

Maine Water Environment NEWS



August 2016 • Summer

A Publication of the Maine Water Environment Association

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The Maine Water Environment
Association is pleased to present our

2016 Fall Convention

SUGARLOAF RESORT & CONFERENCE CENTER

Carrabassett Valley, ME

SEPTEMBER 14-16, 2016

Preregistration Deadline Sept 2!

The 2016 Maine Water Environment Association's Annual Fall Convention will be an exciting event. First, our association is celebrating our 50th Anniversary. Founded in 1966, our association has helped our members ensure first-class water quality protection across Maine. At the Fall Convention we will reflect on our shared accomplishments and look to the challenges we will continue to face into the future.

To help address these challenges, we have created a value-packed series of technical sessions full of current information. Many of the sessions have been arranged into "tracks" that will group similar topics and themes, which will allow a deeper immersion in specific topics of interest. These sessions will be led by industry experts and will further emphasize the many advances we have all achieved over the past 50 years.

To support the knowledge gained during our technical sessions, we will have over 60 vendors and service providers in our exhibit hall. This hands-on opportunity to explore the latest products and services will ensure that you remain ready to continue to deliver top quality collections and treatment services at your utility.

Following the sessions and vendor exhibit areas, we'll take some time to celebrate our 50th Anniversary. On Thursday evening, we'll have a casual celebratory event to where you can view photos from the past and present, network with colleagues, and maybe even meet a few new members. This down home event followed by a buffet cookout will be a highlight of the Convention.

We look forward to seeing you at what promises to be an opportunity to learn, expand your network of professionals, and to join in a celebration of MEWEA's 50th Anniversary.

Scott Firmin, Director, Portland Water District
2016 President, Maine Water Environment Association

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visit the MEWEA website at:

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Upcoming Executive Committee Meeting Dates:

Oct 14 Monthly Meeting/
Maine Municipal Association

Nov 18 Monthly Meeting/
Budget Workshop • Maine
Municipal Association

Operator Profiles

By Steve Lane and Matt Timberlake

Michael O'Connor began his career with the Old Town Water District in November of 2015. A graduate of Old Town High School in 2002, Mike attended Washington County Community College garnering an associate's degree in automotive technology. After graduation Mike began full time work with Sargent Corporation in 2004 and spent the next 10 years installing water distribution systems and sewer collection systems. After a brief stint with American Concrete Mike began working for the Old Town Water District.



Michael O'Connor

These previous experiences in the construction industry have been very beneficial to the Old Town Water District. Mike has stepped in his new position and has become an instant contributor and shows a keen interest in water utility operations.

Mike resides in Old Town with his wife Makayla and their dogs, Nick and Corona. They enjoy their off time at camp and on Bailey's Island in Casco Bay.



Paul Pomerleau

Paul Pomerleau is the vacuum services team leader for the Ted Berry Company and has been in the Maine waste water field since 1992. Paul is one of the hardest working people you will ever meet and is known for his big heart and even bigger smile. His day to day duties include coordination, scheduling and planning for six vacuum service teams working throughout New England and being a trusted resource and answer guy for many small utility systems in Maine. In addition to his duties with Ted

Berry Co, Paul is the collection system superintendent for the Town of Dixfield Sewer Department where he is responsible for 8 eight miles of gravity sewer, seven pump stations and various other infrastructure items.

Paul loves what he does and his "get it done" attitude is infectious. Everyone around Paul seems to pick up the spirit and "get the good work done." Matt Timberlake, Ted Berry co. President remarked "None of our 60 plus employees receives more positive feedback from customers

than Paul, I get calls letters, e-mails, and stories on a regular basis about the great job Paul does. It is one of the things I am most proud of as a business owner." "Paul was my first boss when I started working for the Ted Berry Company in high school. I learned so much from him then about developing a strong work ethic and doing the right thing. I still learn from him on a daily basis."

If you see Big Paul out and about, say "Hi" he is truly one of the unsung heroes of our profession. ●



Brunswick Sewer District summer interns: left to right, Renee Rossignol, Springfield College; Nolan Robbins, Univ of Maine; Nathan Vintinner CMMC; Logan Anair, Maine Maritime Academy; not pictured Stuart W. Kay IV Columbia University.

take a shower, drive the kids to school,
have a coffee, do the laundry, walk the dog...



