technical Services' inspection system features cutting-edge, single conductor technology — cameras, transporters, lateral inspection systems, sonar and laser profilers and more can all be easily and precisely operated with one single conductor cable. RST's true "plug and play" components can be combined with existing systems, without the need for additional system controllers or upgrades. The Ford Transit is available with either a diesel or a gas engine and offers a compact footprint for ease of driving and maneuverability in tight access areas or on narrow roadways, with a budget-friendly price point for reducing fleet lifecycle costs. The wagon area features full height rear doors and provides ample room for a spacious, ergonomically planned workspace. The Ford Transit can accommodate custom options such as extra storage, countertops, power sources, safety lighting, air conditioning, heaters and floor coverings. RST's interior installation configuration is customizable to each individual customer's needs. *Booth #121*

RS TECHNIK

RS Technik is a complete solution provider for the repair of potable water and sewer system pipelines. For more than 15 years, RS Technik has worked with cities, contractors

RS Technik

and engineers throughout North America to understand their unique challenges for pipeline rehabilitation while minimizing environmental, social and economic impact. RS Technik develops custom solutions based on CIPP technology for water main, force main, gravity sewer pipe, lateral, and sectional/point CIPP repairs. Strong industry relationships allow RS Technik to offer a comprehensive family of high performing materials, precision equipment and custom-engineered solutions. Intensive training and support help ensure successful applications and long-lasting repairs, with repeatable results. *Booth #800*

SAUEREISEN

Sauereisen continues to innovate with materials and application methods for the wastewater industry. Its materials prevent corrosion to potentially vulnerable concrete and steel infrastructure, and prohibit water inflow and infiltration, a prevalent problem in wastewater collection systems. Since entering the wastewater market more than 30 years ago, its credibility continues to grow. Sauereisen is positioned to lead with economical, user-friendly coatings and linings technology. These incorporate organic polymers are specifically formulated for the municipal and industrial wastewater environments. Sauereisen — thorough our understanding of the microbiologically induced corrosion process, is a key to differentiating our linings from others. It has maintained its focus on why such materials are needed in the first place, and that corrosion-resistance is the most critical factor in predicting the long-term success of a material in a chemically aggressive environment. *Booth #424*



SEKISUI SPR AMERICAS LLC

SEKISUI SPR has extensive experience within the pipe infrastructure industry, and has developed a range of market-leading products for trenchless pipeline rehabilitation. The SPR process offers wonderful environmental and cost-effective advantages as it allows rehabilitation



through manholes instead of the dig-and-replace method. SEKISUI's featured SPR EX liners can structurally rehabilitate brick, concrete, glass reinforced plastic or corrugated metal sewer and stormwater pipelines with diameters from 6 to 42 in. The plastic profile that forms the liner is provided in a range of sizes and thicknesses. SPR EX is a great alternative because it eliminates the chemical process on-site. *Booth #621*

SOURCE 1 ENVIRONMENTAL

Eliminate infiltration by creating point repairs with Source One Environmental's heated packer, The Phoenix. By using The Phoenix, your business will save 50 percent of cure time to increase total effectiveness during every season. The Phoenix is a packer with an internal heater powered by 230 V or 110 V, ensuring full control of the hardening process regardless of the outside temperature. The pre-programmed digital



display on the heated control unit shows the actual temperature of the packer, allowing you to regulate the entire curing process and increase daily work capacity. The Phoenix installs like the Standard PipePatch system to create structurally rehabilitated spot repairs in sanitary sewer and storm water applications. Working through summer and winter conditions, its high quality and effectiveness in the field makes this product unique and will give your business a competitive edge. *Booth #415*

THE STRONG CO.



The Strong-Seal System offers a complete family of cost-effective engineered products, specifically designed to rehabilitate municipal concrete and masonry structures and effectively stop inflow, infiltration, and exfiltration. The Strong Co. has recently introduced Strong-Seal Storm Seal. A specially formulated, fiber reinforced, cementitious mixture designed for lining interiors of corrugated metal pipes, culverts, concrete pipes, catch basins and other storm water structures. This product is centrifugally cast using the Strong-Seal System Mixer, Pump and Spinner. It may also be sprayed manually. *Booth #102*

TENBUSCH INC.

