FALL 2020

ifm CURRENTS

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ifm WATER CYCLE TECHNOLOGIES
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IFM Wins Safety Award

The Safety Recognition Award was presented to IFM by the Ohio Water Environment Association in the wastewater treatment facility category.

This award recognizes that IFM is safety minded and makes safety an important part of their organizational practices.

Team IFM is Committed to Protecting and Saving Water!

IFM Welcomes New Team Members

Beth Brown, Administration Assistant

Beth Brown has recently joined the IFM team filling the Administrative Assistant role in the McClure offices. With over 20 years of experience in various office environments she brings a great deal of knowledge to her position. In her free time Beth enjoys spending time with her husband of 18 years, Larry, who is a retired TPD police officer and Lucas Co. sheriff. Together Larry and Beth have 4 children and 10 grandchildren (all BOYS!). Beth is also a member of the Grand Rapids Arts Council and loves her 13yr. old Scottie dog, named Bubba-Sean.

Chelsea Palmer, Marketing + Communications

Chelsea Palmer is a local Henry Co. girl who was waiting for the perfect opportunity to transition her career in Marketing from Toledo/Perrysburg back to her hometown. IFM offered that opportunity and she is now our Marketing + Communications Specialist. Chelsea enjoys traveling, volunteerism, weekend on the Maumee River, and spending time with her Goldendoodle, Oliver. She recently purchased her first home in Napoleon and is excited to be back in the rural cornfields of country living, closer to her family and friends!

JOIN OUR TEAM

We are always looking for ambitious, intelligent individuals in the science field. If you're interested in saving the world with us – we'd love to talk to you!

For more information about IFM or interest in joining our team, please visit: www.ifmenviro.com or email ifminfo@ifmenviro.com

IN THIS ISSUE

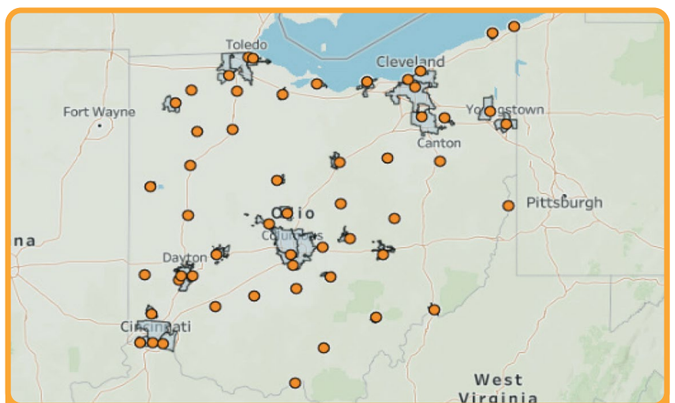
COVID-19 + WATER

Detecting SARS-CoV-2 in Wastewater: An Early Warning System for COVID-19

The water industry is joining in the valiant fight to help mitigate the spread of COVID-19. It has been recently discovered that wastewater testing can indicate a possible outbreak up to 7 days prior to visible symptoms. This testing is also referred to as wastewater-based epidemiology (WBE). University of Arizona, professor and OSU graduate Dr. Ian Pepper has been quoted saying "Sewage surveillance is a leading indicator as opposed to deaths, that's a lagging indicator. That's the last thing you see." He is an environmental microbiologist whose research has focused on the fate and transport of pathogens in air, water, soils, and municipal wastes. More recently, he has investigated the potential for real-time detection of contaminants in water distribution systems. Dr. Pepper is among many scientists who are helping develop and conduct this new innovative wastewater analysis through PCR testing.

Locally, Ohio has also developed a network across the state that are collecting study samples of wastewater to look for the presence of gene copies/ fragments of the virus that cause the disease. The initiative is a collaboration between the Ohio Department of Health (ODH), the Ohio Environmental Protection Agency (Ohio EPA), the U.S. Environmental Protection Agency (U.S. EPA), the Ohio Water Resources Center (Ohio WRC) at The Ohio State University. Other participating universities, include The University of Toledo, Kent State University, and Bowling Green State University. As the network expands, sampling and analysis will include other universities with laboratory capabilities.

Dr. Timothy Davis, an associate professor of biological sciences is leading the WBE study at BGSU. IFM Laboratory Analyst and BGSU Biology student, Lorna Ziehm has shown great interest in this new analysis. Dr. Davis and Lorna, along with other professors have hopes of finding ways for IFM to collaborate with this groundbreaking method of helping fight the spread of COVID-19.