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ON MY SOAPBOX: What Do You Take For “Granted?”

By Mac Richardson, Newsletter Editor

Note: The opinions, positions, and views expressed in any “On My Soapbox” feature are those of the author(s) and do not necessarily reflect the opinions, positions or views of the Maine Water Environment Association.

I suppose we are all guilty of this, but it came home to me in a big way when I was discussing the redwood forests of California with someone planning to visit the west coast. I grew up near one of the most magnificent groves of sequoia sempervirens, Big Basin State Park, and did not appreciate it until I moved away. How typical!

So what do we take for granted? Where do we fail to see our blessings? Allow me to offer a few that come to mind. First is the water we have here in New England. Is there anywhere on the planet that is blessed with the beautiful rivers and lakes we have here? I doubt it. I love the fact that within five miles of my home I can find literally dozens of places to swim in cool, clear, clean, natural waters. I can't think of another place in this country where I would be able to enjoy such abundance! Of course, if you work at a treatment plant, public works department, DEP, consulting firm or equipment supply company you can thank yourself for some of this blessing. I had to laugh a little when I heard on the radio that we are experiencing a drought in Southern Maine. We have no idea! Try experiencing a summer just about anywhere west of the Mississippi River and this dry spell of ours will seem trivial by comparison.

Water is not just for having fun in and on, it is essential for our very life and health. It is a “universal solvent”, a regulator of electrical charges and a carrier for oxygen and nutrients to the tissues of our bodies. It is as fundamental as it gets! We, as water professionals, owe it to ourselves and

our communities to celebrate our waters and to remind everyone how truly precious it is. Every time we turn the tap we would do well to recall how lucky and fortunate we are. Every day we “punch in” at work we should realize what a sacred trust we have been given.

What other blessings do we take for granted? For me, I have to say the people I work with have to be near the top of any list. My co-workers at the Lewiston-Auburn Water Pollution Control Authority are amazing. They come to work each day and make things work, get the job done, and rarely complain. Many days their job is hot (or freezing cold), dirty and often stinky. They never fail to rise to the challenges that come with this line of work.

At the risk of sounding a bit political, what about this country we live in? Especially in light of our Presidential nominees, it would do most of well to remember what a great, prosperous and free place we call home. Again, it would not take long for anyone of us to see our blessings more clearly if we were living in most any other place around the globe.

Day to day living can feel like a struggle. Serious, terrible, events and situations do confront us and our communities. Terrorism, mass shootings, intolerance and violence bedevil our existence today (as these demons have to one degree or another forever). It is a challenge to persevere in the face of these events. Our challenge, in addition to reaching out to those who have been closely impacted by these events, is to live GRATEFULLY. This is not an easy

task, but one which brings substantial rewards. It is the opposite of taking places, people and lives for granted. It is being aware of all the things in this life for which we should be thankful. As a down payment, consider sharing with someone close to you that you are grateful for who they are, for the world you share with them, and how they impact your life. ●



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This is your newsletter – if you have news you would like to pass along or an opinion to express that would be of interest to the membership of MWWCA we are always interested in receiving material and will make every effort to incorporate your submissions.

What are those Young Professionals Up to Now?

By Michael Guethle, Wright-Pierce

The Young Professionals Committee has been very active this year, and has many exciting events coming up this fall. Please keep in mind that the goal of the committee is to support the growth of young professionals within clean water environment industries, and as we like to say, there is no requirement to be young (or professional!) to be a committee member or attend one of our events:

- **Greenfest (9/10), 9A-3P in Monument Square, Portland:**
 - Please come and join! We are still looking for volunteers to help with the booth, for time slots of either 12-2, or 2-close.
- **Fall Convention (9/14-9/16)**
 - Look for us at the MEWEA Fall Convention! We will be raising money for our scholarship at the Golf Tournament, will be running Thursday's Vendor Raffle, and will be awarding this year's scholarship and YP Award.
- **Portland Green Drinks (10/11):** volunteers 5pm, participants 6pm – Urban Farm Fermentory in Portland.
 - Green Drinks is an organization that has a simple motive: Bring in 200-300 people who care about environmental issues, and then give an opportunity for a non-profit (MEWEA) to address their message to the entire audience. We could always use more volunteers!
- **Lewiston Green Drinks (11/16):** volunteers 4 pm, participants 5pm, Nov. 16.
 - Same as above, only in Lewiston exact location TBD.

