McWANE DUCTILE PROJECT PROFILES  Pg. 8

Pg. 6  Hydrostatic Testing: Preparing/Completing a Successful Test
Pg. 14  Ask the Ditch Doctor

McWane Ductile

THE 18-INCH TRANSMISSION MAIN STORY  (PG. 4)
Dear Readers,

Welcome to the Winter edition of Modern McWane. We hope that all of you had a wonderful and relaxing holiday season with your family and friends. Spending time together in celebration is what matters most this time of year and helps create the special memories and experiences that are passed down from generation to generation.

Ringing in the new year is the time when we reflect on the year that passed and plan for the year ahead. Most of you are probably busy now preparing for and participating in planning meetings where the performance of the prior year will be reviewed and the goals for the upcoming year will be set. It is also a time of year where we recognize friends and coworkers who have retired and welcome new staff members to our team.

From McWane Ductile, we introduce two new personnel who have joined our Sales and Marketing teams. Josh Baker joins the South team as a sales representative covering Tennessee and parts of Georgia. Andrea Kubik joins the sales operations department as a marketing specialist, bringing 25 years of experience to this position. You can learn more about Josh and Andrea on page 3.

In this issue, we have two interesting feature articles. Bert Weiss, recently retired from the City of Hayward, California, provides a unique recounting of a bad day that could have been disastrous if not for the material choice that had been made for that installation. Jerry Regula, Product Engineer for McWane Ductile, offers a thorough practice and procedure writeup on how to best prepare and execute a successful hydrostatic pressure test.

As always, we have included Ditch Doctor segments written in a fun, yet informative manner for our readers’ enjoyment. The Project Profiles section offers highlights from several key projects across the United States where McWane Ductile and our valued partners worked to ensure those utilities experience the value of making an Iron Strong material choice to benefit the generations of customers that follow.

Speaking of local choice, the American Chemistry Council and the PVC pipe industry are continuing their lobbying efforts to restrict what you choose to put into your utility system. Efforts have once again been initiated within state governments and federal agencies that would require utilities to include PVC in all project specifications. This type of legislation would impinge on the knowledge and experience of water industry professionals to select the construction materials best suited for a project.

This would also force them to choose cheaper and less durable materials in their place. If you would like more information on how to combat these efforts, please reach out to your local McWane representative listed in the back of this publication.

Finally, as we begin 2019, we want to thank our readers and customers for their suggestions and support over the past year. Engagement with you, our customers, is what Modern McWane is all about. Here’s to hoping that we all have a great 2019.

Stuart Liddell  
Sales Operations Manager  
Sales Operations Department

McWANE NEW HIRES & PROMOTIONS

Josh Baker
Josh Baker is a 2005 graduate from Trevecca Nazarene University with a B.A. in Business Administration. Prior to McWane, Josh spent the past year in the hydrant and valve industry with American AVK. There, he was responsible for sales in Tennessee, Kentucky, Indiana, and Michigan. Prior to that, Josh spent six years in the inland barge manufacturing industry with Trinity Industries. Josh currently resides in middle-Tennessee with his wife Stacy and their three children, Mackenzie, Grant, and Bella. Mackenzie is enrolled in her first year at the University of Tennessee where she is studying law. Grant is in his eighth grade year and plays basketball and baseball. Bella is in the second grade and enjoys horseback riding and playing the piano. Josh and his family enjoy life on their family farm and spending time outdoors. They all look forward to their new journey with McWane.

Andrea Kubik
McWane Ductile welcomes Andrea Kubik as our new Marketing Specialist. Andrea received her B.A. in Visual Communications from Ohio Dominican University in Columbus, Ohio. From her previous roles, Andrea brings nearly 25 years of experience in marketing, communications, public relations, and project management. She and her two sons, Joe and Luke, live in Newark, Ohio. They enjoy spending time outdoors, camping, Jeeping, playing golf, and staying active.
The transmission main shown in the photos is in a large open field that is being developed. In the process of doing the rough earthwork, the D8 dozer with its five-foot-long ripper tooth was plowing the area so that scrappers could eventually move in and recontour the property. One late morning, I got word that the earthmoving contractor hit our transmission main. My stomach turned because it is one of two feeds that supplies water all the way up the hills of Hayward in a series of 250-foot lifts (elevation gains). The thing that bothered me the most about the hills of Hayward is that I used to be a fireman, and I knew the amount of water pressure needed. Our transmission main line had about 135 psi, helping clear a portion of the pipe, and welded. The pipe was exposed quickly because the distance to either side with a segment needing to be cut and welded. The pipe was exposed quickly because the line had about 135 psi, helping clear a portion of the pipe, and the developer had the earthmoving equipment on site. The field was a mess, but at least the pipe was exposed. I was about to start the miserable task of finding pipe when I got word that the pipe was ductile iron, which made replacing it a much more feasible task.

