

# Florida Specifier



Practical Information For Environmental Professionals

Single Copy Price: \$5

December 2021/January 2022

Volume 43, Number 6

## A note to readers

As you may recall, I announced early this year that 2021 would be my last year of publishing the Specifier after well over three decades. At that time, there were no plans to sell. But in May, John Waterman purchased the paper, donned the publisher's hat and shifted me to the editor's desk.

This issue will be my last. However, the paper will live on ... Keep up the good work. Florida's environment needs you.

Mike Eastman

## Lake O nanobubbles 6

A pilot study using oxygen nanobubbles to destroy cyanobacteria cells in dense algal blooms is well underway at a marina on the southeastern shore of Lake Okeechobee.

## Gypstack expansion 7

A Mosaic Co. phosphate complex in Polk County reported unusual seismic activity under a gypstack recently permitted for expansion.

## Ocklawaha ruling 8

Circuit Court judges ruled against another suit filed by environmental advocates to restore flow to the Ocklawaha River by removing Rodman Dam.

## Guest columns 9,10

Brian Lapointe on a nutrient-reducing upgrade for septic tanks, Nick Albergo with an update on ASTM's new Phase I ESA standard and Steve Hilfiker on, well, you'll see...

## Departments

Federal File	2
Florida Notes	3
Water Watch	4

## Got a story lead?

Got an idea for a story? Like to submit a column for consideration? Let us know. And don't forget to fill us in on your organization's new people, programs, new offices, projects or technologies—anything of interest to environmental professionals working in Florida. Send to *Florida Specifier*, 2901 1st Ave. N., Suite 202, St. Petersburg, FL 33713.

## Address label change?

If your mailing label is inaccurate or incomplete, please contact us with the correct information at 2901 1st Ave. N., Suite 202, St. Petersburg, FL 33713, or e-mail us info@enviro-net.com. We appreciate your help with keeping our circulation database accurate.

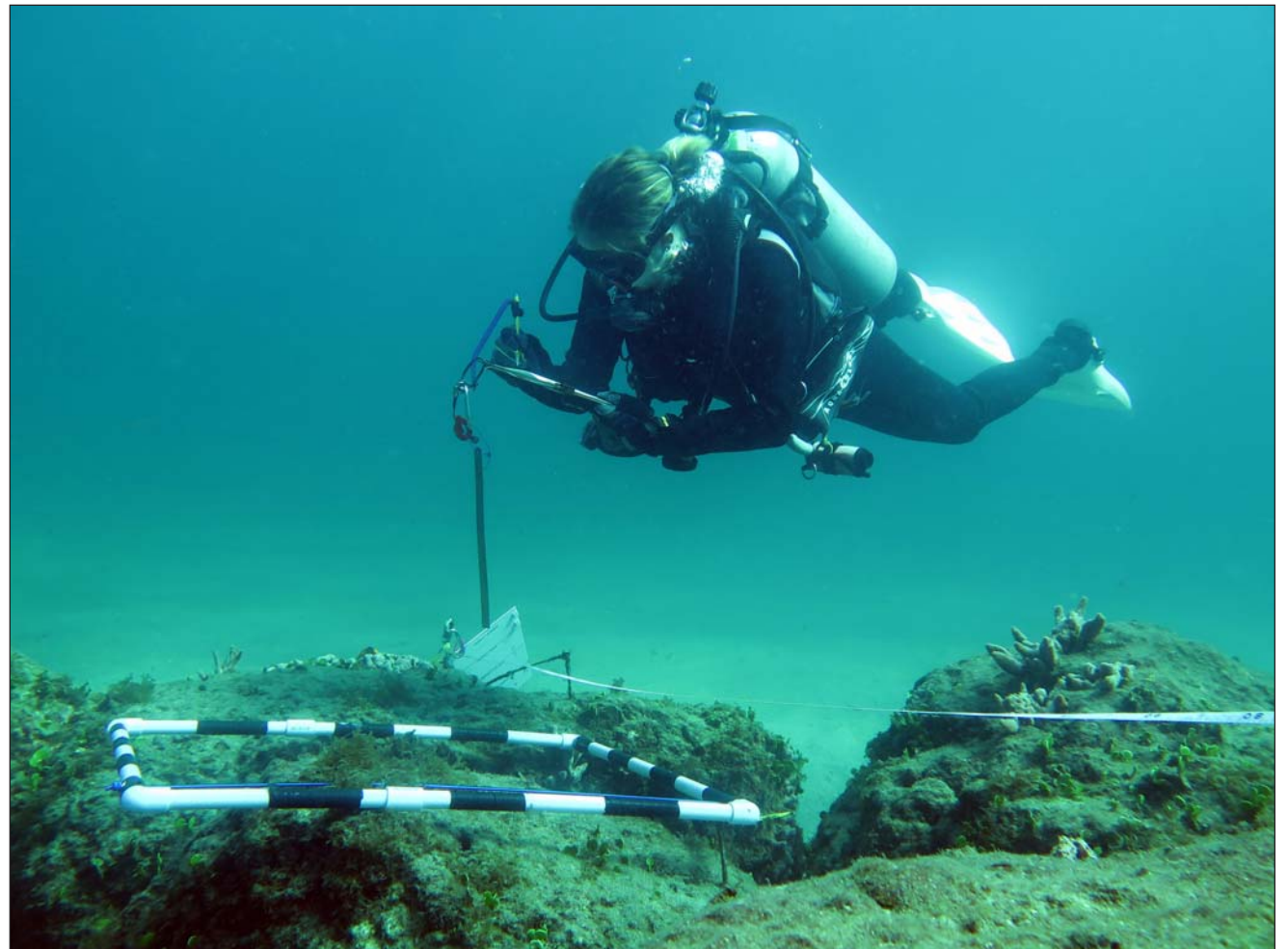


Photo by Katy Brown

Shara Teter, a marine biologist with Aptim Environmental and Infrastructure LLC, collects biological hardbottom data on an artificial reef recently deployed by the city of Pompano Beach. The reef was required as mitigation for the Pompano Pier Replacement Project. APTIM biologists are tasked with conducting the permit-required monitoring to track benthic recruitment, community development and acreage.

## EPA releases new PFAS action plan

By ROY LAUGHLIN

In mid-October, U.S. Environmental Protection Agency unveiled version 2 its PFAS Chemical Action Plan.

It replaced the initial plan released in 2018 during the Trump administration. That plan's only enduring success was validating EPA analytical methods for 29 per- and polyfluoroalkyl substances in drinking water.

The EPA's new plan promised several "deliverables" during the remaining years of the Biden administration.

For example, EPA Administrator Michael Regan said the agency would complete a final toxicity assessment for GenX—a patented six-carbon PFAS compound—and five other PFAS by the end of 2021.

Those five others could be termed "representative" PFAS compounds that include a 4-carbon alkyl compound, two 6-carbon compounds, a 9-carbon compound, and a 10-alkyl compound.

This selection reflects EPA's intent to establish regulations for structurally similar PFAS groups. More formally, this is known as using structure-activity relationships.

The agency will undertake further studies to understand toxic effects and develop health advisories for the numerous PFAS compounds frequently found at contaminated sites.

Structure-activity relationships are a potentially useful shortcut to defining the risks of the whole class of PFAS chemicals that number at least 5,000 structurally distinct molecules.

In the future, national PFAS testing will be the responsibility of manufacturers. They will be required to fund and

conduct biological effects studies on the human health and environmental hazards of PFAS.

The plan proposed to expand nationwide drinking water testing. It increased the number of water systems that must monitor for PFAS contamination as well as the number of target PFAS to 29, those for which the EPA has a validated analytical method.

Like the current required drinking water sampling mandate, the new plan proposed public funding for the monitoring. Congress will have to appropriate the needed funding. Sampling is set to begin in January, 2023.

The EPA expects to release a draft national drinking water standard for

perfluorooctanoic acid and perfluorooctanoic sulfonate, the formerly-used active ingredients in fire-fighting foams.

The chemicals are often present in drinking water wells on active and inactive military airbase installations.

The draft rule is expected in the fall of next year. The final rule is expected in the fall of 2023.

The EPA's new action plan included setting timelines and goals for PFAS investigations.

The agency also proposed to monitor PFAS in fish tissues collected in U.S. lakes. Those will be used to recommend

**PFAS**  
Continued on Page 13

## FRC 2021 in review: A mix of the traditional and the novel

By ROY LAUGHLIN

The Florida Remediation Conference may have taken a COVID-19 break last year, but it was back in 2021.

The change in FRC ownership brought some novelty in presentation protocols and a modified event schedule to the 2021 conference.

The most notable change was the combination of the 26th Annual FRC event with the 9th International Symposium & Exhibition on the Redevelopment of Manufactured Gas Plant Sites.

The MGP symposium shared the exhibition hall, social events and the Thursday luncheon. Attendees at both shared thoughts of mutual interests. In addition, some well-known FRC speak-

ers from prior years presented talks at the MGP symposium.

Though the number of platform presentations was less than in recent years, the content and quality was still there.

The themed platform sessions consisted of three or four presentations. The state's Petroleum Restoration Program was among the topics covered during FRC's Opening Session on Thursday morning.

Last year, Gov. Ron DeSantis proposed to cut PRP funding by about \$60 million. However, a concerted effort led by Steve Hilfiker, president of Environmental Risk Management Inc. in Fort Myers and FRC Opening Session moderator, successfully lobbied the Florida

**FRC**  
Continued on Page 15

Presorted Standard  
U.S. POSTAGE  
**PAID**  
ORLANDO, FL  
PERMIT 1556

2112

**Florida  
Specifier**  
2901 1st Ave. N., Suite 202  
St. Petersburg, FL 33713  
CHANGE SERVICE REQUESTED

# EPA to fund training for rural potable water, wastewater operators

## Staff report

On Oct. 15, the U.S. Environmental Protection Agency began accepting applications for competitive training and technical assistance grant funding to assist small drinking water and wastewater systems in rural areas.

The program's goal is to improve public health and environmental protection by helping to ensure that drinking water in small communities is safe. Training WWTP technicians ensures adequate water quality of the effluent released to the environment from smaller systems.

The EPA has \$21.7 million to support the program's grants.

The funding will provide training and technical assistance to technicians and staff in small public water systems, small wastewater systems and even private well owners.

The effort is expected to improve compliance with the federal Safe Drinking Water Act and Clean Water Act.

Private drinking water well owners who are not subject to many of the federal provisions that affect potable water supply and wastewater treatment will be taught strategies to protect their drinking water supply.

Eligible applicants include nonprofit organizations, nonprofit private universities and colleges, and public institutions of higher education.

The application window is open until Dec. 15. Grants will begin in the spring of 2022. The EPA encourages all eligible organizations to apply.

This grant program follows one from 2021, when the agency dispersed \$12 million in new grants for staff development at small wastewater systems.

**Climate adaptation plan.** In October, EPA released its 2021 Climate Adaptation Action Plan.

The plan is more than just a resurrection of the agency's pre-Trump goals and programs.

It fleshes out President Biden's "whole-of-government approach to confronting the climate crisis," according to an EPA news release.

The Biden administration's EPA no longer limits its efforts to climate change warnings and predictions. Rather, the agency focuses on avoidance, adaptation

and recovery.

"This plan is an integral part of EPA's commitment to bold and decisive action to help the country anticipate, prepare for, adapt to and recover from the devastating impacts of climate change," said EPA Administrator Michael Regan.

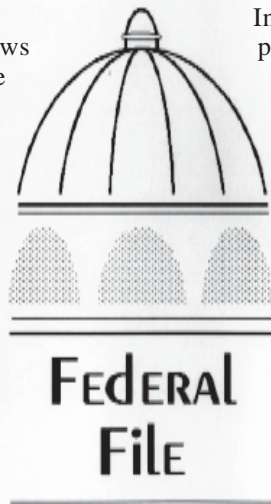
In the new climate adaptation plan, EPA will integrate climate adaptation and climate impacts throughout its programs, including rulemaking processes and enforcement activities.

Environmental justice is a new and integral focus of the administration's plan. The EPA believes that minorities, indigenous people, and the poor who live in overburdened communities bear the brunt of climate change's deleterious effects.

The new action plan includes commitments to

"help communities prepare for the serious climate impacts that are already underway," the agency release noted.

To support efforts at the community level, EPA promised broad cooperative efforts with local agencies, governments



and other organizations.

One novel aspect of the plan is that the agency acknowledged that it is not immune from adverse climate change influence.

The EPA is specifically "implementing measures to protect the agency's workforce, facilities, critical infrastructure, supply chains and procurement services from the risks posed by climate change."

Seeking additional information to flesh out policies and programs, the White House Council on Environmental Quality and the Office of Management and Budget sought and accepted public input.

The CEQ plans a virtual meeting later in 2021. Its staff will confer with national organizations with expertise in climate adaptation resilience or interest in the agency's plans. The agency will provide information about the meeting later this year.

The EPA created a new webpage to provide additional information and to foster collaboration for its new action plan at <https://www.epa.gov/climate-adaptation/climate-adaptation-plan>.

**WaterSense excellence award winners.** Citrus County Utilities received a 2021 Sustained Excellence Award from the EPA's WaterSense Program.

The award, the WaterSense program's highest level of achievement, recognizes WaterSense Partners that have received Partner of the Year awards in consecutive years. The awards are given to exemplary utilities to acknowledge a year's worth of effort.

The awards recently announced recognized activities occurring in 2020.

Citrus County Utilities won the award for two consecutive years of exemplary WaterSense activities. Those included attendance at local festivals, and distribution of 150 toilet leak tablets and 100 faucet aerators.

The utilities sent letters to its customers explaining how to fix common leaks and hosted three "Irrigation 101" workshops for 70 residents.

In addition, its outreach program provided a specialist to over 300 Citrus County residents. The outreach program offers free home audits, information about WaterSense labeled fixtures and rebate information.

Citrus County collaborates with the Southwest Florida Water Management District in the WaterSense program.

The Broward Water Partnership also received recognition as a Florida WaterSense program partner.

The Broward partnership won its fourth EPA WaterSense Partner of the Year recognition.

The EPA cited the partnership's creative use of digital advertising technologies and promotional partnerships. Its efforts focused primarily on fixing leaks and providing improved bathroom designs and fixtures for water conservation.

EPA noted that the program reached 16,000 Broward County residents.

Florida usually has multiple WaterSense recognition recipients in the annual listing.

The two Florida utilities that received awards are notably worthy of the recognition for their accomplishments during the trying times of the COVID-19 pandemic.

**Crest Center receives funding.** The EPA awarded \$5 million to the Florida International University Center for Research Excellence in Science and Technology's Center for Aquatic Chemistry and Environment.

The center will use the five-year grant to conduct Phase II of its program to detect contamination, study contamination's impact, and ensure student success in science, technology, engineering and mathematics fields.