Tenbusch Inc. manufactures custom underground equipment for tunneling and pipe-jacking applications. Equipment



manufactured includes: tunnel boring machines (TBM's), box culvert tunneling shields, auger-boring tunneling adapters, custom pipe-liner handling equipment, conveyors, hydraulic power units (HPUs), and lubricant systems. Tenbusch can supply individual components or complete integrated equipment systems. *Booth #334*

TT TECHNOLOGIES

TT Technologies will be displaying its full line of trenchless piercing tools, pipe ramming tools and pipebursting tools, at No-Dig 2016. Attendees will be able to see the complete line of trenchless equipment including the Grundoburst static pipebursting system and Grundocrack pneumatic pipebursting tools. The Grundoburst static pipebursting system utilizes a specially designed bladed cutter head to make bursting ductile iron and steel pipe possible. The Grundoburst systems range in size from 45 tons to 287 tons of pullback force and can be used to burst pipe



from 4 to 48 in. Grundocrack pneumatic pipebursting tools ranging in size from 5- to 24-in. diameter and can be used to burst pipe from 4 to 54 in. Grundoram pneumatic pipe ramming tools range in size from 5- to 32-in. and can be used to ram steel casing from 6 through 144 in. *Booth #501*

TULSA RIG IRON

Tulsa Rig Iron's MCS-425 is the drilling contractor's choice to pair with HDD drills using 20-ft drill stem and onboard 400- to 500-gpm mud pumps. This compact system boasts up to 400 gpm normal cleaning volumes and 500 gpm max. The MCS-425 features a 4,900 gal three-compartment tank, one three-panel linear motion scalping shaker, one five-panel linear motion combo shaker with one 10-in.



desanding hydrocyclone and six, 5-in. desilting hydrocyclones, an 80KW generator, adjustable while drilling shaker deck angle, and a new phenolic lined tank interior to minimize corrosion. The mud recycling systems are designed to be highly mobile and operator friendly. *Booth #928*

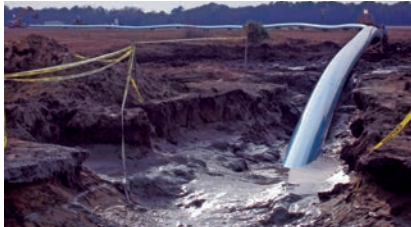
UNDERGROUND TOOLS INC.

Underground Tools Inc. (UTI) will be displaying its line of premium quality directional drilling pipe and HDD tooling at No-Dig 2016. UTI's comprehensive line of HDD downhole tooling features improved designs and includes drive chucks, starter rods, reamers, sonde housings, pilot bits, carriage chain and more. UTI offers drill pipe for nearly every make and model of drill rig. UTI's drill pipe is readily available, and made from top quality materials, with careful consideration given to precise threaded connections. All UTI products are backed by the industry's most knowledgeable technical support team. *Booth #120*



UNDERGROUND SOLUTIONS INC.

Underground Solutions Inc. (UGSI) provides infrastructure technologies for water, wastewater and power cable conduit applications. UGSI's Fusible PVC pipe prod-



ucts available in diameters from 4 to 36 in., including Fusible C-900, Fusible C-905 and FPVC, utilize patented technology to produce a fused monolithic, fully-restrained, gasket-free, leak-free piping system ideal for trenchless — HDD, pipebursting and sliplining — or conventional open-cut installations. The combination of standard fittings, as well as less weight and more flow for a given pressure class versus other thermoplastic pipes, ensure that Fusible PVC pipe brings greater economy to most pipeline projects. *Booth #601*

VAC-TRON EQUIPMENT

Vac-Tron Equipment is excited to introduce the new HTV PTO (Power Take Off) Truck Series (patent pending). The HTV PTO Truck is a new series of PTO truck driven systems available on Ford or Freightliner chassis. The full line of the HTV (HydroTruck

Vac) series has debris tanks ranging from 300 gal to 1,500 gal. The PTO of the truck drives positive displacement vacuum blowers that produce 1,000 to 3,000 cfm. These units are standard with a high-pressure water



system, full hydraulic rear door, reverse pressure, and the patented Big Red filter housing that cleans the air down to 0.5 microns (best in the industry) before it passes back through the vacuum pump. Air compressors and Hydraulic booms are also available on the HTV series and the truck lets you pull other equipment to the jobsite. *Booth #930*

VERMEER

The Vermeer D23x30 S3 Navigator HDD's carriage speed of 206 ft per minute, rotational speed of 219 rpm and enhanced rod breakout efficiency helps contractors install more linear feet per day. It also offers a ground tracking speed of up to 3.3 mph to help contractors get from one project to another faster. With a 99 dBA guaranteed sound power level and an operator ear rating of 78.7 dBA, the D23x30 S3 is one of the quietest drills on the market. It is powered by a 100-hp, liquid-cooled, turbocharged diesel Deutz TCD 3.6L4 Tier 3/ Tier 4-compliant engine. The D23x30 S3 has 24,000 lbs of thrust and pullback and 3,000 ft-lb of rotational torque. InSite Productivity Tools offer a set of applications to help underground contractors better plan, map, produce, invoice and manage HDD projects. InSite Fleet, InSite Fleet Edge, InSite Projects, InSite Mapping, InSite BoreAid Design Tool and InSite BoreAssist can be used individually or work together seamlessly. *Booth #301*