IFM Serviced Wastewater Treatment Plant Locations and Boundaries

IFM Conducts Reverse Osmosis Pilot Study for Removal of BOD Waste Levels for a Manufacturing Client

IFM was recently asked by a long-time consumer products manufacturing client for help in reducing the Biological Oxygen Demand (BOD) from a waste stream at one of their facilities. The facility discharges to a Public Operated Treatment Works (POTW) with a BOD limit of 250 mg/L. On average, the facility's waste stream had a BOD concentration between 750-1,250 mg/L. The current treatment consisted of plate and frame filtration for sludge removal.

There are several methods for reducing BOD in waste streams. Feed water characteristics determine which method is most suitable and yield the best results. Some methods include biological, advanced oxidation, chemical precipitation followed by Dissolved Air Flotation, or Reverse Osmosis (RO). Each method has specific pros and cons that need to be weighed prior to deciding which is the correct application. The client and IFM selected Reverse Osmosis as the treatment method for the trial.

feed tank, 600 PSI RO system, and RO Permeate tank. Raw wastewater was pumped from the EQ tank to the Process tank to maintain a set volume. Water was then pumped to the RO system where it was repressurized to feed the membranes. After flowing though the membranes, the concentrate stream was recycled back to the process tank, while the permeate stream was collected in a separate tank. Operating in this fashion allowed the system to achieve the desired recovery over time without compromising the proper operating parameters of the RO system.

The study included two samples taken per run from raw, permeate and concentrated stream water and then analyzed for TSS, COD and pH levels at IFM McClure's in-house lab. Each trial performed showed successful results for all three parameters, exceeded the set goals. The trial also consistently achieved water recoveries up to 95% while maintaining BOD concentrations below the 250 mg/L requirement. Based on these results, it was determined that with proper operating parameters and cleaning procedures, RO is a viable option for long-term BOD reduction for this facility.

PROCESS #3 ANALYTICAL RESULTS

Parameter	Raw Results	Start Permeate Results	Start Conc. Results	Mid	Mid Conc. Results	End Permeate Results	End Conc. Results	End Tank Conc. Results
pH (S.U.)	7.2	6.1	7.5	6.3	7.5	6.4	7.5	7.6
BOD5 (mg/L)	475.0	9.5	815.4	14.1	1376.6	25.0	4787.8	3007.3
COD (mg/L)	1107	28	2026	37	4000	89	8860	7400
TSS (mg/L)	10.0	<4.0	6.5	<4.0	13.2	<4.0	116.0	79.0

Reverse Osmosis has several advantages which make it an attractive option for BOD removal. Typically, an RO system requires little operator interaction when compared to other methods, while still delivering consistent results. In many cases, the permeate stream produced by the RO system can be reused in other processes such as cooling tower makeup water.

The goal for this project was to achieve the highest possible recovery, while also meeting the required discharge limitations for BOD. The trial conducted by IFM involved an EQ tank, Process

Lab Samples of RO Treated, Permeate and Raw Water

This time of year is when we celebrate a holiday with a name that includes both Giving and Thanks. And despite what you have been thinking, we need to. The year 2020 has offered up some of the most daunting challenges.

- An economy that was doing so well that our growth was only held back by the lack of additional people.
- Then we get hit with an international pandemic. It started on a week that held a Friday the 13th, a full moon, and Daylight Savings kicked in! What did we expect?
- Record unemployment, lockdowns, stay at home orders, and masks.
- As essential workers we and others kept our jobs, but that in and of itself led to a different level of stress.

Truly unnerving and totally intimidating. But here we are. November of a year that we will all remember for a long time. Just about when I want to start a 'Woe is me' tantrum, I force myself to remember that my circumstances are in pretty good shape especially by comparison to many others.

- I am still gainfully employed, and it feels like I will remain that way at least for a while.
- My co-workers, colleagues, and friends are still employed. More good stuff.
- My Family (for the most part) has remained healthy and are as employed as they care to be. Another good one.
- My work family has remained mostly healthy (as have their families) and have gone out into the world and made safe water for untold numbers of families. Amazing!
- I could not be prouder or more thankful for having the opportunity to work alongside (though socially distanced) the HEROS of IFM!

Five bullet points, but I could certainly come up with many more.

As I shut down my cantankerous ruminations, I truly do have much to give thanks for.
Friends. Family. Colleagues. Health. A job. Remember to Give Thanks and count your blessings.

Wishing all of you a healthy and safe holiday season!