I got word that the pipe was ductile iron, which made replacing it a much more feasible task. The worst thing about repairing the welded steel pipe is that process is time consuming and prone to missing a spot, which means you suddenly have a corroded hole leak in 4 to 15 years — and then the repair process starts again. Plus, the repair time would take days, unless you expedited the process at a cost of five times the expense. Because the pipe was hit by a dozer, I knew the hole wouldn’t be small and would most certainly have a significant area around the hole/tear that is deformed, meaning the mortar lining would be shot for some distance to either side with a segment needing to be cut and welded. The pipe was exposed quickly because the line had about 135 psi, helping clear a portion of the pipe, and the developer had the earthmoving equipment on site. The field was a mess, but at least the pipe was exposed. I was about to start the miserable task of finding pipe when I got word that the pipe was ductile iron, which made replacing it a much more feasible task. I asked my folks to splice in a section of pipe or an inferior set of butt straps that can also be used to splice in a section. The second option would never be tolerated in most of the industries that use steel pipe, and it would require a hand hole to be added so that someone could attempt to mortar coat the interior of the pipe in the repair area.

The disadvantage is if the hole is large, it would likely require either a superior, but very time-consuming, full penetration butt-weld to splice in a section of pipe or an inferior set of butt straps that can also be used to splice in a section. The second option would never be tolerated in most of the industries that use steel pipe, and it would require a hand hole to be added so that someone could attempt to mortar coat the interior of the pipe in the repair area. The worst thing about repairing the welded steel pipe is that process is time consuming and prone to missing a spot, which means you suddenly have a corroded hole leak in 4 to 15 years — and then the repair process starts again. Plus, the repair time would take days, unless you expedited the process at a cost of five times the expense. Because the pipe was hit by a dozer, I knew the hole wouldn’t be small and would most certainly have a significant area around the hole/tear that is deformed, meaning the mortar lining would be shot for some distance to either side with a segment needing to be cut and welded. The pipe was exposed quickly because the line had about 135 psi, helping clear a portion of the pipe, and the developer had the earthmoving equipment on site. The field was a mess, but at least the pipe was exposed. I was about to start the miserable task of finding pipe when I got word that the pipe was ductile iron, which made replacing it a much more feasible task. I asked my folks to splice in a section of pipe or an inferior set of butt straps that can also be used to splice in a section. The second option would never be tolerated in most of the industries that use steel pipe, and it would require a hand hole to be added so that someone could attempt to mortar coat the interior of the pipe in the repair area.

Once the materials arrived on site, my team completed the entire repair in three hours — start to finish. If this were a C900 pipe, the pipe would have shattered, and instead of having a hole in the pipe that already released enough water to be a bummer, it would have been a full break and drained a significant part, if not all, of my 4-million-gallon reservoir that the transmission main feeds into. The damage to the construction site would have been catastrophic as the high-pressure water would become a massive hydro excavator. If it were a bar-wrapped cylinder pipe, I would have had to order custom transition coupling that would cost me days and many thousands of dollars in shipping and expedited fees alone, and then take 10-plus hours to repair the fragile pipe.

This news meant that I now had a fighting chance to find a piece of ductile, the solid sleeves and mega lug kits that I needed laying around that day. I immediately called my beloved acquaintance, Scott Silverthorn, Municipal Supply sales guy extraordinaire, and asked him to find the parts I needed. While I didn’t have the materials in his yard, it took him less than half an hour to locate the materials at another Bay Area water agency. Within hours, the materials were being picked up from across the bay and delivered to me. In the irony of ironies, the pipe and fittings came from my former employer, North Coast County Water District!

When I arrived on site, I noted the damaged section of pipe. Ductile iron is wonderful because it is generally tougher than Superman’s knee cap, but if it yields, it does so in a very localized area. The areas to the immediate upstream and downstream portion of the damage were perfectly intact. The mortar lining was even remarkably intact in the areas immediately adjacent to the damaged section. In fact, if I had a repair clamp, I could have easily thrown that around the pipe and had a legitimate fix. Because I had the pipe, I could just as easily do a full repair in very short order with nothing more than a couple of gas-powered saws, ratchet wrenches, open-end wrenches, and minimal skill sets. If you can read a tape measure, make a cut with the saw, and tighten bolts, you can make a 100 percent perfectly legitimate 100-year repair on the pipe.