The center conducts research programs focused on detecting the impacts of toxic substances, including microplastics, pes-

**FEDFILE**  
Continued on Page 14

## Important projects deserve the best tools!



### VaporPin®

To learn more visit [VaporPin.com](http://VaporPin.com)  
614.504.6915

**Applications include but are not limited to:**

- Sub-slab soil gas sampling,
- Pressure field extension testing/monitoring,
- Sub-membrane monitoring,
- Stray gas evaluations,
- Source area characterization, and
- Mitigation progress monitoring.

Vapor Pin® products are available worldwide through our distributor network.

<p style="font-size: x-small;">United Kingdom</p> <div style="background-color: #f9a825; color: white; padding: 5px; width: fit-content; margin: 0 auto;"> <b>Ribble Enviro Ltd</b>  <a href="http://www.ribble-enviro.co.uk" style="color: white; font-size: x-small;">www.ribble-enviro.co.uk</a> </div> <p style="font-style: italic; color: #f9a825; font-size: small;">...everything gas detection</p>	<p style="font-size: x-small;">France</p> <div style="background-color: #0056b3; color: white; padding: 5px; width: fit-content; margin: 0 auto;"> <b>APLM</b>                      EQUIPEMENTS  <small>Matériel pour l'environnement</small> </div>	<p style="font-size: x-small;">USA - California</p> 	<p style="font-size: x-small;">Brazil</p> <div style="background-color: #0056b3; color: white; padding: 5px; width: fit-content; margin: 0 auto;">  </div>
<p style="font-size: x-small;">Canada</p> <div style="background-color: #0056b3; color: white; padding: 5px; width: fit-content; margin: 0 auto;">  </div>	<p style="font-size: x-small;">South Korea</p> <div style="background-color: #0056b3; color: white; padding: 5px; width: fit-content; margin: 0 auto;">  </div>	<p style="font-size: x-small;">Australia</p> <div style="background-color: #0056b3; color: white; padding: 5px; width: fit-content; margin: 0 auto;">  </div>	<p style="font-size: x-small;">Spain</p> <div style="background-color: #0056b3; color: white; padding: 5px; width: fit-content; margin: 0 auto;">  </div>

**JOHN WATERMAN**  
Publisher  
St. Petersburg, FL  
jwaterman@floridaspecifier.com

**MICHAEL R. EASTMAN**  
Editor  
Orlando, FL

*Contributing writers and columnists*

**NICK ALBERGO, PE, DEE**  
Senior Advisor  
GHD Services  
Tampa

**BLANCHE HARDY, PG**  
Environmental Correspondent  
Apopka  
blanche@floridaspecifier.com

**STEVE HILFIKER**  
President  
Environmental Risk Management Inc.  
Fort Myers

**BRIAN LAPOINTE, PHD**  
Research Professor  
FAU Harbor Branch Oceanographic Institute  
Fort Pierce

**ROY LAUGHLIN**  
Environmental Correspondent  
Rockledge  
roy@floridaspecifier.com

The *Florida Specifier* makes every effort to ensure the accuracy and validity of all editorial and advertising content. The newspaper is independent in its views and does not support, endorse or guarantee any data, statements or opinions that appear under any reference or are attributed to or quoted from any known source. The views expressed by authors do not necessarily reflect the views of DRADDS LLC or the *Florida Specifier*.

The *Florida Specifier* (ISSN 0740-1973), founded in 1979, is published every other month for \$24.95 per year (\$49.95 for three years) by DRADDS LLC, 2901 1st Ave. N., Suite 202, St. Petersburg, FL 33713. Subscription refunds are not provided.

Standard postage paid at Orlando, FL 32862. POSTMASTER: Send address changes to the FLORIDA SPECIFIER, 2901 1st Ave. N., Suite 202, St. Petersburg, FL 33713.

© Copyright 2021 by DRADDS LLC. All rights reserved. No part of this publication may be reproduced or transmitted in any form without the publisher's prior written permission.



**Florida Specifier**  
2901 1st Ave. N., Suite 202  
St. Petersburg, FL 33713  
info@enviro-net.com

# DEP, partners win federal facility excellence award

## Staff report

The U.S. Environmental Protection Agency recently conferred one of four 2021 National Federal Facility Excellence in Site Reuse Awards to the Florida Department of Environmental Protection and its partners: the U.S. Navy, the city of Key West, Charley Toppino & Sons Inc. and MSE.

The group successfully transformed part of Naval Air Station Key West into the 23-acre Truman Waterfront Park.

EPA created the award to recognize outstanding collaborative outcomes at federal facility sites. The property used to create Truman Waterfront Park was closed as part of the federal Base Realignment and Closure process.

"The Truman Waterfront Park has been 15 years in the making and required frequent coordination, as well as deliberate and thoughtful engagement among stakeholders," said Tim Bahr, director of DEP's Division of Waste Management.

The success of the redevelopment effort, he said, demonstrated the benefits of cooperation among state, federal and local partners to support restoration efforts across the state.

**Hydrothermal treatment of septic tank waste.** Researchers recently released a paper concluding that hydrothermal treatment of septic tank waste could reduce the cost of pumping out septage by as much as 25 percent.

The processed waste can be converted to fertilizer for local community use, reducing the demand for outsourced fertilizer in the area.

In the pilot study, the high-temperature, high-pressure hydrothermal carbonization technique transformed wet biomass into energy and chemicals without pre-drying.

Pathogens were eliminated and some pharmaceuticals degraded in the process. Current fertilizer test application is limited to non-edible crops.

The researchers suggested that septic tank pumping fees might be eliminated for homeowners if the burden of removing the waste is covered by converting the septage into a commercially viable fertilizer.

The cost of pumping an average septic tank is usually between \$290 and \$330 in Florida depending on the size, complexity of the system and regional location of the tank.

In addition to reducing homeowner financial burden, the researchers noted that the process could reduce or eliminate nutrient loading and runoff, and enhance rural sustainability.

The paper was titled "Assessing hydrothermal carbonization as sustainable home sewage management for rural counties: A case study from Appalachian Ohio."

**Seagrass loss in Tampa Bay.** The Southwest Florida Water Management District reported the loss of 6,350 acres of seagrass—a 16 percent decline—in Tampa Bay between 2018 and 2020.

The loss was greater than anticipated in the area surveyed from the Manatee River north to Old Tampa Bay.

The study results were delivered to the Hillsborough County Environmental Protection Commission this fall.

Seagrass acreage surveys are coordinated by water management district scientists using aerial photos taken during their two-year seagrass assessment cycle, performed in the winter when bay waters are clearest.

The digital imagery is plotted, analyzed and ground-truthed to verify accuracy.

Seagrass provides critical habitat in Florida estuaries, and helps improve water clarity and reduce nutrient pollution.

The district noted that approximately 70 percent of commercially and recreationally important fish spend at least part of their life cycle within seagrass meadows.

The district has tracked the extent of seagrass in Florida estuaries since 1988. Initially 21,653 acres of seagrass were

mapped in the bay.

Environmental recovery, predominantly resulting from efforts to control nutrient pollution inputs, helped the bay reach 41,655 acres of seagrass habitat by 2016.

The most recent disturbing results mirror similar declines in seagrass habitat measured regionally in Sarasota Bay and Charlotte Harbor. Additional measures to control the release of nutrients into the bays are now under consideration.

**Miami seawall, flood gates rejected.** Miami-Dade County officials are considering measures to protect coastal areas along Biscayne Bay from hurricane storm surge.

Tall concrete seawalls in waterfront neighborhoods and along shorelines, and flood gates at rivers and canals are among the \$4.6 billion in storm countermeasures proposed by the U.S. Army Corps of Engineers.

Although flood gates may be needed in some cases, the currently proposed options from the corps were recently rejected by the county.

The seawall proposal is unpopular with residents and businesses that question their capacity to successfully address sea level rise and are concerned about related adverse property value impacts.

Environmental advocates also question the corps' plans, seeking a more balanced approach that includes enhancing existing natural protections such as dunes, mangrove forests and reefs.

The county requested that the corps revisit their approach to include the consideration of locally preferred options.

Any proposal will need to coincide with federal funding initiative schedules and meet cost analysis criteria. Addition-

ally, project benefits must exceed project costs.

For residents and environmental advocates, climate resilience is a key consideration for any future proposals.

**More repairs at Mosaic's Bartow facility.** The Mosaic Co. completed repairs on one of two pond liner tears recently discovered at its Bartow plant.

The two tears were found during evaluations of the II-C pond conducted in late summer. An indeterminate volume of process water stored in the pond was likely released, according to DEP's notice of discovery.

DEP records indicate subsurface collection drains are present in the vicinity of the tears. Water collected in the drains is actively pumped back into the lined pond system.

The subsurface collection drains allowed process water to be shifted from one area of collection to another while the liner damage was assessed and repaired.

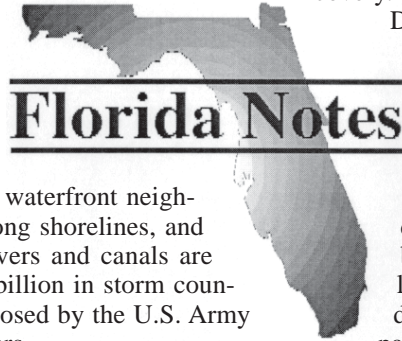
Wastewater collection has been restored in the area of the completed repair.

**Statewide wildlife corridor evolves.** DEP recently acquired a 2,115-acre parcel within the Coastal Headwaters Longleaf Forest Florida Forever project in Santa Rosa County.

The land will help complete a natural area connection between the Whiting Field Naval Air Station and the Blackwater River State Forest, creating a 200,000+-acre contiguous tract of protected land.

The acquisition of the forest property was one of six Florida Forever conservation purchases recently approved by the state.

The purchase was facilitated by sev-



**NOTES**  
Continued on Page 16



**Advanced Environmental Laboratories, Inc.**  
*Florida's Largest Laboratory Network*

**When all else changes, you can count on AEL**

**PFAS! Whether you know about this emerging contaminant or want to learn more, AEL can help. AEL is NELAC and DOD-ELAP certified to analyze for PFAS in drinking water, non-potable water, and soils. Florida-based, AEL has been a state leader in providing quality lab services for over 27 years.**

**YOU CAN COUNT ON US!**

**Seven Labs Means More Local Service and Faster TAT**



**Fort Myers - (239) 674-8130**  
Josh Snead - jsnead@aellab.com

**Jacksonville - (904) 363-9350**  
Jerry Allen - jallen@aellab.com

**Gainesville - (352) 377-2349**  
Josh Apple - japple@aellab.com

**Miami - (954) 889-2288**  
Wayne Khan - wkhan@aellab.com

**Orlando - (407) 937-1594**  
Todd Romero - tromero@aellab.com

**Tallahassee - (850) 219-6274**  
Tim Preston - tpreston@aellab.com

**Tampa - (813) 630-9616**  
Sheila Wilcox - swilcox@aellab.com

# Tampa issues green bonds to fund stormwater management projects

## Staff report

In October, the city of Tampa issued \$36.6 million in “green bonds” to pay for projects to better control stormwater runoff into Tampa Bay. The funding will underwrite projects to reduce flooding and construct green infrastructure to help improve stormwater management.

Planned projects include rain gardens, pervious pavement installations, bioswales and the construction and design of pumping stations to protect against flooding.

The projects are part of Tampa Mayor Jane Castor’s Transforming Tampa’s To-

morrow program and her Resilient Tampa Roadmap.

Municipal bonds, in general, are fixed interest loans whose interest payments are exempt from federal income tax. In 2018, Tampa first issued green bonds for stormwater projects. Those bonds were self-certified.

This time, the city engaged Vigeo Eiris, a third-party green bond verifier and an affiliate of Moody’s rating agency. Independent third-party rating provides greater security to the bond’s purchasers, a substantial benefit during times of low interest rates.

Municipal bond issuance is not usually news, but this one may be a harbinger of a broadening municipal bond category in Florida.

Green bond issuance may increase dramatically after the Florida Legislature updates stormwater management rules in the January 2022 regular legislative session.

Tampa’s example of third-party verification may become a model across Florida for the issuance of municipal bonds for low impact development projects.

A continuation of low interest rates will also make third party rating of bonds in any category more attractive to investors.

**Miami-Dade wastewater funding.** In November, the Miami-Dade County wastewater treatment system capital improvement plan received an additional \$635 million in funding.

A federal Water Infrastructure Finance and Innovation Act loan for \$424 million plus \$211 million in county appropriations swelled the capital improvement project funds available for the county’s multi-year improvement plan.

The loan created by WIFIA and administered by the U.S. Environmental Project Agency will be applied to projects in Miami-Dade’s northern and central wastewater treatment system districts.

The money will fund improvements to wastewater treatment processes, rehabilitation of a sewer pump station and construction of new injection well pump stations.

Some of these projects are already underway, for example, the construction of deep injection wells to dispose of wastewater treatment plant effluent.

The Miami-Dade Water and Sewer Department is under an EPA consent agreement to reduce sewer system overflows that contaminate surface water, including Biscayne Bay.

In addition, a different state law, the Florida Ocean Outfall legislation, requires utilities to end ocean disposal of wastewater treatment plant effluent by 2025.

Both requirements led Miami-Dade to upgrade its wastewater collection system and to dispose of its treatment plant effluent through deep well injection into the Lower Floridan Aquifer.

The recent loan is the fourth WIFIA loan that Miami-Dade has received, and the first time any recipient has received

four WIFIA loans.

The WIFIA program, established in 2014, provides up to 49 percent of a project’s funding in direct loans or loan guarantees from the U.S. government. The successful loan applicant must demonstrate that it has additional loans or cash on hand for the remaining 51 percent of a project’s cost.

Miami-Dade commissioners also approved a \$211 million funding bill for the Miami-Dade Water and Sewer Department to support five more capital improvement projects.

Projects funded this year will further reduce sanitary sewer overflows and increase sanitary sewer system reliability.

**Milton WWTP costs balloon.** The city of Milton in Santa Rosa County spent several years designing a new, higher-capacity wastewater treatment facility and preparing a suitable site for it.

Shortly after the groundbreaking ceremony, Milton officials were shocked to discover that bids for the expected \$28 million project came in at \$40 million—far higher than the project’s planned budget allocation.

Over the past six months, officials have scrambled to raise the additional funding needed to complete their new wastewater treatment plant.

First, the Santa Rosa County Commission and the city of Milton signed an interlocal agreement that allowed the WWTP to be moved about a quarter of a mile to a different county-owned site.

The agreement also paved the way for the city-county partnership to apply to the U.S. Department of Commerce’s Economic Development Administration for a grant of \$4 - \$8 million. The interlocal agreement was finalized on Nov. 9.

The plant’s capacity expansion and treatment process improvement is a regionally significant effort. The current plant is expected to reach its 2.5 million gallons per day maximum capacity in 2023.

The new plant, when complete, will treat up to eight million gallons of wastewater per day. If new treatment capacity is not available in 2023, a construction moratorium in Santa Rosa is the likeliest first response.

At press time, Milton officials were still working to pull the financial resources together to complete the new plant.