VYLON PIPE

Vylon Slipliner Pipe is used for the rehabilitation of existing sewers. Product sizes are available in 21- to 54-in. diameters including 32- and 38-in. pipe. Its flush bell design allows for easy



installation in live sewers with typical installation speeds of three minutes per segment length using a simple cable and pulley system. Because the need for bypass pumping is eliminated, the cost and disruption related to other rehabilitation methods is eliminated. Vylon Slipliner Pipe should be your first option to consider when evaluating your rehabilitation needs. Vylon 75 Pipe is also available to meet the growing demand for higher performing sanitary sewer pipe for new construction. See samples of both at the 2016 No-Dig Show. *Booth #933*

WYO-BEN

Wyo-Ben Inc. provides high-quality drilling fluid products and service throughout the world. Wyo-Ben's products are the innovative results of field driven solutions. Our knowledgeable customer service, research and sales people are able to bring industry-leading products to the market place by being dedicated to the customer's goals. One such product is the new WYO-LUBE RR. A premium drilling fluid lubricant designed for HDD, rotary drilling and mining industries. WYO-LUBE RR reduces torque, increases penetration rates, extends the life of tooling and mixes easily all while not being affected by brackish or harsh water conditions. For more information on the WYO-LUBE RR and any other of the WYO-BEN family stop by the Wyo-Ben booth at the 2016 No-Dig Show. *Booth #431*



XYLEM

The Flygt 3127 pump is a state-of-the-art wastewater pump. It delivers sustained high efficiency resulting in lower energy and fuel costs while reducing unplanned downtime. Most



solid objects entering the Flygt 3127 pump will pass through the impeller between the impeller vanes. If an object gets caught on the leading edge of one of the vanes, it will slide along the backswept shape towards the perimeter of the inlet. Due to this mechanical self-cleaning design, a sludge concentration up to 8 percent can easily be pumped. The modular hydraulic design of this pump enables you to tailor the hydraulics to meet the requirements of virtually any application. Xylem's Flygt N-pumps are a reliable choice for both dry and submersible installations and are available for rent for sewage bypass applications. *Booth #413*

Old Mains and the Sea

On the Oregon coast, a Pacific Northwest rehab company proves reputation is built with results you can show.

By Jake Wells

Lincoln City sits above the pounding surf of the Oregon shoreline, with the mountains of the Coast Range looming dramatically behind it. For years, it's been a destination for inland vacationers, drawn by more than seven miles of beaches, outlet shopping, and a resort casino. Summertime visits see the local population swell from about 8,400 to more than 30,000.

Answering the sewage treatment needs of a population, this variable is a challenge, particularly when the local economy depends on pristine beaches. Lincoln City's wastewater department serves more than 5,100 customers with a collection system comprised of 74.4 miles of gravity mains, 11.25 miles of force mains and 28 lift stations — all feeding a treatment plant rated for 3.0 mgd. Given the City's uneven topography, this is no small feat — some effluent goes through five lift stations before reaching the treatment plant.

The sewer infrastructure itself dates back to the 1960s, with significant sections added during residential expansion in the 1980s. As that infrastructure ages and deteriorates, groundwater inflow and infiltration (I/I) occasionally overwhelms the system's carrying capacity, and chronically dilutes the capacity of the treatment plant. Just last December, heavy storms caused a sanitary sewer overflow



(SSO) of approximately 550,000 gals. To fight I/I, the City tackles lateral and point repairs on a rolling basis — one that allows continuous improvements without the red tape of extensive budgeting and bidding. A key ally in this fight is a company named Trenchless Pipe Repairs.

Seattle-based Trenchless Pipe Repairs (TPR) is a rehab contractor focusing on the residential, commercial and small mainline market segments. TPR was founded 2011 by Nick Patrick, who had a decade's previous experience in sewer rehab as CIPP manager for Applied Professional Services, president at Insta-Pipe Inc. and CIPP trainer for Northwest Trenchless Services. The company has carved a niche in the Pacific Northwest performing residential and commercial lateral rehabilitation, as well as sectional relining, lateral connection relining and

pipe inspection for municipalities. Depending on the needs of a job, TPR employs Perma-liner Industries solutions for sectional lining, lateral lining and full-length CIPP, and Interfit USA connection liners for lateral connections.

On a cold January day, a TPR crew finds themselves a block from the beach, setting up to perform a series of mainline CIPP repairs in a quiet residential community: one Interfit liner and two sectional liners. The sewer lines had just been jettied by the City.