Once the materials arrived on site, my team completed the entire repair in three hours — start to finish. If this were a polyethylene pipe, it would have drawn itself down and necked down to some strange OD for a very large section of the pipe, and the repair couldn’t have been done in this amount of time. If this were a C900 pipe, the pipe would have shattered, and instead of having a hole in the pipe that already released enough water to be a bummer, it would have been a full break and drained a significant part, if not all, of my 4-million-gallon reservoir that the transmission main feeds into. The damage to the construction site would have been catastrophic as the high-pressure water would become a massive hydro excavator. If it were a bar-wrapped cylinder pipe, I would have had to order custom transition coupling that would cost me days and many thousands of dollars in shipping and expedited fees alone, and then take 10-plus hours to repair the fragile pipe.

The bottom line is that the ductile pipe made this bad news story turn into a minimalistic bump in the road in the water world of Hayward!
H Y D R O S T A T I C T E S T I N G
PREPARING/COMPLETING A SUCCESSFUL TEST

BY: JERRY REGULA, PRODUCT ENGINEER (MD)

PREPARING/COMPLETING A SUCCESSFUL TEST

HYDROSTATIC TESTING

Hydro testing a new water line essentially begins during the design phase. Understanding testing factors during design will enable the water professional to prepare for obstacles that may arise during the testing process. Dinesh Paliwal said, “Problem-solving is essential to engineering. Engineers are constantly on the lookout for a better way to do things.” Test requirements are set by considering the following: Flow/volume demands, size and length of pipe, total overall difference from the low to highest elevations, and changes in elevation or “high spots.” The hydrostatic test parameters must be clearly defined during the design phase and stated in the project specifications. Guidelines set forth in the ANSI/AWWA C600-10 Installation Guide for Ductile-Iron Mains and Their Appurtenances as follows: “Test pressure shall be 1.25 times the operating pressure. Duration of the test is two hours. Special consideration must also be given when multiple piping products are used.”

A test pressure of 300 psi will be detrimental to weak materials, such as PVC rated at 125 psi, which also does not have a safety factor of 2 and surge allowance of 100 psi included in the design, compared to the stronger ductile iron that does. Any material not designed for the specific pressures should not be used and should be isolated from any section of a line to be tested at higher pressures.

EDUCATION

Complimentary on-site training services are provided upon request by McWane Ductile product engineers or sales representatives to ensure installation crews are empowered with the knowledge to complete the process. Engineering professionals often include on-site training by the manufacturer in the project specification to ensure training is completed. Utility installation protocols established by the safety, sanitary, and public health codes state that external factors must be isolated or removed to ensure a proper test is performed. There is also a benefit document standards compared to word-of-mouth training. How many times in your life have you been taught something important by someone who had never done it before? The tobacco industry spent millions promoting its product as safe. If you had been taught to smoke at an early age before all those studies, you would have had a hard time unlearning the behavior.

Testing protocols require the knowledge to properly complete the process. The McWane product engineers have decades of field experience. On-site technical services are also provided at no charge by highly qualified product engineers who have decades of field experience.

TESTING

ANSI/AWWA C600-10 Installation Guide for Ductile-Iron Mains and Their Appurtenances

HYDROSTATIC TESTING

WARNING: The testing methods described in this section are for water-pressure testing only. These procedures should not be applied for air-pressure testing because of the serious safety hazards involved with compressed air. Also, pipelines intended for air-pressure testing should also be generally tested with the backfill in place.

We recommend using hydrostatic test procedures for all water lines if possible. The dangers of compressed air cannot be overstated. Think about it, you have installed a water line — test with water. If, as a last resort, testing with air is the only option, there are items of concern. Two to four psi is all that is required for an air test. The dial on the gauge must be in one psi increments. A pressure relief valve is to be set at five psi max to prevent over pressurizing. An example to compare water and air: fill one balloon with water and the second with air. Pop both balloons. The water balloon will collapse, whereas the air balloon will fly several feet when popped. Yes, a ductile iron cap is heavier than a balloon, which ultimately means it will do more damage when it lands. Work smart, work hard, and work safe!

CONCLUSION

There is a great deal of thought, preparation, and attention to detail involved with hydrostatic testing. Keep in mind there are documented procedures and knowledgeable McWane Ductile professionals who can assist you. Together, we are Building Iron Strong Utilties for Generations!
Louisville Water Company has excess water capacity, and for the past several years, has been forming agreements with other municipalities in the region to provide water. As part of its recent expansion, they bid a 24-inch transmission main to Shelby County.