The path forward is still uncertain, but the goal is not. Officials are confident that, by early 2022, construction can begin on the project that will end effluent releases to the Blackwater River and provide sufficient treatment capacity to meet the growing demand.

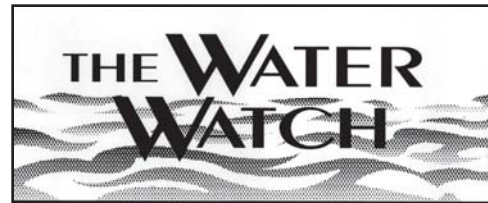
**Sarasota stormwater.** Stormwater pond owners in Sarasota County can now get financial assistance for a “do-over” to improve their ponds’ nutrient retention capabilities.

A local nonprofit, the Healthy Ponds Collaborative, recently launched its Solutions to Avoid Red Tide, or START, program.

The program will provide consultants from the University of Florida’s Institute of Food and Agricultural Sciences extension in Sarasota County to advise homeowner groups and other pond owners about the benefits of planting littoral emergent plants around a ponds’ margins.

Most of the START program funding came from a \$250,000 grant from the Charles & Margery Barancik Foundation. In addition to providing consultants, the foundation funding will support some of the plantings.

The primary goal of stormwater pond planting is to improve its nitrogen and



**WATCH**  
Continued on Page 5

**WATCH**  
From Page 4

phosphorus retention.

Decades ago, when stormwater ponds were first proposed, their proponents expected up to an 80 percent nutrient retention. But decades of experience show that 40 - 60 percent retention is the usual range.

The 80 percent level that's characteristic of natural wetlands is seldom reached in constructed ponds.

Planting littoral vegetation attempts to close that gap between the performance of constructed stormwater ponds and naturally vegetated ponds.

Nutrient reduction using the ponds is intended to benefit both the Tampa Bay and Sarasota Bay estuaries.

**Alum treatment, sand filtration approved for Caloosahatchee reservoir.** In mid-September, the South Florida Water Management District announced that they would build and operate an alum injection/sand filtration system to reduce nutrient concentrations in the Caloosahatchee River Reservoir.

District officials chose the in-reservoir alum treatment process to ensure that the water would meet low phosphate and nitrate standards before release to the Caloosahatchee River.

The Caloosahatchee River reservoir will hold up to 50 million gallons on about 10,000 acres of former farmland in Hendry County on the south side of the river.

The reservoir is one of the Central Everglades Restoration Plan's original projects, approved by Congress in 2000.

The current plan is to have it operational by December, 2023.

**Fort Myers, Cape Coral to share reuse water.** A new reuse water-sharing project, dubbed the Caloosahatchee Connect, began construction in September.

A reuse water pipeline will be constructed under the Caloosahatchee River connecting the city of Fort Myers utilities' wastewater treatment center with Cape Coral's reuse water system.

The pipeline will allow Fort Myers to contribute up to six million gallons a day of its treated wastewater to Cape Coral, about half of what it generates. What is sent to Cape Coral will not be discharged into the Caloosahatchee River.

Controlling harmful algal blooms by reducing nutrients is the primary goal of sending the effluent to Cape Coral rather than discharging it to the river.

The pipeline is part of a larger effort by Fort Myers to comply with a Florida Department of Environmental Protection consent agreement to reduce treatment plant discharges to the river. Under the agreement, the city will construct and operate a reclaimed water treatment facility at its Matthew Drive advanced wastewater treatment facility.

Fort Myers will construct a pipeline under the Caloosahatchee to the mid-point of the bridge over the river that connects Fort Myers and Cape Coral.

Cape Coral will complete its half of the pipeline that will transport wastewater to the Cape Coral reclaimed water facility on Everest Parkway.

The entire project is estimated to cost about \$61 million, with each city funding its part separately. The project has some grant and loan support, but utility customers will pay most of the costs over time.

Fort Myers has a \$1.5 million grant from DEP. The balance of their funding comes from utility bonds.

Cape Coral expects its portion to cost between \$20-\$25 million. The city has \$10 million in grants. The city has also requested \$4 million from the Florida Legislature.

The remainder of their costs will be covered through fees charged for reuse water to irrigate landscaping.

The project's expected completion date is January, 2023.

**City of Callaway stormwater.** The city of Callaway in Bay County is conducting a lake cleanup project focusing on its two largest stormwater ponds. The ponds, the Fox Lakes and Lannie Rowe Ponds,

receive most of the city's stormwater runoff.

Over the years, they have also received a lot of debris, and invasive plants have started to clog the ponds.

The city plans to remove the invasive species and open up the ponds' margin as city parks. In addition, they plan to conduct three more projects to treat stormwater that enters these two ponds.

The lake cleanup will cost about \$150,000. The American Rescue Plan Act of 2021 is the source of project funding.

City officials hope the cleanup will be completed by the end of 2021.

**Study of nitrogen sources in Tampa Bay.** A group of researchers with the University of Florida Institute of Food and Agricultural Sciences will partner with Mote Marine Laboratory & Aquarium to study nitrogen sources contributing to Tampa Bay.

Their work will use isotopic nitrogen ratios to determine what proportion of nitrogen in Tampa Bay's waters originates from rainwater, stormwater runoff or wastewater effluent.

The nitrogen source study is important for two reasons.

First, nutrient nitrogen concentrations in Tampa Bay declined from 2006-2015 and then rose between 2016-2020.

During 2016-2020, the bay experienced more frequent and extensive microalgae blooms. The seagrass declines in old Tampa Bay occurred when the blooms were the most frequent and densest. Overall, seagrass density and coverage has declined significantly over the past five years due to the blooms.

The blooms involved two notable harmful algal species. The dinoflagellate *Karenia brevis* is responsible for red tide. Another dinoflagellate, *Prodinium bahamense*, is responsible for bioluminescence at night and sometimes shellfish poisoning.

The Piney Point phosphate facility discharges in late March, 2021, are another factor in the current focus on nutrient nitrogen budgets.

Piney Point wastewater releases generated a year's worth of nitrogen to Tampa Bay in just a few days. The ensuing red tide bloom killed tons of fish in Tampa Bay and parts of Sarasota Bay.

That single large discharge is over, but scientists think further limiting other nitrogen sources from Tampa Bay's watershed is the best way to rebalance the nitrogen budget.

The idea is that lowering watershed nutrient nitrogen inputs will reduce microalgae in the water column and favor seagrass beds growing on the sediments.

The proposed study will use nitrogen isotope ratios to tease out the sources' relative contributions or rule them out as sources.

The project has three components. The first is to investigate nitrogen isotopic characterization of nutrient nitrogen inputs to Tampa Bay.

The second is to investigate the relationship between nitrogen nutrient inputs and blooms of the two dinoflagellates, *Karenia brevis* and *Prodinium bahamense*.

Third, the findings will form the basis of an educational program to characterize the connections between air pollutants and

water quality. The air pollutants are oxides of nitrogen that become nutrient nitrogen carried by stormwater into Tampa Bay.

The research project began in September and is funded for two years.

**Construction begins on EAA Reservoir.** Phillips & Jordan won a \$79.8 million contract to build seven miles of canals and a maintenance road in Belle Glade.

It is the first federal contract let by the U.S. Army Corps of Engineers for the Everglades Agricultural Reservoir. The work is scheduled for completion in September, 2023.



**ST. JOHNS RIVERKEEPER®**



*"Clean water is the lifeblood of Florida's economy and essential to our health and quality of life. We cannot afford to sacrifice our valuable water resources for the politics of the moment and the fortunes of a few."*

*The St. Johns Riverkeeper  
Lisa Rinaman*



**PROTECTION AND ENFORCEMENT**

**GOOD FOR OUR RIVER.  
GOOD FOR YOUR BUSINESS.**

**ST. JOHNS RIVERKEEPER  
FOR THE RIVER. BY THE PEOPLE.**

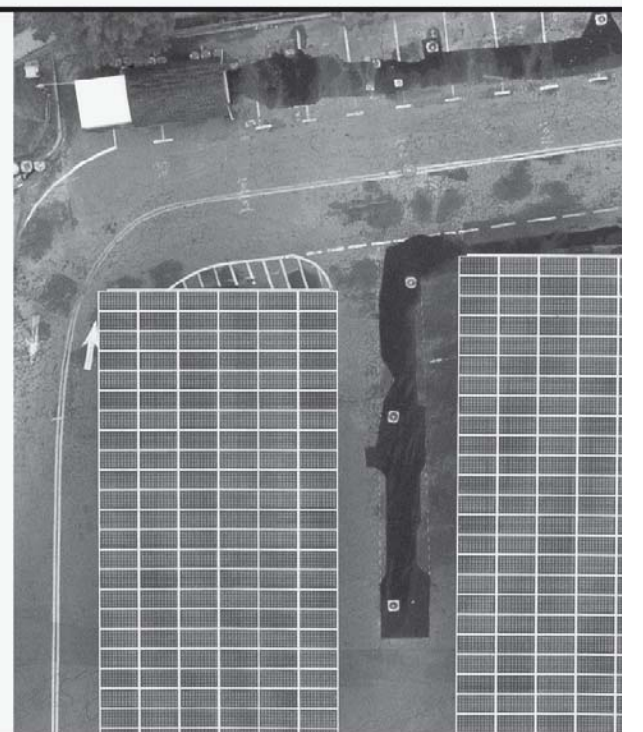


**JOIN**  
ST. JOHNS RIVERKEEPER®  
[stjohnsriverkeeper.org/join](http://stjohnsriverkeeper.org/join)



## Have a challenging site?

- |                            |                             |
|----------------------------|-----------------------------|
| <b>Gasoline /MTBE/ TBA</b> | <b>Hexavalent Chromium</b>  |
| <b>Diesel</b>              | <b>PCE</b>                  |
| <b>Heating Oil</b>         | <b>TCE</b>                  |
| <b>Benzene</b>             | <b>DCE</b>                  |
| <b>Ethylbenzene</b>        | <b>VC</b>                   |
| <b>Toluene</b>             | <b>TCA</b>                  |
| <b>Xylenes</b>             | <b>DCA</b>                  |
| <b>Aviation Fuel</b>       | <b>Nitrates</b>             |
| <b>Motor Oil</b>           | <b>Sulfates</b>             |
| <b>Hydraulic Oil</b>       | <b>NDMA</b>                 |
| <b>Kerosene</b>            | <b>Pesticides</b>           |
| <b>Coal Tar</b>            | <b>Pentachlorophenol</b>    |
| <b>TNT / DNT</b>           | <b>Freon 11, 12, 113</b>    |
| <b>PAHs</b>                | <b>Carbon tetrachloride</b> |



ETEC has experience with many different types of contaminants.

**ETEC.LLC.COM** or call **971.222.3616** | **#bioremediation**

# Experiments to destroy *Microcystis* with nanobubbles underway in Lake O

By ROY LAUGHLIN

An in-situ pilot study using oxygen nanobubbles to destroy *Microcystis* cells in dense algal blooms is well underway at Pahokee Marina on the southeastern shore of Lake Okeechobee.

The marina is a challenging site for *Microcystis* bloom control.

Early this spring, *Microcystis* blooms began to form, creating a thick goop of surface algae mats and foul odors that persisted for weeks.

Local stories reported that the marina

was a blind sack accumulating *Microcystis* pushed there by wind and the waves of Lake Okeechobee.

In April, the worst of the bloom was suctioned from the surface and trucked away.

A water treatment project using ozone-forming chemicals further reduced cyanobacteria densities, an effort reportedly costing about \$1 million.

For about three months, the bloom abated. Subsequent removal of some of the marina enclosure sections allowed additional water circulation but only partially

reduced the cyanobacteria cell densities in the marina.

Then in September when another bloom began, Barry Rosen, PhD, a professor in the Department of Ecology & Environmental Studies at Florida Gulf Coast University, began a planned pilot study to test the efficacy of nanobubble treatment to prevent blooms at the marina.

Nanobubble treatment in stormwater retention ponds is a novel technology. A 2017 review in the academic journal *Advances in Colloid and Interface Science* compared nanobubble treatment to microbubble treatment, and described nanobubble treatment's potential for disinfection.

The more familiar microbubble treatments float particles in water to the surface and concentrate them, where skimming makes removal highly effective. But skimming and disposal can be an expensive proposition.

Nanobubbles act differently than microbubbles. They do not rise to the surface so they do not concentrate suspended particles as do microbubbles.

Nanobubbles kill cyanobacteria cells. Rosen, citing the article noted above, attributed the microbubble's killing action

to "bursting energy."

Nanobubble treatment, in use in Florida for almost a decade, has limited bacteria and cyanobacteria blooms in previous tests and applications such as aquaculture and agriculture ponds.

In the past five years, nanobubble generators that work by electrolysis became fixtures in stormwater retention ponds across the state.

The number of sites using this treatment method is not large but it is geographically widespread.

Nanobubble treatments using electrolytically-produced nanobubble generators are most effective after long term use. They do not rapidly clear a pond with an algae bloom.

In 2016, California-based Moleaer Inc. began marketing a fan-based nanobubble generator, a technology that has enjoyed some level of success in Florida.

The Pahokee Marina pilot study is using this type of nanobubble generator. It's about the size of a home electrical generator and relies on fans to concentrate oxygen from air into nanobubbles.

Moleaer leased four nanobubble generator machines for use in the Pahokee Marina study. The company also supplied water quality data sondes and nutrient analysis.

In Rosen's original plan, the nanobubble project was slated to last for four months, until the end of 2021.

The serendipitous bloom aided by wind and waves was not a part of the experimental protocol, but it did provide a good test for the nanobubble treatment.

At the end of six weeks, the persistent *Microcystis* bloom was still visually evident.

However, the concentration of the toxin microcystin that cyanobacteria release reached only five micrograms per liter—less than the U.S. Environmental Protection Agency microcystin health standard of eight micrograms per liter.

Based on the reduction in toxin production, Rosen's pilot study yielded positive evidence of nanobubble treatment to control *Microcystis* blooms and toxin release in an enclosed basin.

Rosen provided graphs of photosynthetic pigments or their degradation products to show a consistently lower concentration in the treatment sites than controls, indicating that the nanobubble treatment reduced cyanobacteria cells.

Photographs taken in early November by Rosen show a marina without a green sheen on the water's surface.

He noted that investigators are generating biweekly cyanotoxin data from the three treatment and control sites that will be available when the experiment is completed.

"This is a test of an innovative technology," he said. "We have months to go to determine if this technology has promise."

The Moleaer oxygen generators can also produce nanobubbles enriched with ozone. In contrast to diatomic oxygen, ozone, a chemically unstable three-atom form of molecular oxygen, is highly toxic to living cells.

The efficacy of such ozone-enriched bubbles will be tested in the longer term of the pilot study.

"Our concept is to switch on the ozone generator when significant phycocyanin is present," said Rosen. "We have sensors that relay that information via satellite."

When asked if the research method is a prophylactic or rescue treatment, Rosen replied that it is prophylactic with the oxygen nanobubbles. And he hopes to show that ozone treatment will break down cyanobacteria biomass as the nanobubbles with ozone kill the cells rapidly enough to be a rescue method as well.