"The first part of any rehab job is reconnaissance," says TPR crew supervisor and CIPP lead James Tryon. "That means inspecting the pipe to document the defects, and then properly calibrating our repair."

Mike Wasmund, the crew's inspection specialist, rapidly deploys an Envirosight

ROVVER X inspection crawler at the upstream manhole and heads to the location highlighted on a copy of the town's plans.

"Pre- and post-inspection is essential," says Tryon. "It's how we prove the value of our work to our customers, and it's essential to our own internal quality control processes."

As Wasmund captures video and enters defect codes into the ROVVER X's handheld touch screen controller, Tryon explains, "Once we televise the line and enter our observations, generating a finished report is practically automatic. That report is given to the customer, but we also reference it for decisions that are essential to our work: the size of the patch, exactly where to place it, the angle of the lateral connection, whether flow requires bypass-pumping, any dimensional anomalies, and how to adjust cure time to compensate for the cooling effect of inflow."

For large mainline CIPP outfits, it's easy to keep an inspection truck busy among several active relining crews in a single area. For this crew, staying productive and profitable means having full inspection capability without a lot of overhead. ROVVER X solves that challenge. The crawler system's compact, three-component design stows neatly in a corner of Tryon's pickup bed, and runs off a handheld, 2,000-watt Honda generator.

"We're an agile crew, so we didn't want a system that requires a dedicated truck," says Tryon. "But we also didn't want to compromise on functionality. Our ROVVER X gives us inspection capability in lines up to 48 in. and at distances up to 1,000 ft, yet we've been able to deploy it on a small ATV for easement work when we need to."

TPR purchased the ROVVER X two years ago. Before that, the company subcontracted inspection work. "Subcontracting helped us stay lean in the beginning, but it often tied our hands," Patrick recalls. "It's hard to be responsive when you have to schedule inspections, and at our tier of the market, many jobs require us to turn on a dime."

TPR's crewmembers wear several different hats as they work to complete the repairs. Likewise, they depend on their crawler to perform more than just inspections. "Sometimes we push in packers, other times we winch them into place," says Wasmund. "When winching, ROVVER X is our go-to tool for threading lines."



Trenchless Pipe Repairs captures video and enters defect codes into the ROVVER X's handheld touch screen controller. Once the lines are televised and the crew's observations are entered, a finished report can be generated.

Wasmund pilots the ROVVER X to the downstream hole, attaches the threading line and reverse crawls to the upstream manhole, where the crawler is extracted and the winch line is then dragged back through the pipe by the threading line. "Nobody likes to crawl backward, but this crawler makes it painless," he says. "The reel automatically manages cable tension at all times, so there's no slack for us to drive over. And for extra security, the crawler's built-in rear-facing camera gives us visual assurance we aren't going to get tangled up in cables or obstacles. That camera has saved my neck several times."

With the packer winched into place and inflated, the crew wastes no time as the Interfit liner cures. They prepare a 4-ft sectional liner to be installed at the interface between the open manhole and an 8-in. upstream line. "In our business, we seldom do the same thing twice in a row," says Tryon. "[Patrick] likes challenging applications."

He rattles off specialty jobs: ballast ducts on an ocean vessel, concrete-encased steel air ducts, lateral relining performed via a cleanout. "Needless to say, we have to be versatile," he continues, "and the crawler helps with that. We can quickly modify it to inspect pipe from six inches all the way up to 48. Once we had a job in 5-in., so EnviroSight sent us the

ROVVER X 95 crawler — it just connected to our existing cable reel, and allowed us to do a complete pan/tilt inspection."

With the Interfit liner completely cured, the crew deflates and extracts the packer. The moment of truth comes when Wasmund returns with the crawler to find a flush, perfectly aligned, fully cured lateral connection. He documents the result with the same attention to detail, then extracts the crawler from the line. "Over the years, visual feedback from this crawler has really helped us master our craft," says Patrick. "And the reports it generates have quickly helped us build a solid reputation in our market."

Amidst the din of crashing ocean waves in Lincoln City, it's hard not to appreciate the persistence of water. That same persistence makes inflow and infiltration an ongoing struggle for municipalities like Lincoln City, whose only option is to answer the ravages of time and the elements with vigilant maintenance. Lincoln City trusts Trenchless Pipe Repair for rehab work, and that trust is built on inspection reports that demonstrate the quality and necessity of the crew's work. And for Trenchless Pipe Repairs, that trust is the most gratifying aspect of sewer rehab — even when it's no day at the beach.

Jake Wells is director of marketing at EnviroSight LLC.

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