On September 13, 2017, Louisville Water Co. opened competitive bids for a 24-inch ductile iron pipe water transmission main. With a bid of $12,680,000, Smith Contractors located in Lawrenceburg, Kentucky, was the low bidder and awarded the project.

“The Shelbyville pipeline is a key part of our regionalization strategy. The project meets a need for additional water in Shelby County, both for current use and to plan for growth. For Louisville Water, we have an abundant water supply and excess capacity at our treatment plants, so partnering with neighboring communities is a win for us all,” noted Kelley Dearing Smith, Vice President, Communications and Marketing at Louisville Water Company.

This pipeline project runs parallel to I-64 and has numerous road and stream bores. Two of these bores go under I-64 and have 24-inch TR Flex® pipe pulled through a 42-inch steel casing pipe. This project required 52,000 ft. of 24-inch pressure class 250 TR Flex® pipe and numerous 24-inch TR Flex® fittings. Louisville Water Co. required the entire project to be wrapped with V-Bio® poly-wrap. Using V-Bio® will add many years of service life to the ductile iron pipe.

Smith Contractors has been a very loyal McWane Ductile partner since the late 1980s, and we have completed many projects together. “We have had a great working relationship with McWane Ductile for many, many years, and they always provided us great service,” said Joe Smith, Vice President at Smith Contractors.

Treasure Lake is an 11-square-mile area in Sandy Township, Pennsylvania, that has approximately 3,800 residents. Aqua PA has taken great strides to improve the infrastructure in the western part of the state, with Treasure Lake being one of those focused areas. James Willard said, “The Treasure Lake system has the most leaks in any of our water infrastructure areas.” Along with stopping the leaks, Aqua was focused on health and safety when designing this infrastructure rehab project.

Designated pipelines will be rerouted to not pose any threat to the four dams that make up the two bodies of water. When the Treasure Lake water infrastructure system was first put in 40 years ago, it was not meant to handle fire suppression. One of the goals of this project is to be able to have the flow to handle fires without having to draw from the lake.

Aqua spent $2 million on the Treasure Lake wastewater system in Clearfield County, including $891,000 for repairs to its collection system, manholes, and the replacement of 30,000 feet of pipe in 2017. The Treasure Lake infrastructure improvement project is a 10-year project, with replacing and adding not only water mains, but also pump stations, tanks, and water treatment tanks. There will be new water transmission lines pulling from new sources of water and improvements made to the treatment of water. The majority of the ductile iron pipe will take three years to replace, but that is only around the perimeter of the two lakes. Several other side street water main replacements will happen over a 10-year period, with sizes ranging from 6 to 12 inches of ductile iron pipe. The ductile iron pipe will be replacing mostly PVC and some A/C pipe that has seen significant breaks over the last few years, which prompted this infrastructure overhaul. During the course of the project, approximately 100,000 feet of waterline will be replaced.
Forsyth County is one of the fastest growing counties in Georgia and possibly the nation. Small residential subdivisions are springing up in all quadrants as the county becomes a northern “bedroom community” to metro Atlanta industries. Highway 400 bisects the county and is a main artery into downtown Atlanta.

With this amount of growth, the demand for more water becomes a critical problem for a water purveyor and the reason why Forsyth County Water and Sewer Department began a phased upgrade to their water infrastructure.

Legacy Water Group was involved with several of these Forsyth County projects recently, where they installed 36-inch McWane Ductile iron pipe. Two crews operated simultaneously in different locations for most of the construction period, making supply of 36-inch ductile iron pipe to replace failing sections of old steel pipelines that were installed at the height of the Great Depression.

When the pipelines were first installed in 1934, a headline in a local newspaper dated Sunday, April 15 read, “You’ll Be Drinking North Slope Water in 3 Weeks, Realizing a 40-Year Dream.” Another headline stated, “Snows of Pikes Peak Send Pure Water to Colorado Springs via Big Pipeline.” The installation of this new line continues to deliver water from the north slope of Pikes Peak that began almost 85 years ago.

The pipeline carries water from the Pikes Peaks reservoirs to the Mesa Water Treatment Plant.

McWane Ductile recently worked on concurrent projects in Manitou Springs, Colorado: the Westside Avenue Action Plan (WAAP) and the 30-inch Raw Waterline Replacement Project with Colorado Springs Utilities. Both involved installing 30-inch TR Flex® ductile iron pipe to replace failing sections of old steel pipelines that were installed at the height of the Great Depression.