The research is still in progress but appears to be a promising approach to cyanobacteria bloom reduction in enclosed spaces like marinas and ponds.

The Florida Department of Environmental Protection provided \$335,000 to support the study for a year.



IMAGINE! The Indian River Lagoon is so clear that you can wade into it and see your toes wiggling in the sand. It's possible if we continue to make progress.

## SaveTheIRL.org

# We Dare You

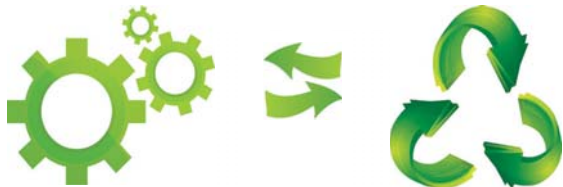
## Let Us Help You Market Your Materials

a modern day match making service with a twist!

The Southern Waste Information eXchange, Inc. (SWIX) is a 501(c)(3) non-profit clearinghouse & repository encouraging the recycling & reuse of waste materials. Let us help you market your materials. Our service is **FREE**.

Waste Generator

Waste User



Visit Our **WEBSITE**

[www.wastexchange.org](http://www.wastexchange.org)



# Unexpected seismic activity puts Mosaic gypstack expansion in limbo

By ROY LAUGHLIN

In mid-October, The Mosaic Co. phosphate facility in Polk County, known as the New Wales plant, reported unusual seismic activity under its phosphogypsum stack complex.

A highly sensitive acoustic sensor reported unusual vibrations at the gypstack complex that lasted about 10 days in October.

The Mosaic complex is the site of two gypstack failures, one in 1994 and again in 2016. Both prior failures occurred when a sinkhole opened beneath the gypstack.

In the 2016 occurrence, an estimated 250 million gallons of wastewater and solids flowed through the sinkhole into the Upper Floridan Aquifer.

The amount of material that flowed into the aquifer in 1994 remains unknown.

The indications of possible seismic activity under the 703-acre gypstack, now being expanded by 231 acres, is a reason for great concern because of the prior two collapses.

This spring, Mosaic announced it would apply for a permit to construct and operate a third gypstack adjacent to the one that failed in 2016.

In the ensuing months, the company began engineering and geotechnical work to prepare the ground for the planned gypstack.

The permit application initiated public meetings, conducted by Mosaic and the Florida Department of Environmental Protection, at which widespread opposition to the expansion plan was reported.

On Sept. 8, 2021, DEP officials announced that they would rule on a permit to expand the New Wales plant's gypstack. Then, just six weeks later on Oct. 15, DEP approved the expansion.

One of the reasons for the fast-track approval was that none of the opponents requested a hearing after DEP's September announcement. When a hearing is requested, it can delay permit approval by several weeks, sometimes longer.

But irony is not dead. Between Oct. 8 and 18, inclusive, Mosaic geologists began collecting data of anomalous ground vibrations collected by extremely sensitive acoustic detectors around the gypstack and its expansion zone.

By the end of that month, Mosaic shared acoustic data with DEP officials that indicated ground motion.

The department responded during the final week of October, saying that Mosaic's submitted data "indicates the presence of a subsurface condition that has potential to adversely affect the integrity of the phosphorus stack."

A letter penned by Vishwas Sathe, environmental administrator of DEP's phosphate management program, stated that given the proximity of the detected acoustic emissions, authorization to begin work on the gypstack expansion would not be provided without knowledge of whether there are any new subsurface features that may require further exploration to determine if stabilization is needed.

Sathe also requested daily updates on any further acoustic readings from sensors at the gypstack site.

Through its spokesperson, Mosaic said they will continue site preparation and conduct geotechnical borings to determine the origin and significance of the acoustic signals that may indicate unstable geological conditions beneath the site.

However, this situation may take some time to resolve considering the prior two ground collapses.

On Sept. 28, the Center for Biological Diversity sent a letter to U.S. Environmental Protection Agency Administrator Michael Regan asking for the agency to intervene in the permitting approval process.

The EPA has oversight authority of DEP's National Pollution Discharge Elimination System permits for Mosaic facilities.

As of early November, the EPA has only acknowledged receipt of the letter and

is evaluating the situation.

The leaders of 14 other Florida and national environmental groups co-signed CBD's letter, asking the agency to reverse approval of the NPDES permit for the New Wales facility.

They cited numerous gypstack failures in Florida, focusing on the prior New Wales failure in 2016 and the Piney Point

failure in 2021.

On Oct. 29, Nikki Fried, head of the Florida Department of Agriculture and Consumer Services, also released a letter asking the EPA to "object to" the NPDES permit approval made two weeks earlier by DEP.

If the EPA administrator objects within 90 days, the NPDES permit cannot be is-

sued by DEP, she noted.

DEP has provided little substantial information about the situation at the New Wales plant, as it had done during the prior two gypstack collapses.

Mosaic's gypstack expansion project is now stalled until a favorable indication of the safety of the site for gypstack expansion occurs.

## PortMiami expansion feasibility study delayed, again

By BLANCHE HARDY, PG

PortMiami continues to wait for the results of a U.S. Army Corps of Engineers feasibility study evaluating the widening and deepening of the harbor. The study's results, already overdue, have been delayed again until September, 2022.

A corps feasibility study is typically conducted over a 36-month period. The PortMiami study began with the signing of a feasibility cost-share agreement in September, 2018, and will conclude with the corps' chief of engineer report. The study budget is \$3 million.

Miami-Dade County lists the port as their second most important economic engine, contributing \$43 billion annually to the local economy and supporting more than 334,500 jobs in South Florida.

PortMiami enjoyed its busiest year in

history in terms of cargo activity in fiscal year 2021, up 17.6 percent from the prior year.

The stated purpose of the corps' study is to assess the effects of potential navigation improvements to Miami Harbor.

Federal and county data indicate that both container vessels and cruise ships are experiencing maneuvering difficulties in the port that was deepened and widened through a dredging project in 2016.

Since that expansion, the size of vessels in the world fleet has increased. Miami Harbor will require additional modifications to remain competitive by accommodating the new wider and deeper draft vessels.

Unfortunately, the previous dredging project had devastating environmental consequences. Research showed that the dredging caused widespread damage to

Florida's coral reefs.

Any additional expansion to the harbor must consider previous mistakes and prevent additional environmental impacts.

A team of researchers at the University of Miami Rosenstiel School of Marine and Atmospheric Science published a critical report, "Extensive Coral Mortality and Critical Habitat Loss Following Dredging and their Association with Remotely-Sensed Sediment Plumes," in the *Marine Pollution Bulletin* in 2019.

The study concluded that sediment from the dredging buried between half to 90 percent of nearby reefs, resulting in widespread coral death.

It estimated that over half a million corals were killed within 550 yards of the

**PORT**  
Continued on Page 13

# Rodman Dam dodges another bullet; appeals court lawsuit dismissed

By **BLANCHE HARDY, PG**

Judges of the 11th U.S. Circuit Court of Appeals recently ruled in favor of the U.S. Forest Service and against Florida Defenders of the Environment in the decades-long effort of environmental advocates to restore flow to the Ocklawaha River by removing Rodman Dam.

The appeals court returned the case to district court, instructing the court to modify the record to indicate the lawsuit was dismissed “without prejudice” providing the plaintiffs with an opportunity to revise and refile.

Rodman Dam formed the Rodman Reservoir southwest of Palatka. The dam was completed in 1968, the first of two dams and reservoirs that the U.S. Army Corps

of Engineers planned for the Ocklawaha River to enable navigation along the long defunct and abandoned Cross Florida Barge Canal.

Florida Defenders of the Environment et al v. U.S. Forest Service, Case No. 20-12046, requesting the restoration of surface water flow to the Ocklawaha, was based on the state of Florida’s operation of the dam and reservoir within the Ocala National Forest.

Control of almost all of the federal government’s related canal interests and structures was transferred to the state in 1991.

Defenders of the Environment maintained that Florida is required to secure a special-use permit to use and occupy the land. The state’s permit expired in 2002.

Although persistently pursued by river restoration advocates, the state has refused to sign a permit connecting the state’s use of federal forest land to the desired river restoration.

The original U.S. Forest Service environmental impact statement for the state’s continued use and occupancy of federal lands and the approval of a renewed special-use permit was based on the condition that the state begin to partially restore water flows in the Ocklawaha River basin.

The related record of decision in 2001 included lowering the water level in the reservoir, breaching the dam, removing infrastructure and altering some topography.

The proposed federal special-use permit was conditioned, and failure by the state to make progress in achieving the conditions by 2006 would constitute grounds for its revocation.

Florida declined to sign the permit due to the lack of funding to complete the restoration conditions. The state, however, did not object to the conditions, including the previously agreed upon restoration plans.

The lawsuit contended that the dam and reservoir are being operated by the state without a permit. This argument was rejected by the circuit court judges when they choose to uphold a similar district court ruling made in 2019.

Rodman Dam closed off the flow of the Ocklawaha River; flooded 7,500 acres of forested wetlands, 16 miles of river and at least 20 springs; and blocked upstream migration of fish and aquatic species.

Completion of the dam impacted natural systems ranging from the St. Johns

River to beyond Silver Springs. It also created what sports fisherman consider a “premier” largemouth bass fishery in Northeast Florida.

The dam’s continued impact on water quantity, water quality and wildlife habitat prompted American Rivers to name the Ocklawaha as one of America’s most endangered rivers earlier this year.

“It is critical that we restore the natural flow of the Ocklawaha River by breaching the Rodman Dam and reuniting Silver Springs, the Ocklawaha and the St. Johns,” said St. Johns Riverkeeper Lisa Rinaman. “Restoration would help offset increased salinity and improve water quality by increasing the flow of freshwater into the St. Johns by at least 150 million gallons of water a day and restoring over 7,500 acres of forested wetlands.”

Rinaman said that the large-scale restoration project would fortify the Lower St. Johns River for generations to come.

The results of a newly completed survey conducted by the St. Johns River Water Management District showed resounding public support for breaching Rodman Dam and restoring the Ocklawaha.

Over 86.5 percent of the participants expressed a desire to restore a free-flowing Ocklawaha while only 5.9 percent of responses were in favor of retaining the dam and reservoir.

Respondents came from 66 of Florida’s 67 counties. Over 17 percent, or 1,327 surveys submitted, came from out-of-state.

The St. Johns Riverkeeper noted that national stakeholder groups including Bassmaster, American Rivers and Defenders of Wildlife solicited comments from members outside the state.

## Permit denied for oil exploration well in Big Cypress watershed

By **BLANCHE HARDY, PG**

The Florida Department of Environmental Protection recently convened the Big Cypress Swamp Advisory Committee to provide recommendations on a permit application submitted by Trend Exploration LLC to drill and explore for hydrocarbons within the Big Cypress watershed near Immokalee.

The Big Cypress watershed is the area in Collier County and adjoining portions of Hendry, Broward, Miami-Dade and Monroe counties that is designated as the Big Cypress Swamp in U.S. Geological Survey Open-File Report No. 70003.

Trend Exploration LLC’s application to drill the Trend Exploration 27-3 Well, DEP Permit No. 1394, was received by the department in the spring of 2021.

The permit application requested permission to drill a directional well to a depth of 11,500 feet to test the upper Sunniland “D” porosity zones. The mineral rights are owned by Collier Resource Co. LLP.

The proposed well is in Collier County north of the Immokalee Airport and east of Highway 29, roughly two miles south of the Immokalee Reservation of the Seminole Tribe of Florida within the northern boundary of the watershed.

The state received pages of written submittals expressing concerns about the proposed well including comments from the Seminole Tribe who noted the potential for impacts to potable water supplies and requested a Phase I Cultural Resource Survey in areas where soils would be disturbed.

The Big Cypress Swamp is a unique and valuable environmental resource, and contains Florida Panther habitat as well as ecological systems supporting listed and protected species of plants and wildlife.

All permits proposed in the watershed are required to be reviewed by the advisory committee. Although it has no final authority to approve or deny permits, the committee makes recommendations to DEP regarding applications.

The committee can recommend additional procedures, safeguards or conditions as necessary to protect the integrity of the Big Cypress watershed.

The BCSAC meet in October to evaluate and provide recommendations on the pending application submitted by Trend Exploration.

Information presented to the committee indicated that five exploratory wells surrounding the proposed well were dry, producing no oil.

Committee members and the public expressed concerns about impacts to wildlife, surficial aquifer degradation resulting from the proposed drawdown of significant quantities of groundwater, the well’s proximity to existing potable water supply wells, the possible presence of subsurface geologic conditions conducive to

**PERMIT**  
Continued on Page 13

# Clark

## ENVIRONMENTAL



### Cleaning Earth... One Ton at a Time

Recycling • Disposal • Transportation  
Liquids • Solids • Sludges  
Bulk • Drum • Rolloffs • Fracs

Florida’s Premier Disposal Facility  
863.425.4884 • ClarkEnv.com

LEADING PROVIDER OF ENVIRONMENTAL  
PRODUCTS, SYSTEMS, AND SERVICES  
FOR OVER 40 YEARS



- ⇒ Full line of quality activated carbons, organo-clays, resins and numerous medias for removal of VOCs, SVOCs, PFAS and Metals; including Arsenic.
- ⇒ Sale & Rental of remediation and dewatering systems.
- ⇒ Turn-key non-hazardous & hazardous on-site change out services.
- ⇒ Reactivation of spent carbon and disposal of medias.

• Eighty Four, PA 724.222.3334 • Orlando, FL 407.313.9113 • Columbia, SC 803.447.0888 •  
sbazzoli@carbonservice.net • jbelmore@carbonservice.net • hwharter@carbonservice.net  
www.carbonservice.net



# Distributed wastewater treatment: A better mousetrap for Florida's algae problem

By BRIAN LAPOINTE, PhD

In Florida, we've known about the problem for a long time. Excess nitrogen in our waterways linked to nutrient pollution—eutrophication—causes harmful algal blooms.

The HABs deplete the oxygen in the water, and can kill seagrasses and corals that provide food and habitat for manatees and other aquatic life. They also cause fish kills, are ugly and can make the water unsafe for humans.

Until recently the solutions for mitigating eutrophication were limited and typically expensive. But a new sewage treatment system called distributed wastewater treatment, or DWT, is now available that could replace a leading source of reactive nitrogen in the forms of ammonium and nitrate: septic tanks.

Recent tests show this new technology works and, with widespread application, the problem of HABs could be significantly reduced and the state's waterways restored to a more natural and healthy state.

Ann Shortelle, PhD, former executive director of the St. Johns River Water Management District, thinks DWT is a game changer.

"There is no reason why this new method, distributed wastewater treatment, won't work in any area that has septic systems near water resources," she said. "DWT looks like an effective solution and I'm very excited about its potential."

## Excessive algae

The problem of accelerated algae growth has been the subject of academic study and public debate for more than 30 years.