–RB

12th NEW WATERSHED UNVEILED!

IFM and The Northwestern Water and Sewer District (The District) were proud to recently unveil its twelfth WaterShed location in Northwest Ohio recently. The District, the Wood County Commissioners, Washington Township Trustees, clean-water partners Industrial Fluid Management (IFM), and Obe's Country Store celebrated with a socially-distanced event featuring The District's mascot, Drippy on Friday, October 16, 2020. The new WaterShed is located at the corner of State Route 65 and State Route 235, near Obe's Country Store.

Each WaterShed building is owned by The District and designed and serviced by local IFM Engineers and Operators. The WaterShed houses a reverse-osmosis, 9-step water treatment system and provides perfect tasting purified drinking water at a low price. The cost is 25 cents per gallon or $1.00 dollar for five gallons.

When asked about the unveiling of the new WaterShed, Neil Pry, IFM Director of National Accounts stated: "IFM is very happy to partner with the District to provide this 12th location for the community to have safe, affordable purified water."

Over a decade ago, The District and IFM began collaborating to build the WaterShed units as an alternative source of drinking water for residents in rural Wood County on private well systems with poor water quality. I guess you can say this partnership has made quite a splash with area residents loving it!

Since inception, total WaterShed sales have exceeded $1.5 million. This income is used to maintain the properties and invest back into The District's operations to continue producing affordable, high-quality drinking water to the local community.

Pictured Left to Right: Steve Powell, Washington Township Trustee, Sean Brennan, Jim Palmer Excavating, Inc., Neil Pry, IFM, Drippy, District Mascot, Megan Cartwright, IFM, Doris Harringshaw, President, Wood County Commissioner, Mark Sheffer, Chairman, District Board of Trustees, Ted Bowlus, Wood County Commissioner

EMPLOYEE CORNER

Meet Team IFM's
MATT FEDDERKE
CONTROLS ENGINEER

Matt joined IFM in November 2019 to fill a new company role as Controls Engineer. His knowledge and expertise in the electrical engineering field has made Matt a valuable asset to the IFM team. Matt enjoys a challenge and recalls he was most proud of his work on designing a large WWTP control system for a large solar manufacturer. IFM is privileged to have his knowledge to help set us apart from our competition.

Fun Fact–
Matt can play the piano!

Expert In:
Electrical Engineering: PLC & HMI programming, control panel design, and troubleshooting electrical systems.

Education:
B.S. in Electro-Mechanical Engineering, Miami University
A.S. in Automation and Controls, Northwest State Community College

Certifications:
Indusoft Certified System Integrator

Matt's Favs:
Spending time with his wife Heather, their bubbly 2-year-old daughter Delaney, and the family German Shepherd Kimber. He also enjoys getting out in his shop to work on old tractors.

IFM's Families are Growing!

IFM Engineering & Technical Designer Troy Houser and his wife Kelsey, welcomed their son on May 21, 2019. Roman is an active and happy little boy who is excited to fill his new role as "BIG Brother." Troy and Kelsey are thrilled to be expecting another baby boy to their growing family in March 2021.

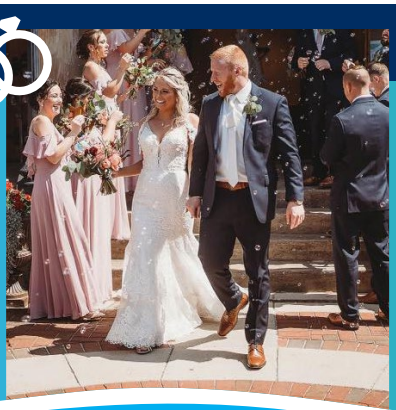
IFM Laboratory Manager Brittany Thome and Tyler Yeager welcomed 7lb., 12oz., 20.5in. Adaline Renee on November 9, 2019. Adaline is a smiley little girl who loves playing with animals but most especially their dogs!

IFM Operator Logan Wick and wife Samantha were blessed to grow their family last October with the birth of their daughter Wren. She loves watching her favorite movie, Shrek and playing with the family pets!

IFM Operator Preston Keener and wife Rachel welcomed their son named Roman in November 2019.

Newlyweds

IFM Project Administrator Megan Shaw was united in marriage to Devin Cartwright on August 22, 2020. The happy newlyweds also purchased their first home in Tiffin, Ohio the same month!



IFM CAD Engineer Tre Talley and his new wife Alyssa exchanged vows on August 23,2020 during an outdoor ceremony in Mount Gilead with their closest relatives and friends.