If you'd like to attend any of these events, please e-mail committee chair Michael Guethle at michael.guethle@wright-pierce.com

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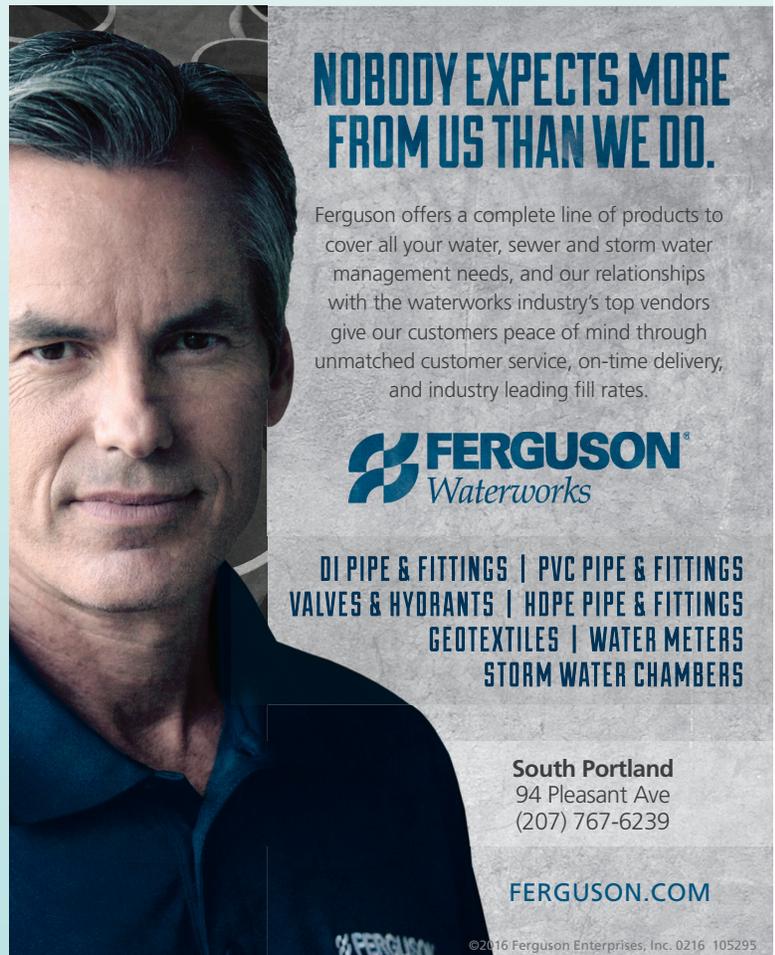
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Sanford Compost Facility Nears Completion

Andre' Brousseau, Sanford Sewerage District

Welcome Maine's newest compost facility! The Sanford Sewerage District has been discussing the idea for five years and composting should commence by the end of September. The facility's location had a six-month preload study which ended in December of 2015. Construction started on March 28th of this year and with excellent construction weather, our general contractor is well ahead of schedule. Currently the District has two employees who have been awarded certified composters status through the Maine Compost School as well as three operators with past experience in composting. The compost process will utilize the aerated static pile method to achieve vector/pathogen reduction and produce class A biosolids as specified in Federal 503 regulations and Maine solid waste rules, chapter 419. The biosolids will be loaded via front end loader and mixed with a 23-yard ROTO-MIX composter (Dodge City KS). The exact recipe has not been determined but will consist of bio-solids, wood ash and shavings. The mixed biosolids will be placed along a push wall and blowers will provide the air for the process by which naturally occurring bacteria heat the compost mix to a minimum of 55 degrees Celsius for three days or more to achieve vector-pathogen reduction. In addition to the compost facility the District has added a disposal pad for our vacuum/jet truck. Collection system debris and primary/septage screenings will be discarded into a roll off container to be hauled away for final disposal. Open house announcement will be coming soon!



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Nabbing Nitrogen in Casco Bay.