Scientific research has identified septic tanks as a significant contributor of reactive nitrogen to Florida's groundwater and surface water. This is especially true in areas with high concentrations of homes with septic tanks.

Septic tanks can fail for three reasons: poor maintenance, high groundwater levels and Florida's geology.

Many septic tanks are decades old and, if not maintained properly, do not function well and can allow untreated sewage to escape into the environment.

Florida's typically high water table and porous sandy soils also contribute to the problem as they do not sufficiently treat the effluent from septic systems and allow high amounts of nutrients and other contaminants into the groundwater.

These nutrients make their way into local waterbodies where they cause algal growth to explode.

According to the University of Florida Institute of Food and Agriculture Sciences, there are 2.6 million septic tanks in the state discharging about 426 million gallons of wastewater a day into Florida's environment.

As a result, we are seeing an increasing trend of HABs in freshwater, estuarine and marine environments in urbanized areas of Florida—a double whammy for both Florida residents and the tourism industry.

## A cost-effective solution

In the past, most cities solved the problem by building municipal wastewater treatment systems. This is a great solution, but it's not always practical.

Smaller communities struggle to come up with sufficient funding to construct wastewater treatment plants and related collection system pipelines.

Even large communities experience a practical limit to the installation of underground pipes in many areas of Florida because of our flat topography, high water table, sandy soils and limestone geology.

Problems like these can make system installations cost millions of dollars and take years, even decades, to complete.

DWT systems could be the proverbial better mousetrap, offering one solution to the problems created by septic systems and avoiding the extraordinary costs and long delays associated with municipal sewer collection and treatment.

The DWT technology was recently deployed in areas of Apopka, FL, to re-

place septic tanks in a neighborhood near Wekiwa Springs.

Meanwhile, my team at Florida Atlantic University-Harbor Branch in Ft. Pierce worked with the Florida Department of Environmental Protection to conduct tests of the OnSyte Performance DWT system in Lake Hamilton during 2021.

The results of the tests were extremely encouraging. Total Kjeldahl nitrogen levels in effluent from the DWT showed a 95 percent removal rate, from 118 mg/L to 5.3 mg/L.

Ammonia was reduced by 97 percent, from 74 mg/L to 2.2 mg/L.

The DWT effluent had an average of 8.9 mg/L nitrate, lower than

the U.S. Environmental Protection Agency's standard for nitrate in drinking water of 10 mg/L.

The system also removed 92 percent of the fecal coliforms, 96 percent of the total suspended solids, and 96 percent of the carbonaceous biochemical demand.

And, as an alternative to both conventional septic systems and connections of

septic tanks to conventional sewer collection systems, the DWT system is cost effective.

"A septic system typically costs about \$12,000 installed," explained Bryan Nelson, the mayor of Apopka, a city of 52,000 located northwest of Orlando.

"A distributed wastewater treatment system is about \$15,000 installed, so the costs are comparable," he said. "Converting a home to a municipal sewer system costs about \$50,000, so you can put in three DWT systems for the cost of one conversion to a municipal system."

A DWT unit is roughly the size of a septic tank, but they treat sewage much differently.

The DWT treatment process is similar to a municipal treatment plant, utilizing a three-chambered, suspended-growth, activated-sludge sequencing batch reactor with biological nitrogen removal.

The effluent it produces is treated to a level equivalent to basic municipal wastewater treatment. And the use of a properly

functioning drainfield can result in even higher levels of treatment.

The relatively low nutrient levels can then be safely released into the environment with minimal impact.

Furthermore, DWT units are monitored and operated remotely by licensed wastewater utility employees, and the entire DWT system is regulated by DEP at the utility level.

If a DWT unit fails in any way, technicians are immediately notified and the problem repaired without involving the homeowner.

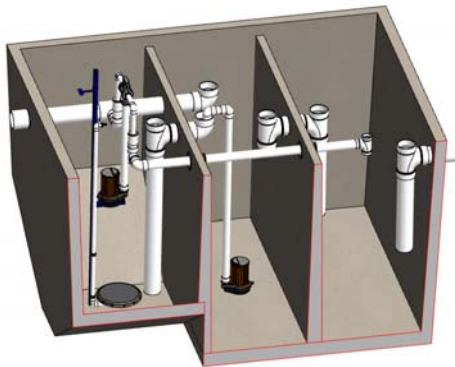
Typically, homeowners may never know a problem occurred. This is possible through the integration of automation, software and communications equipment, all coordinated with an onboard industrial computer and connected wirelessly to a central operation and control system.

"We monitor DWT units at the municipal level with our supervisory control and data acquisition technology," said Nelson.

Apopka, has done a significant amount of testing of DWT units with superlative results.

"If anything goes wrong, we notify the OnSyte people and they take care of the problem immediately," he said.

OnSyte Performance LLC, based in Suwanee, GA, is the developer of the DWT



A three-chambered distributed wastewater treatment unit, illustrated above, is comparable in size to a standard septic tank.

**LAPINTE**  
Continued on Page 14



*While you are protecting the environment, GCD Insurance protects your Employee Benefit and HR needs.*



**GCD Insurance Consultants** is an independent, full-service group benefits agency that represents environmental professionals of all types.

*"GCD found ways for my practice to save money that my current broker hadn't considered. I consider my GCD advisor to be a trusted business partner!"*

**GCD Insurance Consultants** offers a broad base of knowledge in the areas of employee benefits, payroll and human resources.

**Please call for a free consultation ▶ ▶ ▶**

**Jeremy Enns, Senior Advisor**

- Employee Benefit Consulting
- Group Health Insurance
- Dental & Vision Insurance
- Life & Disability Insurance
- On-Line Enrollment
- Free HR Consultations
- ERISA & COBRA Compliance



**GIONIS, CAULLEY & DILLINGER**  
INSURANCE CONSULTANTS

7416 Monika Manor Dr.  
Tampa, FL 33625  
(813) 818-8805, x-232

## ASTM publishes new E1527-21 standard practice for Phase I ESAs

By NICHOLAS ALBERGO, PE, DEE, D WRE, F ASCE

**W**ell, it's time again to republish the Phase I Environmental Site Assessment standard—as we've done no more often than every seven years since its birth in 1993. Each time, we tweak the standard a bit more in our continued attempt to clarify that which is consistently unclear.

This time we also wanted to address matters that were less generally practiced or understood in 2013. Such issues as self-directed cleanups with no regulatory involvement and how to handle emerging contaminants are addressed. There is also renewed emphases on documentation and the importance of clarifying the scope of service (*i.e.*, what's in/what's out) with the user.

### So, what's new?

While the definition of a Recognized Environmental Condition, or REC, has not fundamentally changed, ASTM added clarification regarding what is to be considered a "likely" release. For the purposes of the definition, "likely" is that which is neither certain nor proved but can be *expected or believed* by a reasonable observer based on the logic and/or experience of the environmental professional, or EP, and/or available evidence, as stated in the report to support the opinions given therein. In other words, for something to be likely requires more than what "might," "could," "may" or "has the potential" to cause a release. "Likely" means that a release to the environment is expected, and you are prepared to provide documented support.

Identifying a Controlled Recognized Environmental Condition, CREC, or a Historical Recognized Environmental Condition, HREC, requires a multi-step process that must be reflected in the report. When determining whether a REC has been "addressed to the satisfaction of the applicable regulatory authority or authorities with hazardous substances or petroleum products allowed to remain in place," the EP must review reasonably ascertainable documentation *identifying the control* issued by the applicable regulatory authority or authorities, or, in the case of self-directed actions, *documentation and relevant data* that satisfy risk-based criteria established by the appropriate regulatory authority or authorities.

If new conditions or information have been identified, such as, among other things, a change in regulatory criteria, a change of use at the subject property or a subsequently identified migration pathway that was not previously known or evaluated, the EP must include the rationale for concluding that a condition at the subject property is or is not currently a REC or a CREC. Such effort will necessarily require additional work and/or expertise by those involved.

Other matters of interest in the new standard include a renewed emphasis on the review of adjoining properties. Recall that "adjoining" properties are not the same as "adjacent" properties in that adjoining includes properties on the other side of a street, road or other public thoroughfare separating them. During the review of any historical sources, it is essential to keep in mind any relevant observations connected to an adjacent property that has since become a street or public thoroughfare and thus not adjoining anymore. Keep in mind that a "contiguous" property is different from an adjoining property, which is another reason why examining property use under current roads is essential.

Another point of emphasis is the user's responsibility to search for environmental liens, and activity and use limitations, or AULs. The user requirements *do not* impose the EP's responsibility to review land title records or judicial records for environmental liens or AULs. However, the EP *shall request* that the user provide the results of user-performed AUL and environmental lien searches. The EP *shall describe* whether they received the environmental lien and AUL search results in their report. And while you are at it, this is a good time to document whether (or not) the EP received answers regarding any self-directed or other de minimis cleanup activities conducted at the subject property.

We have also defined the term "significant data gap" as a data gap that affects the ability of the EP to identify a

REC. The standard now directs that if a significant data gap is identified, the EP shall comment in the opinion section of the report on how the missing information that caused the significant data gap affects the EP's ability to provide an opinion as to whether the inquiry has identified conditions indicative of releases or threatened releases in, on, at or to the subject property.

If there is a significant data gap, the EP needs to discuss whether additional information would likely assist the EP in determining whether a REC or CREC exists.

This discussion *is not* intended to constitute a requirement that the EP include any recommendations for additional inquiries or other services, but simply to alert the user that additional out-of-scope services may assist in clarifying that which is missing, for example, a manufacturing facility is locked and cannot be inspected. In this instance, the opinion is that access would help in removing the significant data gap.

### The fuzzy stuff

The E1527 standard practice has never explicitly addressed requirements of any local, state or federal laws other than the all appropriate inquiries provisions of the Landowner Liability Protections to CERCLA. But the times, they are changing in the eyes of many. This paradigm shift is why there needs to be a renewed emphasis in regards to, among other things, interviews with local agency officials. This effort was *never* intended to simply amount to a request to identify any file connected to the subject property. Such an interview is about understanding whether or not there are other "good commercial and customary practices" performed in the locale of the ESA. Are there "obvious" environmental files or reports that should be evaluated pertaining to, for instance, local landfill databases, cattle dip vats, PFAS, wellhead protection, etc.?

Also, keep in mind that many states and other jurisdictions have differing definitions for terms used throughout the ASTM practice, such as "release," "disposal" and "hazardous substance." Recognize that interpretations of the presence of RECs may be incorrect if the EP does not understand such variations. For example, old dredge material in Florida placed on land before regulations are not considered "disposal" and contaminants such as arsenic that are present are not considered a "release" unless moved from their original disposal site.

EPs are cautioned and encouraged to consider any differing jurisdictional requirements and definitions while performing a Phase I Environmental Site Assessment.

## Reflections: A brief walk down memory lane

By STEVE HILFIKER

**W**here would we be without Mike Eastman and the *Florida Specifier*? Below Mike's email signature block, it states "*Florida Specifier*, published for over four decades. That's unheard of in modern times ..." I agree.

I cannot overstate the value of the *Specifier* to our environmental industry. It is, has been and will continue to be the go-to resource for environmental industry news and information.

I think the best way to demonstrate gratitude to our friend Mike for all the things he has done for us over the years is to take a walk down memory lane with him. It would take a year's worth of *Specifiers* to document all of it, but these thoughts are what come to mind this evening.

The U.S. Environmental Protection Agency formed in 1969, but the industrial revolution that began in the 1800s provided us with more than a few messes to clean up.

The 1970s brought us federal legislation such as the Clean Air Act and the Clean Water Act, among others, and set the table for our industry.

More advanced policy emerged in the 1980s with tank registration and federal UST requirements, CERCLA and the Superfund amendments, including the phrase "all appropriate inquiry, consistent with good commercial practice."

The Fleet Factors case that brought environmental liability to lenders in 1990 was also significant. We look back on those days somewhat affectionately and call them the dark ages. We were cutting our teeth.

Our industry started to develop momentum in the 1990s and Mike Eastman and the *Specifier* told the story.

If it wasn't for Mike, the Florida Remediation Conference would not be what it is today. In fact, it would not be at all.

I write this column in the Rosen Centre Hotel after a well-attended 2021 FRC conference with rejuvenated colleagues in the environmental remediation industry. What a pleasure to see industry veterans gather to collaborate in a forum that is recognized as one of the best environ-

mental technical conferences in the Southeast U.S. Substances outside the scope of the standard practice, for example, PFOA, PFOS, GenX and many other substances that are not hazardous substances under CERCLA, may be regulated under state law, and they may be federally regulated in the future. Although the presence or any release/threatened release of these substances are "non-scope considerations" *in the strictest sense*, if the presence of such is obvious, especially at airports and military bases where fire-fighting training occurs, or if the identification of such is considered "good commercial and customary practice" in the region, the EP may nonetheless decide to include such substances in the defined scope of work for which the EP conducting the Phase I ESA is engaged.

Several states have individually designated certain PFAS/PFOA as hazardous substances, and some have even established standards. In these instances, it may be appropriate to identify such emerging contaminants and offer an opinion regarding their presence, and perhaps a statement regarding additional investigation. Per the standard and in those instances where a Phase I ESA is performed to satisfy both federal and state requirements, or as directed by the report user, analysis and/or discussion of these substances can be offered in the same manner any other non-scope consideration.

Lastly, a word of caution to all. While most firms use the services of individuals that qualify as environmental professionals, if a non-EP is involved, there is a heavier burden on the EP that signs the report. Such responsibility should be reflected by more than one hour charged on a timesheet coinciding with the day the report when out the door. Remember that ASTM dictates that the ESA be conducted by an EP or conducted under an EP's *supervision or responsible charge*. This means that the EP must be involved in planning the interviews and the site reconnaissance. The EP must review and interpret the information used to form the basis of the report's findings, opinions and conclusions. This can't be accomplished in an hour.

*Nick Albergo, PE, DEE, D WRE, F ASCE, is a senior advisor at GHD Services in Tampa, co-founder and long-time chair of the Florida Remediation Conference and the former ASTM E50.02 Vice-Chair on Environmental Assessment, Risk Management and Corrective Action. He has shaped the rules and regulations in everyday use throughout the U.S. as one of the primary authors of the ASTM E1527, 1528, and E1903 Standard Practice for Environmental Site Assessments.*

mental technical conferences in the Southeast U.S.

If it wasn't for Mike, many of our careers would not be what they are today. The *Specifier* has always welcomed and encouraged technical columns from various stakeholders and practitioners in the environmental industry. That is, and hopefully will continue to be, what makes the *Specifier* such a unique resource.

As a guest author since the 1990s, I've worked with Mike on a variety of environmental issues that have led to momentum-gathering consensus and advancement of concepts for which there would have been no other equivalent outlet. This has been true for many in our field and Mike has always been a tremendous promoter for our industry.

Over the years, Mike has facilitated industry surveys, providing a confidential portal for practitioners and stakeholders to share their views openly on a variety of topics that have helped us shape environmental policy.