When the pipelines were first installed in 1924, a headline in a local newspaper dated Sunday, April 15 read, “You’ll Be Drinking North Slope Water in 3 Weeks, Realizing a 40-Year Dream.” Another headline stated, “Snows of Pikes Peak Send Pure Water to Colorado Springs via Big Pipeline.” The installation of this new line continues to deliver water from the north slope of Pikes Peak that began almost 85 years ago.

The pipeline carries water from the Pikes Peaks reservoirs to the Mesa Water Treatment Plant.

These two 30-inch lines travel through Manitou Springs, which is the gateway city to one of the most famous mountains in the world — Pikes Peak. At 14,115 feet, it is the most visited peak in North America.

David Yoder of Colorado Springs Winwater compliments the McWane Ductile team, stating, “Everything is good and delivering 10.6 million gallons per day through the two lines. Your service was crucial to my ability to deliver and be the hero many times over. The team is proud that with all the extra effort, long hours, and more rock removal than expected, the big 30-inch design-build job was a huge success.”

Back when the original lines were first installed, the project provided much needed jobs to the community. McWane Ductile is proud to be a part of building America by supplying the material to expand and improve the infrastructure we so desperately rely on. McWane Ductile was honored to partner with Colorado Springs Winwater and Wildcat Construction on this historic project — Building Iron Strong Communities for Generations.
Irwin Creek WWTP Rehabilitation Phase 2

The Irwin Creek Wastewater Treatment Plant is one of five Wastewater Treatment Plants that currently operate in Charlotte, North Carolina. Alongside Irwin Creek, you will find the Sugar Creek, McAlpine Creek, Mallard Creek, and McDowell Creek Wastewater Treatment Plants helping to protect and serve the Charlotte area.

The original Irwin Creek Wastewater Treatment Plant was built in 1927 at the same time as the Sugar Creek Wastewater Treatment Plant, which were originally built as twin plants. Once open, they had a treatment capacity of six million gallons per day and an average flow of about half that amount. At the time, these plants were considered modern marvels and were featured in a 1928 edition of Public Works Magazine.

Irwin Creek, which celebrated its 90th anniversary last year, is currently undergoing Phase 2 of an upgrade/rehab. Ulliman Schutte is the general contractor and has been tasked with replacing and upgrading significant portions of the aging infrastructure. The Phase 2 upgrades will increase the sustainability of the plant by increasing capacity to support proposed development in West Charlotte.

Ulliman Schutte is responsible for the installation of high-efficiency air blowers as well as completing major primary treatment, aeration, secondary treatment, and process pump upgrades. Ulliman Schutte will replace much of the process flow piping and add phosphorus treatment for better filtration of the plant effluent.

McWane Ductile is proud to partner with Ulliman Schutte and appreciates the opportunity to be part of the history surrounding the Irwin Creek Wastewater Treatment Plant.

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When it comes to Horizontal Directional Drilling, nothing is easy. Or at least that’s how it used to be. Today, HDD is as simple as the push of a button thanks to the McWane Pocket Engineer™. Designed to simplify the complex calculations needed to complete your drill-op, the Pocket Engineer compiles decades of field experience into one pocket-sized tool. Visit pe.mcwane.com or download the Pocket Engineer from the App Store or Google Play Store.

McWane Ductile is one of the largest manufacturers of ductile iron pipe, valves, and fittings. They are committed to providing high-quality products and solutions to their customers. Their products are used in various industries, including water, wastewater, gas, and more. They are dedicated to building iron strong utilities for generations.

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Dear Ditch Doctor,

We installed 500 feet of 30-inch pipe through a casing then discovered we cut a gasket at 140 feet. How do I repair this joint without pulling the pipe from the casing?

Sincerely,
Chuck from Chignik

Dear Chuck,

Grandpa used to plow the fields with a team of horses. Then came the tractor. Now there are GPS-controlled tractors that are extremely efficient and save an extraordinary amount of time.

New boltless restraint systems are far more superior in effectiveness while greatly reducing installation time. Money is time. Unless, of course, Buzz wants to extend your current installation into the next decade. Just curious...does Buzz have a cell phone?

Sincerely,
The Ditch Doctor

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Dear Larry,

I was interested in knowing why a hydrostatic test was definitely a bad day. Realizing the repair theory will make the bad day a really, really bad day. A good question would be why the joints were double-checked prior to entering the casing.

Just curious...does Buzz have a cell phone?

Sincerely,
Steve Philpott, Sales Representative

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