By Ivy Frignoca, Friends of Casco Bay

On a rainy July 10th at 10:10 am 93 volunteers spanned out across Casco Bay and the Fore River to collect a snapshot of nitrogen levels in the busy waters between Portland and South Portland. Unfortunately, due to relatively rough seas and the wet weather samples that had been expected to be taken by over 55 kayaks were suspended. The event was still a great success and was carried by local news sources. The data is expected to be a big asset as the Department of Environmental Protection further models the sources of nitrogen contributing to increased algal levels and acidification in the Bay. The Maine Water Environment Association was well represented by President Scott Firmin, Fred Dillion, Nancy Gallinaro, Charlene Poulin, Doug Romcarati and Mac Richardson. According to information from the Friends of Casco Bay, the default assumption for sources of nitrogen to estuaries in the United States is roughly 36% from human sewage/treatment works, 33% from non-point sources/runoff and 31% from atmospheric deposition.



MEWEA volunteers Doug, Nancy, Charlene and Scott ready to go



Ivy Frignoca outlines the sampling plan

You Left Us Too Soon

It is with gratitude and a touch of sadness we mark the passing of John Year. He was a unique individual often seen at MEWEA conferences sporting a big smile, ponytail and red sneakers. He was a sharp wit and an innovator, working for Wright Pierce in the 1990s and running a successful contract operations business with his wife and life partner, Melissa since 2001. He was a practical, hands on sort of Maine environmentalist. With a motto for his business "Close encounters of the t'rd kind", John knew how to light up a room and make people laugh. John, we miss you already!

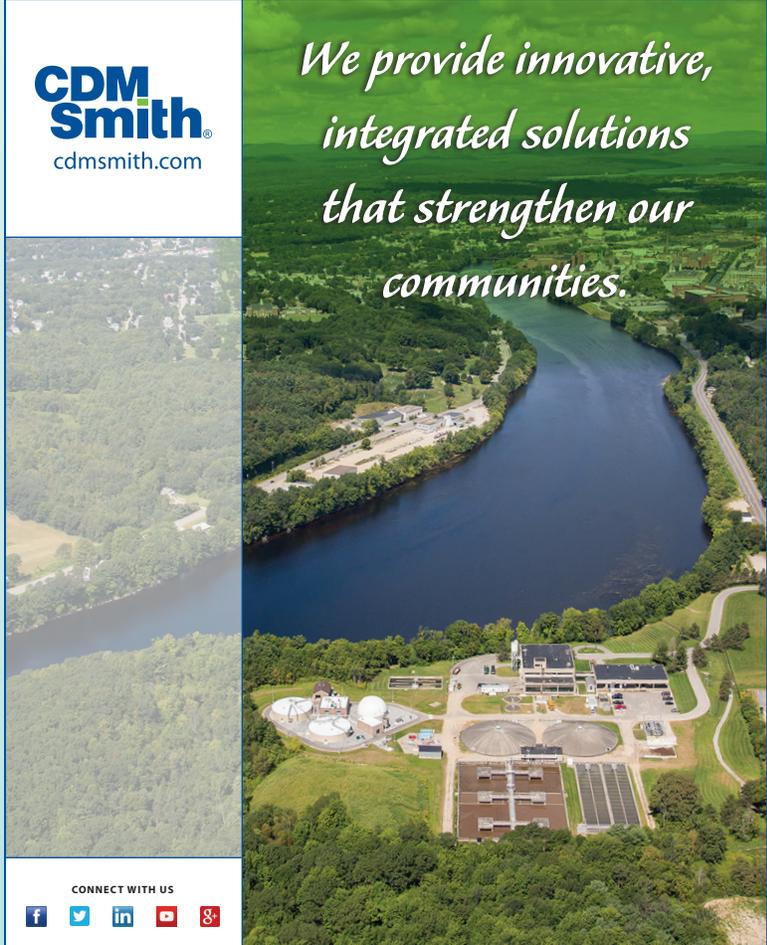
MEWEA E-Mail Database

All current members of MEWEA should receive periodic e-mails, which may include the most recent newsletter, conference and training announcements, or regulatory updates. If you haven't received any e-mails from the organization recently, you may wish to update your information in the distribution list by sending your current e-mail address to Joan Kiszely at jkiszely@memun.org. Don't miss out on the exciting networking and educational opportunities MEWEA provides!