Through the *Specifier*, the development of the Petroleum Restoration Program has been documented since the mid-1980s, from reimbursement, through pre-approval, to current operations.

PRP events and initiatives such as advanced cleanup, new remediation technologies, environmental forensics, the 2009 bonding year, LSSI, the transition of operations in 2013, ongoing amendments to Florida Statute 376.3071 and the COVID-induced PRP pause were all chronicled on the pages of the *Specifier*.

The work of industry leaders, including thoughts presented at the conference today to advance constructive ideas, should lead to further improvements and streamlining of efficiency in the PRP. Mike has allowed us to document all of it.

As we develop ongoing improvements to the petroleum program, the *Specifier* will remain a resource to communicate what we're doing from the highest levels of environmental policy to the local conference rooms.

In 1991, as the former Florida Environmental Assessors Association, currently INSTEP, was trying to develop a standard for Phase I Environmental Site Assessments,

**HILFIKER**

Continued on Page 11

*Florida*  
**Specifier**

Michael R. Eastman  
Editor  
mreast@enviro-net.com

The *Florida Specifier* welcomes columns, articles and letters to the editor on any subject or issue pertinent to the environmental, regulatory and technical areas the newspaper covers. We reserve the right to edit all submissions for newspaper style and publish submissions on a space-available basis only. The opinions expressed on this page are those of the authors.

## HILFIKER

From Page 10

the *Specifier* was a tremendous resource for sharing our ideas.

And when ASTM began developing the national standard, we had to put our Florida-specific Phase I ESA SOP on the shelf, but we were all able to follow the emerging developments because industry professionals educated us on the pages of the *Specifier*.

In the early to mid-1990s, as the EPA was developing lender liability protection leading to the secured creditor exemption, most of us learned about that for the first time by reading Mike's publications.

When the dry-cleaning program was developed in 1994, the messages about liability protection, funding and the sampling necessary for eligibility were covered in the paper.

Do you remember filling out those screening forms requiring only one hot sample to get a facility eligible? Do you remember how it was supposed to be a long-term eligibility window, but they cut it short due to minimal funding? Although somewhat distressing to many in the field at the time, Mike provided us with the outlet to communicate that information.

After the late Florida Gov. Lawton Chiles issued the executive order on March 27, 1995, to stop the old reimbursement program, our industry was able to get creative with things like risk-based corrective action and related strategies to manage environmental risk on petroleum sites. These concepts were extended to numerous contamination sources, not just tanks.

Investors started to realize that the "buy, cleanup and sell" business model, like purchasing and flipping an old house, was cost-effective for those with risk tolerance, a good consultant and wise attorneys (not so much if any of those pieces were missing).

That idea, developed on the pages of the *Specifier*, motivated me to purchase a three-workstation construction trailer in 1999 and open an environmental business in the backyard of property I owned in Golden Gate Estates.

The original stakeholders and practitioners of the Florida Brownfields Association conveyed their messages and developed the Florida Brownfield Act in 1997 with support and communications provided by the *Specifier*.

Communities across our state are better off now due to the redevelopment and revitalization that has been documented in articles written in the *Specifier*. The city of Fort Myers was one of the initial recipients of an EPA grant, and if you have not been there lately, please come visit our thriving downtown area.

Environmental insurance took over in 1999 as the method to meet the federal financial responsibility requirements for owners of underground petroleum storage tanks. That led to significant disputes as to whether contamination in a laboratory report was from a new release or not. Some findings were second discoveries of the original discharge, but many were new releases.

The niche market of petroleum environmental forensics was advanced through a four-part series in the *Specifier* on this emerging and highly litigious issue.

Does anyone remember the impact of environmental insurance policies on the Phase I ESA industry in the late 1990s? That only served part of the market it needed to cover, but consider the role of environmental insurance today.

Large real estate transactions with significant environmental issues would not close without the development of environmental insurance policies to mitigate the risk for both buyers and sellers of impacted property. Chances are, many of you learned about this on the pages of the *Specifier*.

Many best management practices were developed over the years for facilities like gun ranges, golf courses, and industrial, agricultural and related facilities that required proper storage, handling and disposal of hazardous substances or petroleum products. Same for DEP guidance documents, legislative amendments, rule-making activities and new policy an-

nouncements—and most of them were reported to you through the *Specifier*.

We settled into a pretty good rhythm as we turned the century, developing our craft, which is an interesting mix of art and science sometimes due to the communication skills necessary to convey risk management strategies.

Florida's real estate market boomed until the Great Recession of 2008 when we all had to take a serious look at our service portfolios. Special asset and foreclosure services unfortunately became a new market.

Do you remember how many tanks were upgraded as part of the 2009 double-walled tank deadline? Were you able to participate in the environmental insurance claims associated with the new releases reported in tank closures?

Chances are you read about many of the emerging market opportunities, such as the Limited Source Removal Initiative for tank removal projects associated with the tank deadline, and the Low Scored Site Initiative that developed after the cleanup program had to be bonded in 2009, and we needed a method to increase the percentage of closures in the petroleum program.

### A personal perspective

I never wrote about my personal story of growing up within a cancer cluster. Perhaps I'll extend this into a full article some day.

A gravel pit to the south and a spring to the north of the rural western New York neighborhood I grew up in formed the source and terminus of a long elliptical trichloroethylene plume.

Heavy equipment at the gravel pit was cleaned using chlorinated solvents and a nearby spring created a hydraulic gradient pulling the plume beneath our homes that used potable drinking water wells.

Like straws in a toxic soup, the wells were an exposure pathway. At least seven people died of brain tumors. My family was spared because we used a poorly drilled well in a sulfur zone and drank bottled water. But many of my neighbors were not so lucky. I didn't learn of this true-life nightmare until I was 15 years into my career.

Environmental risks must be taken seriously, but most sites on which we work are not like Love Canal or Chernobyl. Our duty as consultants is to accurately characterize risk. Significance may be the most meaningful concept for an environmental consultant.

I have a new personal chapter of resiliency and recovery that parallels what the state of Florida needs to do right now. With the population growth our state has experienced since 1950, we are putting our water resources at significant health risk. Water is our life-blood, our most vital natu-

ral resource. It is time for more redevelopment initiatives. We must protect our greenspace and water quality, and manage our aquifers—or we will need to figure out how to fund desalination plants. That would be an unwelcomed challenge.

Resiliency and sustainability, recovery and revitalization, restoration and remediation ... these are accurate words to describe life over the last two years.

This topic should be advanced into an entire column of its own in a future issue of the *Specifier*, but for now I would just simply like to summarize. I have a duty to share this story with you.

My heart failed on July 29, 2020. But my sister got me to Tampa General Hospital in time for an intra-aortal balloon pump to keep the blood flowing.

I was provided with seven heart donor offers within three days, and had a transplant operation on Aug. 3.

Meanwhile, I emerged from the ICU to find out that the petroleum program had been paused and the impacts of the pan-

demie were disrupting environmental cleanup funds. So, in September of 2020, revitalization occurred for me in more ways than one.

The doctors expected 40 percent exercise recovery in the cardiac physical therapy rehab program and I achieved 209 percent. Ninety days after being discharged from the hospital, I climbed Sharp Top Mountain in Jasper, GA.

I share these details so you don't get the wrong idea about any potential health issue; the disease was contained entirely in my removed heart. I now enjoy a clean bill of health, thanks to a selfless organ donor named Daniel. That, and his age of 31 at the time of transplant, are all I know about the man who is the source of abundant energy and a passion for living that can be gained in no other way.

The disease I had (past tense) is called cardiac sarcoidosis and it is found more

## HILFIKER

Continued on Page 12



Pace Analytical®

Florida Laboratories

- Emerging Contaminants: PFAS, TOF, TOP Assay, 1,4-D
- 80+ facilities to meet your convenience needs
- Full Drinking Water
- Vapor Intrusion
- Tissue and Biota

Visit [pacelabs.com](http://pacelabs.com) to learn how we Deliver Science Better!

# AΩTC

YOUR EH&S AND EMERGENCY RESPONSE COMPANY

EMPLOYEE-OWNED

#1 Trusted Environmental Consulting, Remediation, and Industrial Services Company

Corporate Office: Cocoa, FL

Emergency Response Center: Newberry, FL

(321) 445-9845 • [www.a-otc.com](http://www.a-otc.com)

Service locations throughout the Southeast

## SUPPORTING YOUR ENVIRONMENTAL SERVICE NEEDS



Unequaled service. Solutions you can trust.  
[USEcology.com](http://USEcology.com)

### INDUSTRIAL SERVICES

Industrial cleaning and maintenance including vacuum pumping, water blasting, sump cleanup, facility and equipment cleaning.

### STANDBY/OSRO

NRC, a US Ecology company, is the largest commercial USCG approved OSRO, with certified crews offering unparalleled marine and land response capabilities.

### EMERGENCY RESPONSE

Extensive trained team providing 24/7/365 fast, effective and compliant services to respond to any spill or natural disaster. (800) 899-4672

### WASTE TREATMENT

Tampa location offers waste treatment, lab packing, LTL, HHW. Only TSD in Florida permitted to stabilize metal bearing waste.

(800) 624-5302  
7202 East Eighth Avenue  
Tampa, FL 33619

# Coalition of environmental groups files lawsuit over Piney Point cleanup

By ROY LAUGHLIN

In late September, four environmental advocacy groups filed suit against responsible parties for the Piney Point phosphate plant. The plaintiffs include the Center for Biological Diversity, Tampa Bay Waterkeeper, Suncoast Waterkeeper and Our Children's Earth Foundation.

At issue is the Florida Department of Environmental Protection's plan to dispose of the plant's wastewater through deep well injection into the deep Floridan Aquifer.

Jaclyn Lopez, Florida director and a senior attorney at the Center for Biological Diversity, said the suit was filed against DEP, Gov. Ron DeSantis, HRK Holdings LLC and the Manatee County Port Authority over imminent and substantial harm from Piney Point wastewater releases.

The suit alleged several legal failures arising from effluent releases to Tampa Bay and area groundwater. First, it claimed that the defendants have known for years about the containment structure's potential for failure.

Second, the suit alleged that the facility is not entitled to the Bevill Amendment exemption that shields mining waste from classification as a "hazardous waste." That amendment limits responsible parties' liabilities and responsibilities.

Without the exemption, DEP and HRK

have to do more than dump their gypstack's wastewater down a hole.

Finally, the suit claimed that the facility violated the terms of its National Pollutant Discharge Elimination System permit.

The lawsuit brief discussed the 20-year history of the plant that includes three substantial releases following failures of containment systems and liners.

"For decades, Defendants have known that the Piney Point Phosphate Facility threatens imminent and substantial endangerment to Floridians' lives, health and environment," the complaint alleged. "(The) Defendants correctly predicted that the impoundments at Piney Point could not safely retain anticipated precipitation and stormwater. Nevertheless, Defendants took no corrective action to redress this known risk."

Even in the short term, HRK predicted the failure a year ahead of time. Both DEP and HRK were aware—for at least a year before the 2021 discharge—that the impoundments were approaching their maximum storage capacity, the suit claimed.

In a Feb. 2, 2021, public presentation, HRK explained that Piney Point was quickly losing its ability to safely retain precipitation and process wastewater. The presentation concluded that, based on current water volumes, action was needed as soon as possible.

The plaintiffs also asserted that mining wastes, including phosphogypsum stored in gypstacks, cannot be classified as hazardous waste under the federal Resource Conservation and Recovery Act because the 1990 Bevill Amendment to the act exempted phosphogypsum wastes.

The Piney Point facility was a fertilizer production facility, not just a phosphate beneficiation facility.

The plaintiffs argued that the Piney Point gypstack is not exempt because phosphate wastes are mingled with fertilizer synthesis waste. That includes monoammonium and diammonium phosphate residuals and copious amounts of ammonia.

The impoundment also holds sulfuric acid production wastes, sulfuric acid and phosphoric acid. And in the more recent past, the Port of Manatee used the impoundment to dispose of 3,000,000 cubic feet of dredge spoils.

Phosphate beneficiation and processed water without any other wastes could be managed under the RCRA as "mining waste. However, comingling of Bevill-exempt phosphoric acid production wastes with wastes from phosphate production processes vitiates the hazardous waste, the court filing noted.

The second set of findings in the legal brief noted that DEP and HRK knew that the gypstack's supposedly impermeable lining was failing for some time. The failures persisted for years in both the numbers and areas affected.

The third section of the brief focused on the releases as violations of the Clean

Water Act. The salient points were that HRK did not meet the essential maintenance obligations under its agreement with Florida to ensure that all aboveground impoundments are operated, maintained and inspected in accordance with Chapter 62-672, F.A.C. The brief alleged multiple examples of failure to follow state law.

If the environmental groups prevail in the lawsuit, the deep well injection plan now underway could be in jeopardy. The plan presumes that the process wastewater and other pollution is exempt hazardous waste, which it is not, they claim.

"Deep well injection of RCRA hazardous wastes presents an imminent and substantial endangerment to the environment because such hazardous waste will irreparably contaminate the aquifer," they said.

DEP has already been disposing of treated Piney Point wastewater through deep wells. Some of the wastewater is now being treated using sorptive media and trucked to a nearby Manatee County wastewater treatment plant whose effluent is pumped into deep injection wells.

The suit is currently under a motion to dismiss, a usual occurrence. The reply to the motion is due by the end of January.

CBD's Lopez said the plaintiffs expect the court to set a hearing date after the January submission.

The hearing's significance could extend beyond Piney Point's gypstack if the court does not allow responsible parties to use the Bevill Amendment. And that could lead to improvements in the way Florida's relict gypstacks are managed in the future.

about in previous issues of the *Specifier* over the last year.

Our industry had quite a recovery in 2021, with a record setting environmental budget in the 2021 Florida legislative session. Let's use those funds wisely to restore the health of Florida's surface and ground waters.

Resiliency and restoration efforts must now be applied to our beautiful state if we want to keep our waters blue. If we expect people to continue to visit our white, sandy beaches and amazing theme parks, then we must provide them with clean drinking water.

If we're going to continue to strike a balance between environmental protection and economic development, then we must accelerate smart growth management practices and really make them work through environmental policy. Now.

Stay tuned to the *Specifier* to see how we do with this.

Mike, please stay in touch, please visit us at conferences around the state. Please read future issues of the *Specifier* so we can keep you posted on what's happening in this environmental industry that you have fostered for so many decades.

On behalf of all stakeholders and practitioners in our environmental industry, thank you for your service and congratulations on your retirement. You have been the best resource, and friend, that the Florida environmental industry ever had.

Steve Hilfiker is the president of Environmental Risk Management Inc. in Fort Myers. He serves on the Florida Ground Water Association Board of Directors, is co-chair of the Florida Brownfields Association Technical Committee, is the founder of the Informal Coalition of Environmental Associations and is a member of Environmental Professionals of Florida. He can be reached at [steve@ermi.net](mailto:steve@ermi.net).

Editor's note: I would like to point out that I never conducted a site assessment, never took a sample from a monitoring well and never earned a "no further action" letter for a client. What I did do over the past few decades was assign stories and make sure all the words were in the right order before ink hit newsprint. While I humbly accept and appreciate Steve's kind words, the real credit should be directed to all of you—the environmental professionals in the trenches, getting their jobs done every day. I tip my Tampa Bay Rays' ball cap to all of you. Thank you!

**PLUME STOP**  
Liquid Activated Carbon

**PlumeStop  
Eliminates  
PFAS Risk**

**Proven in Multiple Field  
Applications**

Learn more at [www.pfastreatment.org](http://www.pfastreatment.org)  
and [www.REGENESIS.com](http://www.REGENESIS.com)

**REGENESIS**

© 2021 All Rights Reserved. PlumeStop and REGENESIS are registered trademarks of REGENESIS Bioremediation Products, Inc.



**HILFIKER**  
From Page 11

often than not during autopsies. I shared this information earlier today with my colleagues at the Florida Remediation Conference.

You, a family member or someone you know may have this now and not know it. If you have dizzy spells, a strange unexplained dry wispy cough, shortness of breath or other heart failure symptoms, please ask your doctor about cardiac sarcoidosis. I'm convinced that many sudden cardiac arrest victims had this disease; they just never knew it.

I'd love to share more with you, my fellow environmental practitioners, about the remarkable story of recovery that is available through medical technology and the passion to persevere for your own health, for your family, for your business and for the industry that you love. I have not felt energy like this in years.

This energy enabled the development of the Informal Coalition of Environmental Associations, which you may have read

**TAMPA BAY WATCH**  
Restoring the Bay Every Day

TAMPA BAY WATCH  
DISCOVERY CENTER

PROUD TO BE A  
ESTD  
**member**  
1993  
OF TAMPA BAY WATCH

**Tampa Bay Watch members make our organization stronger and help us expand the reach of our programs each and every day.**

To become a Tampa Bay Watch member, renew an expired membership, or view our membership levels and benefits, please visit [tampabaywatch.org/membership](http://tampabaywatch.org/membership).

**PORT**  
From Page 7

dredged channel, and that dredging impacts may have spread across more than 15 miles of Florida's reef tract.

The initial 16-month, \$205 million PortMiami channel expansion left a distinct path of dead coral in its wake.

To make matters worse, the corps' environmental contractor grossly underestimated the volume of coral killed. According to Miami Waterkeeper Rachel Silverstein, the contractor concluded that only six corals were harmed.

Researchers used the exact same data collected directly from the corps' contractors to calculate the actual number of corals killed and concluded that 560,000 corals had died due to the dredging.

Shortly after the report was published, the U.S. Attorney for the Southern District of Florida, the corps and related federal agencies released a statement indicating a former employee of the corps, Tracey Jor-

dan Sellers, pled guilty to making false statements to law enforcement agents.

Sellers was the lead biologist who oversaw the corps' coral monitoring effort during the Miami Harbor dredging work. At the same time, she was quietly employed and accepting compensation from contractors responsible for regulatory compliance.

Sellers continued to coordinate and advise the corps from 2014 through 2019 on environmental issues including planning and coordinating environmental requirements related to corps projects and reviewing products from environmental consulting firms.

**Improvement alternatives**

In addition to a no-action plan, the corps' other alternatives under consideration for improving PortMiami include widening and/or deepening specific areas within the harbor's channels.

**PORT**  
Continued on Page 16

"In addition, the application failed to provide information such as surveys, plans and procedures that ensure there would be no permanent adverse impact on wildlife of the area."

DEP further noted that "the applicant failed to demonstrate the application weighs in favor of issuance of a permit at the proposed location based on the determinations by the department described above."

DEP's decision also stated that the owners of the site's mineral rights have held those rights for decades without acting on them and that the same mineral owners are the main developers of many of the projects planned throughout eastern Collier County.

As such, they should be aware that there is a high probability for development in and near Immokalee, a condition unfavorable to oil well drilling permit approval.

strong reservations.

"Ultimately, we really need to see more details and more action to know whether this roadmap will translate into the reduction and elimination of these dangerous chemicals," they said.

CR also said that the plan does not remove the need for Congress to act on PFAS legislation and urged lawmakers to keep pushing for reforms.

That statement supported a point Regan made in his address announcing the new action plan, telling both states and Congress that they had important roles to play in regulating PFAS compounds and could do so faster than the EPA can produce rules.

Legislated PFAS regulations have so far been slower than EPA's efforts to bear fruit. Multiple bills for PFAS regulation have been introduced to both the House of Representatives and the Senate, but no significant action towards passage has gained traction.

Recently, California became the seventh state to ban PFAS in food packaging and North Carolina established a 10 parts per trillion drinking water standard for PFAS, a much lower level than the EPA's current 70 ppt health advisory level.

Health professionals, however, have rejected the EPA's current 70 ppt health advisory as insufficiently protective.

Regan may have anticipated such criticism even before he announced the new action plan.

"One thing I've learned throughout my career is (that) trust must be earned," he said. "I know that you need to see action. I believe that the national strategy that we are laying out shows and demonstrates strong and forceful action from EPA, willingness to use all of our authority, all of our tools and all of our talents to tackle it.

"We have a long way to go, but we are going to get this right, together," he said. "Not with empty rhetoric, but with real solutions and with a pledge to hold polluters accountable for the decades of unchecked devastation they've caused."

An initial assessment of EPA's level of success in dealing with PFAS must wait until early next year when a couple of milestones appear on the EPA's action plan timeline.

**PERMIT**  
From Page 8

contaminant transport, and the lack of significant relevance of oil production on the state's economy, as compared to the potential degradation of the environment and its impact on Florida's tourism industry.

In consideration of the comments and concerns, DEP recorded a notice of permit denial on Nov. 5, 2021.

The denial stated that: "Given the strong likelihood of future development near the proposed well, the length of time the mineral interest holder failed to exercise its rights, the theorized existence of a structure that might contain reserves in the middle of the dry holes, and the proposed well's location in the environmentally sensitive Big Cypress Watershed, the applicant has not demonstrated that it meets the criteria for issuance of a permit.

**PFAS**  
From Page 13

human consumption advisories.

In addition, EPA proposed to designate certain PFAS compounds as hazardous substances under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, the Superfund law.

To begin with, the rule will require facilities to report releases of PFAS substances—their locations and amounts.

The "hazardous substance" designation is a significant development because it allows agencies to require responsible parties to remediate source contamination in environmental cleanup projects.

By 2022, EPA will begin studying air emissions as potential PFAS sources.

During the past two years, some influential studies have shown that metal-plating operations and waste incinerators form PFAS contamination islands around them and underneath predominant plumes from their stacks.

The air emissions can lead to both soil and groundwater contamination at troubling levels.

**Reaction to the plan**

On technical merits, the revised action plan included several components that environmental advocates and EPA staffers have endorsed since the beginning.

They include the designation of PFAS as hazardous waste, the release of a drinking water standard for the two octal PFAS fire-fighting substances, a study of food chain bioaccumulation from fish, and the more recent endorsement of characterizing air emission sources that cause significant PFAS contamination.

Positive comments from officials were widespread but often partisan.

The most cogent criticism came from environmental advocacy groups.

Public Employees for Environmental Responsibility characterized the plan as "woefully inadequate," characterizing the agency's proposals as "laying out future promises of planning to plan."

PEER's science policy director, Kyla Bennett, said that "EPA is kicking the can down the road with this plan."

Consumer Reports echoed those sentiments. While endorsing the elements of the proposed EPA plan, the group expressed

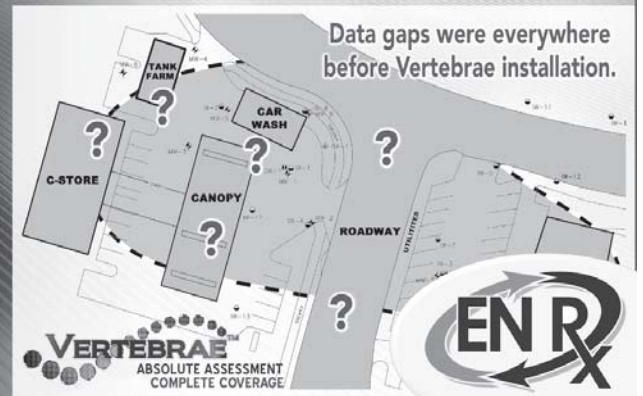
# Environmental Services

IT'S TIME TO SEE THE COMPLETE PICTURE.

**VERTEBRAE™ – UNDERSTAND WHAT'S UNDER YOUR SITE.**

With EN Rx Vertebræ well systems, sampling under buildings, tanks and roadways has never been easier. Get complete plume access without disrupting your business.

- Less Cost
- More Uses
- Less Time
- More Effective
- Less Disruption



## SYSTEMS

- Component rebuild of compressors, blowers, pumps, etc.
- System design and build (AS/VE, peroxide & ozone injection, MPE, etc.)
- System retrofits
- Equipment consulting
- Operation & maintenance
- System rental
- System startup assistance
- System troubleshooting & repair

## ENVIRONMENTAL SAFETY CONSULTANTS, INC.

Professionally Serving Florida Since 1986

LICENSED ENGINEERING FIRM • BOARD CERTIFIED INDUSTRIAL HYGIENIST

- Environmental Permits - NPDES & Air Emissions
- Site Assessments - Contamination & Phase I & II ESAs
- Indoor Air Quality & Industrial Hygiene (CIH)



Bradenton | Clearwater | Tampa | Fort Myers

escinc@verizon.net  
www.escflorida.com

**800-226-1735**

See Web Site for the Complete List of all Services Offered

## SPOTLIGHT

GEOPHYSICAL SERVICES

Your Source for Geophysical Expertise

- In-house geophysical tools  
Microgravity ~ GPR ~ MASW ~ EM  
Seismic Refraction ~ Electrical Resistivity
- Quick response and professional reporting
- Licensed geophysicists and geologists
- SBE Certified

Offices in Miami, Florida  
(305) 607-2377 info@spotlightgeo.com  
www.spotlightgeo.com



GIONIS, CAULLEY & DILLINGER  
EMPLOYEE BENEFITS CONSULTING

**Serving Business Owners for over 20 years for their employee benefit needs**

Contact Jeremy Enns at (813) 818-8805, x 232  
or jeremy@gcdinsurance.com  
www.gcdinsurance.com



**Grow your Revenue Contain your Expenses**

Business Valuations and Strategy

Contact John Waterman at (323) 875-4801



**Professional Environmental Testing & Consulting, LLC**

NELAP certified full service laboratory, specializing in microbiology and wet chemistry for potable and non-potable water. Minority Business certified.

Located in Davie, FL • (954) 440-3537  
www.petc702.com • petc702@comcast.net



### GROUNDING IN EXCELLENCE

- Environmental Assessment
- Remediation & Site Rehabilitation
- Environmental Compliance Consulting
- Indoor Air Quality & the Built Environment
- Occupational Health & Safety Support

Learn more at [universalengineering.com](http://universalengineering.com)



## Florida Specifier

Business Card Ads

Ad size	Dimensions	Annual Rate
Single card	2 1/4" x 1 1/8"	\$425
Double card	2 1/4" x 2 1/4" or 4 3/4" x 1 1/8"	\$725
Triple card	2 1/4" x 3 1/2"	\$1,025
Quadruple card	2 1/4" x 4 1/2" or 4 3/4" x 2 1/4"	\$1,225

Keep your company name in front of thousands of environmental professionals every month at cost-competitive rates. Call (407) 671-7777.

# Environmental Services



## U.S. Environmental

Your source for RENTALS, SALES, & SERVICE

Our device & data experts are ready to provide the **BEST** rental experience possible!

Photo Ionization Detectors	Mercury Vapor Analyzers	Gas Detection Tubes	Well Development pumps
Dust Monitors—Area	Radiation	Sound	Peristaltic Pumps
Weather Stations	Leak Detection	Thermal Imaging	Submersible Pumps
Remote Data Acquisition	Air Pressure	Water Level Meters	Water Sampling
Combustible Gas Monitors	Air Sampling	Interface Probes	Soil Sampling
Flame Ionization Detectors	Anemometers	Pressure Transducers	XRF Analyzers
Gas Analyzers	Dust Monitors—Personal	Flow Probes	and so much more...
Landfill Gas Monitors	Indoor Air Quality	Multiparameter Devices	

Tampa, FL (813) 628-4200 Also convenient locations in MA, CT, NJ, & IL!

## RENT FROM THE BEST

24/7 Nationwide Service ... RENTALS • SALES • PARTS • REPAIRS

---

2930 Parkway St.  
Lakeland, FL 33811  
(813) 501-3415  
www.vacuumtruckrentals.com

- Air Machines
- Excavators
- Liquid Rings
- Container Trailers
- 100-BBL Trucks
- Easement Machines
- Portable Cameras
- Stainless Steel
- Combos
- High-Rails
- Liquid Vacs
- Scrubber Vacs
- Tankers
- Camera Vans
- Roll-Offs
- Road Tractors

Branch Service Area: All of Florida and Georgia

Providing quality drilling services with quality people and equipment

Environmental drilling • Exploration  
Geotechnical drilling • Wire line coring  
All terrain rigs • Sonic

(352) 567-9500 • Toll-free: 1-800-487-9665  
www.hussdrilling.com

Dade City

### GPR Services

- Private Utility Markouts
- Ground Penetrating Radar (GPR)
- Concrete Scanning with GPR
- Pre-Excavation Utility Clearance
- Geophysical Investigations

### Drilling Services

- Best Remote Access Equipment in South Florida!!
- Remote 420M Dolly Probe 23" Wide
- EP200 Auger Rig Only 36" Wide
- Monitoring Wells Installations
  - DPT Geoprobe Sampling
- Hollow Stem Auger (HSA) Drilling
- Call Us Today for Competitive Rates!!

Deeefield Beach, FL • Mount Laurel, NJ  
(800) 596-7472 • www.enviroprobe.com

### Archaeological Consultants Since 1999

THOMAS PENDERS AND ASSOCIATES, LLC  
Titusville, FL

321-307-0075  
tpendersconsulting@gmail.com  
www.pendersconsultants.com

Environmental Risk Management, Inc.