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Transitioning from a Reactive to a Preventative O&M Plan for Sanitary Sewer Pump Stations

By Matt Timberlake

A sanitary sewer pumping station is a vital element of any community's infrastructure and a critical component of the wastewater collection system. Pumping stations are built when sewage must be raised from a low point to a point of higher elevation or where the topography prevents gravity flow.

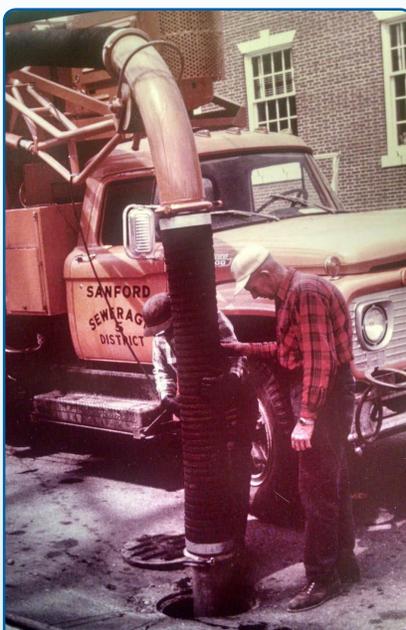
Different levels of O&M standards are necessary for large and small communities. Reactive maintenance methods involve crisis management and goals are often as simple as maintaining sewer flows inside the collection system. Preventive methods include scheduled maintenance and repairs throughout the system including all individual elements. Predictive management methods are an attempt to manage a system and its components based on historical data and its performance as it ages.

Let's look at how to take your sewer maintenance program from reactive to preventive, more specifically with the sanitary sewer pumping stations.

Getting started:

1. One of the biggest challenges to starting a preventive maintenance program is just that — getting started. Some of the hurdles municipalities face include:
 - a. Getting buy-in from management personnel and critical decision-makers
 - b. Assessing the abilities of in-house personnel and equipment
 - c. Evaluating contractors or supporting agencies
 - d. Developing written standard operating procedures (SOPs) for maintenance activities
 - e. Funding
 - f. Follow-through from workers and management staff members

One of the best starting points is with the U.S. EPA CMOM Program Self-Assessment Checklist, available on the EPA website. It is a relatively simple way to start your program and provides easy-to-follow checklists that can be modified or incorporated into a format your staff is comfortable with. If this is done collaboratively with management and operations staff it should be easy to collect a great deal of information with minimal effort and will almost



Maintenance of sewers in the day!



certainly generate discussion on how to move toward established goals.

Knowledge pays off:

Experienced and knowledgeable operators who understand how and where to troubleshoot problems run our nation's systems. Unfortunately, this knowledge and information is not always written down. Preparing a printed maintenance plan facilitates the capture and documentation of all those details as well as the institutional knowledge and experience that will be essential for a future maintenance program. Development of SOPs and checklist-style record keeping allows the collection system team to maintain a high level of service. Supervisors should periodically review maintenance activities and checklists to confirm the level of work meets SOPs.

Pump station plan:

A pump station maintenance program should be based on two primary factors: the manufacturers' recommendations and the pump station requirements.

Operators and supervisors develop pump station requirements based on operational observations of the pump station, and knowledge of local conditions, and experience. For example, if FOG levels are high in a commercial area, then maintenance activities should be adapted to best accommodate conditions in the field impacted by grease and associated issues such as clogging.

A standard weekly pump station inspection should include documentation of the following observations:

- The components comprising the alarm system, wet well controller, SCADA, telemetry and electrical system.
- The pump(s) shafts, bearings, packing, seals, suction and discharge pressures.
- The pump motors: temperature, amperage and voltage, coupling and alignment, vibration and noise. Oil levels and lubrication. Belt wear and tension.
- The condition of check valves, pressure relief valves and isolation valves and gates if present.
- Emergency generator or backup pumping equipment and appurtenances.
- Building and structure components including security, electrical, roofing and siding, ventilation system and lighting.

Cont'd on page 7

Work in Progress at the Treatment Works

Editor's note: This is a feature that I hope will be a regular in the newsletter. It is intended as a brief "snap shot" of what construction is going on around Maine. I hope it will be of some use to people so that experience and lessons learned can be shared. If you do not see a project here that should be included please get in touch with me by phone, e-mail, or passenger pigeon (OK, I don't really know how to use passenger pigeons – but it sounds like a cool idea!)

Wilton: Penta Corporation is working on upgrades that include converting aerated solids digesters to solids holding tanks, replacing the influent screw pumps, expanding the capacity of the rotating biological contactors, expanding the headworks to include new Huber screens and presses, followed by Parkson fine screens and two new secondary clarifiers. The project is approximately 50% complete.

PWD East End Plant: The Portland Water District is replacing its mechanical surface aerators with Turblex blowers and sanitaire fine bubble diffusers in all three treatment trains. The first train is

completed. When completed the system will offer energy savings as well as improved process and odor control.

PWD Westbrook Plant: The District has completed pilot testing and will be replacing its dewatering equipment with either a rotary press or a screw press, three manufacturers are still being evaluated.

LAWPCA : The Lewiston Plant has recently completed a project to replace 2 two meter belt filter presses with two FKC screw presses. Anaerobically digested cake dryness improvement from about 13% to slightly better than 20% has been seen.

Brunswick: The Sewer District is nearly half complete on a major upgrade that includes a reworked headworks with new septage receiving facilities, new Fournier rotary presses for solids dewatering along with improved odor control, a new 450 kw diesel standby generator, rebuilt laboratory and staff office space and shower facilities, and a complete SCADA system. 🌊

Capacity and Nitrogen Removal

By Paul Dombrowski, Woodard and Curran

In collaboration with a few of our colleagues from the Windsor Locks, Connecticut Water Pollution Control Facility (WPCF), we recently had an article published in the summer issue of the NEWEA Journal detailing a process improvement that simultaneously improved nitrogen removal and increased wet weather capacity of their biological treatment system. The approach taken at the Windsor Locks WPCF that we describe in the article involved making modest changes to the facility, which allowed for the use of two operating modes, combined with close cooperation with WPCF staff operators to define effective operating protocols to optimize process capabilities. Read on for a condensed synopsis, or find the full article in the Summer NEWEA Journal with a more detailed explanation of this project.

SOLVING WET WEATHER-RELATED NITROGEN LOAD ISSUES

The Windsor Locks WPCF was upgraded to secondary treatment in 1982, using the complete-mix activated sludge process. One of the challenges the facility regularly faced was the intermittent increase in flow it experienced due to unknown I/I sources during wet weather events. Though the facility undertook interim upgrades in 2002 in response to Connecticut's Nitrogen General Permit, which included converting its system to a serpentine-flow Modified Ludzack-Ettinger (MLE) configuration and adding Integrated Fixed Film Activated Sludge (IFAS) media to achieve nitrification and denitrification, the system wasn't as effective as hoped.

The town decided to complete a comprehensive facilities plan that would identify short- and long-term wastewater collection and treatment needs. Part of this effort included identifying an alternative method to increase the WPCF's wet weather capacity and improve nitrogen removal performance within the capacity of the existing process tanks. Since the flow increases from wet weather were generally short in duration, the facility realized a

flexible operating approach might be the solution to minimize their impact. After thorough evaluations of the plant's operations and available alternatives, modifications were completed that allowed use of a dual operating mode (DOM) process that involves switching from the facility's MLE mode to a contact stabilization (C/S) mode when additional wet weather capacity is needed.

Since installing the MLE configuration and implementing the DOM process, effluent total nitrogen at the WPCF has been reduced by more than 75%, and the total nitrogen load has been decreased below its Annual Average Nitrogen General Permit target level. All of this has also allowed the operators to test the limits of the facility's processes in ways that were previously not possible and has significantly improved wet weather capacity. 🌊

Transitioning from a Reactive to a Preventative O&M Plan for Sanitary Sewer Pump Stations

cont'd

- Odor control devices and systems, if present.
- Safety features such as confined-space entry equipment on site, air monitoring equipment, fire extinguishers, ladder, stairs or steps, emergency lighting, etc.

Additionally, operators should check the overall pump station and system calibration at least annually, which includes a drawdown test as well and a historical comparison of flow rate and discharge head to see if the force main requires cleaning or maintenance, or the pumping systems have wear causing a reduction in capacity. A systematic operation, maintenance, and rehabilitation program is an essential element in the management of a sanitary sewer pumping station. Hopefully these tips will help put your municipality on the right track to success. 🌊

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