Licensed Engineering & Geology Firm  
Site Assessment • Remediation  
Fort Myers • Tampa • Jacksonville

Phase I & II ESA, Indoor Air Quality,  
RBCA, Consulting and Forensics

Steve Hilfiker | President  
1-888-368-6468 • 888-ENV-MGMT  
info@ermi.net • www.ermi.net

Serving Florida since 1999

Catherine Katsikis  
President/Principal Scientist

### LDCFL-NAOS Consulting, LLC

Training - Audits - Data Validation - QA Support

---

**Training:**  
Ethics and Data Integrity  
Corrective Action/Root Cause  
Quality Systems ... and more

Internal Laboratory and Field Audits  
QA Management and Technical Support  
ADaPT/ADR Validation and Training  
Laboratories and Field System Start-up  
3rd Party Data Validation  
3rd Party Laboratory and Field Audits

catherinekatsikis@gmail.com  
(561) 512-9956

UTILITY LOCATION SERVICES  
FOR ALL YOUR ENVIRONMENTAL NEEDS

BORE HOLE CLEARANCE  
SITE SURVEYS • USTs • BURIAL PITS  
GPR • EMI • MAGNETICS

WWW.GEOTEKSERVICES.COM  
SALES@GEOTEKSERVICES.COM

FAST RESPONSE - SERVING ALL OF FLORIDA

Environmental  
Accounting Services

Accounting Solutions  
for your Business

---

Compiled Financial Statements •  
QuickBooks Reconciliations •  
QuickBooks Setup and Training •  
Payroll • Sales tax • Financial  
Projections • Budgeting

Contact Us:  
727.785.4447  
pdr-cpa.com

## Digital Access

to monthly issues of the  
*Florida Specifier* now available at  
[www.enviro-net.com](http://www.enviro-net.com)

### LAPOINTE From Page 9

technology and provides local support for communities that use the system through its offices in Florida.

#### The transition question

The costs of transitioning communities to DWT systems is, in some cases, being subsidized by grants from the DEP, which just completed DWT testing in Lake Hamilton.

By all measures, the tests showed that DWT units greatly reduce nitrogen levels in discharged effluent, making it much safer to release into the environment.

While this article provides preliminary performance data, we plan to publish the results of the tests in a peer-reviewed technical journal as well as a national engineering publication.

The process to transition from septic tanks to DWT systems is simple enough. Local utility departments or contracted technicians conduct a routine home inspection before scheduling a DWT unit installation.

Plumbing modifications to the home are typically unnecessary, and the complete project takes only a few hours to complete.

Once the unit is installed, the homeowner will notice no change in wastewater disposal. The homeowner pays a monthly wastewater fee similar to the cost of municipal treatment. The system is maintained by the local water or wastewater utility.

Extended power outages, which are common in Florida during hurricane sea-

### FEDFILE From Page 2

son, have no impact on homeowners using DWT service because the treatment units do not require electricity to receive wastewater or pass it through the system. DWT units won't cause backups; toilets and sinks can be used without issue.

#### The healing process

The problem of excessive algal blooms from reactive nitrogen pollution has plagued our state for decades, and it is getting worse as Florida's population grows.

The tide, however, may be turning as more people transition from septic tanks to DWT systems. DWT technology has been shown to significantly reduce the amount of reactive nitrogen entering the environment.

As concentrations of ammonia and nitrate in the waterways diminish, Mother Nature can begin the healing process. And it doesn't take long.

Soon, local surface waters get cleaner and healthier, seagrasses can grow, fish populations rebound and manatee habitats are restored.

"We must protect our water quality," said Nelson. "We want the springs and rivers to be healthy and accessible not only for our kids and grandkids, but for our great-great grandchildren, too."

"We are determined to make a positive impact on our environment, and distributed wastewater treatment may be our best opportunity to solve the problem of accelerated algae growth."

Brian Lapointe, PhD, is a research professor at Florida Atlantic University's Harbor Branch Oceanographic Institute.

lion lead service lines still in use across the country, address the threat of perfluorinated alkyl substance pollution in drinking water and soil, and protect critical water bodies.

The bill will also provide funding to EPA programs for emerging contaminants, including \$4 billion to the Drinking Water State Revolving Fund and \$5 billion for Water Infrastructure Improvement for the Nation grants.

The Protected Regional Waters Program is slated to receive \$1.7 billion to support geographic programs.

The National Estuary Program is written in for \$55.4 million of the total \$267 million for surface water programs. The funding will also support the Gulf Hypoxia Program and others.

The EPA's PFAS Chemical Action Plan's lake study for PFAS contamination, a new component of the plan, is in this category as well.

Florida will benefit from \$53 million in spending on Gulf of Mexico programs, and South Florida will get \$16 million. This funding is in addition to National Estuary Program appropriations. Florida is home to four of the 28 NEPs across the country.

More than \$5 billion is now available to clean up contaminated sites.

Superfund cleanup will receive \$3.5 billion and an additional \$1.5 billion will be available to scale up brownfield redevelopment work.

Environmental remediation is a significant component of brownfield projects in Florida. These projects will provide improvements to waste management and recycling systems.

Programs to restore economic vitality to communities that have been exposed to pollution are slated to receive significant financial support.

An additional \$100 million will go to the Pollution Prevention Program. It is through this program that the Biden administration intends to deliver on its promises for environmental justice.

It will focus on helping businesses reduce toxic pollutants, cut water usage, improve efficiency and lower business costs.

Additional infrastructure-funded EPA programs will be announced in the coming months, according to the agency.

In the bigger picture, Florida could receive as much as five percent of total infrastructure appropriations, with a chunk of that finding its way to the state's environmental industry.

Infrastructure bill includes funding for human health, environmental stewardship. On Nov. 5, Congress passed its long-awaited infrastructure bill.

More than any other past infrastructure investment bill, this one provided multiple programs that benefit the environment and relieve burdened communities of legacy environmental contamination.

It is the largest single federal investment in clean water and water resource stewardship ever made.

The bill included more than \$50 billion that will be used to replace 6-10 mil-

lawmakers to restore funding to the \$125 million level typical of recent years.

That funding maintained PRP's status as Florida's largest, most active contaminated soil and water cleanup program.

Natasha Lampkin, FCCM, FCCN, PRP's administrator with DEP in Tallahassee, outlined the program's status in her talk.

Next, John Treadwell, PE, professional engineer II with DEP in Tallahassee, described petroleum-contaminated site closures, noting that program administrators have become increasingly willing to approve site closure with no additional monitoring. More than 1,000 PRP sites are currently post-remediation, and post-remediation monitoring has shown little or no off-site contamination.

Many of these sites may be ripe for closure with no additional monitoring required. That could free up a useful sum of program funding for sites requiring more intensive remediation activities.

Matthew Ingham, PE, FCCM, an environmental administrator at the PRP, presented a fast-paced presentation showing how PRP's Advanced Cleanup for Redevelopment effort was making significant progress in supporting cleanup on selected sites and site packages with substantial redevelopment potential.

Expanding the scope of the first session, Nick Albergo, senior advisor with GHD Services in Tampa and FRC co-founder, provided a useful overview of the significant changes in ASTM International's recently revised Method E1527-21, Phase 1 Environmental Site Assessments.

The revised ASTM standard clarified "de minimis" discharges. They are now more succinctly defined as "related to a release that generally does not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies."

And more generally, Phase 1 ESA investigators are directed to concentrate on discharges and their resulting contamination.

Two of the changes received special attention from the conference audience. First, the delineation of professional responsibilities for those involved in Phase 1 ESAs was expanded in E1527-21.

Staff listed as having a role in Phase 1 assessments must be engaged in a meaningful way related to their professional qualifications throughout the critical aspects of any assessment.

The use of "professional responsibilities" brought a query from an attendee who noted that licensed professionals, including professional engineers and professional geologists, had identical terminology in their licenses including an extensive list of explicit professional responsibilities.

The questioner asked why the use of identical language occurred in the new standard and if there was a conflict of meaning or intent arising from that use.

Albergo explained that the use of identical terminology was intentional and carefully considered. The intent of the revised standard was that licensed environmental professionals should apply their license's professional requirements to the Phase 1 ESA, and those specific duties will differ by discipline.

A license will protect professionals in disputes when they follow their explicit license requirements to meet the more general ASTM E1527-21 standard.

In other words, licensed professionals should explicitly adhere to their specific professional license in the investigation and analysis, but follow the ASTM standard in preparing the report of their professional efforts.

**Urban redevelopment**

The diversity of environmental industry markets and services was the subject of further presentations.

Patricia Mills, president of Mills Environmental Assurance Services LLC in Suwanee, GA, provided an in-depth dis-

cussion of the necessary value and security that insurance brings to any redevelopment project. In fact, insurance is often the only way to bring lenders to the table to fund a project.

Insurance policies "ensure against unknown contaminants," Mills reminded her listeners several times. In addition, it offers developers and consultants financial security.

She noted that the insurance applicant must have a Phase 1 assessment in hand before applying for insurance related to brownfield development.

Other speakers focused on funding sources for remediation projects.

Multiple presentations described the redevelopment of urban and suburban areas as the current driving force behind remediation.

Michael Goldstein, Esq., managing shareholder with The Goldstein Environmental Law Firm PA in Coral Gables and long-time FRC participant, presented a spreadsheet showing how profitable the brownfields program can be.

The recent emphasis on profits from remediated properties marks a dramatic expansion in the conceptual basis of Florida cleanup programs.

The urgent need to protect Florida's surface water and groundwater drinking resources from petroleum spills was the

primary justification for PRP funding at program inception in the 1990s.

This year, the rationale behind many PRP cleanups was heavily influenced by the redevelopment potential of the contaminated property.

Thus, economic value rather than resource conservation is a dramatically expanding justification for large parts of PRP spending.

Brownfield programs have always been about redevelopment that encourages economic and social objectives.

Although not as large a program financially as PRP, it is significant in terms of the amount of property cleaned up. However, its environmental stewardship is sometimes questioned.

Several FRC speakers noted that multimillion-dollar government financial support for cleanup projects on private land slated for redevelopment "recycles" land in urban areas.

That reduces development pressure on natural lands at the periphery of urban areas and protects natural resources, especially water.

**Case studies**

Case studies have always been the backbone of the technical program at FRC.

The use of chemical oxidants, particularly persulfate, continues to be favored for its effectiveness to close sites being treated

for diffuse low levels of organic contaminants in soil and shallow groundwaters.

In other cases, contamination treatment by chemical reduction is more effective.

Two presentations at this year's conference related chemical reduction technologies to biogeochemical theory. Applying those concepts is essential to a successful choice of reducing agent and the dosing required to achieve desired results.

Daniel Leigh, PG, CHG, technical applications manager at Evonik Active Oxygens LLC, discussed these factors in detail in a well-illustrated presentation that simplified the biogeochemical redox spectrum that environmental consultants rely on for successful remediation.

For example, in the case of arsenic, treatment with zero-valent iron and sulfate produces pyrite with arsenic "trapped" in the crystal structure of the pyrite coating soil particles in the treatment zone.

It was one of the best explanations of the mechanism of this treatment presented in several years at FRC.

**PFAS progress**

Per- and polyfluoroalkyl substances were the focus of one session and were mentioned in multiple others.

The U.S. Environmental Protection

# The *Specifier* is your **BEST** tool for reaching environmental professionals in the state of Florida and the Southeast.

## Shall we include your ad in our next issue?



Advertising in the *Florida Specifier* is a cost-effective way to keep your company in front of the key players in Florida's environmental industry marketplace.

**Rates start at only \$425 for a full year of business card advertising.**  
Contact John Waterman at (323) 875-4801.

## Growing your business is our business.



# Mathews' HR & Safety Consulting Services

Human Resources | Risk Management | Safety | Training

- Safety Program Development & Training • Management/Supervisory Training
- OSHA 10-Hour • OSHA 30-Hour • CPR/AED/First Aid
- Employee Performance Management • HR Policies & Procedures • Bloodborne Pathogens
- Compliance Audits • Employee Handbooks • Workplace Investigations • HIPAA



813.475.5404

www.mathewshrconsulting.com



SBA WOSB  
Woman Owned Small Business



# Carbonworks

Environmental Water and Vapor Treatment  
Rental • Sales • Service

For the last three decades, Mike Eastman has been the ambassador of our industry and Florida's environment. The *Specifier* has been our go-to source for news and information about our beloved state's environment. The Florida Remediation Conference has fostered a collaborative atmosphere among our industries and its contractors and regulators. It's also helped to develop the careers of some of the best engineers and geologists our country has to offer. More than any single individual, the "guy with the ponytail" has made this happen.

Carbonworks would like to congratulate our friend, Mike Eastman, on his retirement and thank him for helping Florida lead the nation in environmental stewardship. It's time to set the pen down and enjoy the environment you have helped protect, Mike!

Florida Office  
904-352-0536

Virginia Office  
540-537-4697

www.carbonworks-usa.com

## PORT

From Page 13

Issues anticipated by the corps include concern for hardbottom/reef communities, turbidity and sedimentation associated with dredging operations, seagrass, threatened and endangered species, and cultural, commercial and recreational resources.

"Florida's reef tract is the only near-shore coral reef in the continental U.S., noted Silverstein after the first harbor project. "Our coral reefs are the engine of

## FRC

From Page 15

Agency's update to its PFAS Chemical Action Plan dominated the discussion but only for prospects that may happen in an uncertain timeframe.

Other speakers pointed out that at least 10 states currently have soil and water cleanup target levels for PFAS. Consultants are now using those cleanup targets in their projects even though a tightening of the levels seems likely.

A successful pilot study of smoldering chemical destruction of long-chain PFAS in a kiln at 350 degrees centigrade was one piece of relatively new information delivered at the conference. The method's features were cited by one speaker—but with no accompanying data.

The downside of smoldering PFAS is incomplete destruction, and some short-chain volatile perfluorinated compounds are produced by the smoldering.

The smoldering pilot test's full description is not yet available. In the meantime, sorption methods will remain a dominant

## NOTES

From Page 3

eral project contributors including \$4.59 million in funding from the cooperative U.S. Forest Service - Florida Forest Service Forest Legacy Program, \$1.3 million in Florida Forever funding and \$500,000 from the National Fish and Wildlife Foundation/Walmart Acres for America program.

"The once vast longleaf forests are one of the most threatened and ecologically diverse ecosystems in the world," said DEP Secretary Shawn Hamilton. "They provide blankets of groundcover for an abundance of flora and fauna, including threatened species.

"Our efforts, along with our partners' contributions, will help restore longleaf forests and ecosystems that were historically found on this landscape."

The newly acquired parcel is currently a sustainably managed working forest. The property will be restored to longleaf pine forest.

In addition to preserving biodiversity and helping assure the continued viability

our 'clean water economy,' supporting tourism, fishing and diving operations worth billions of dollars annually, as well as providing coastline protection and habitat for a diverse array of species.

And they're disappearing rapidly, she said.

PortMiami may be Miami-Dade County's second most important economic engine, but tourism is still its number one industry.

And that's food for thought.

technology for PFAS removal from water and immobilization on sites with contaminated soil.

The year, FRC included a poster session with 13 participants. The posters were on display in the exhibit hall throughout the conference, and the authors were available for discussion of their work.

Most were case studies, making dialogue with the researchers valuable.

The exhibit hall featured almost 100 booths offering the full range of services, supplies and equipment.

Exhibit hall attendees were notably animated throughout the event, partly reflecting a generational turnover among the vendors. Or perhaps attendees were just glad to get out of the office again following the easing of COVID-19 restrictions. Regardless of the reason, there was a lively ambience in the hall during the conference.

Gene Jones, CEO of the Southern Waste Information eXchange Inc., announced that next year's event is set for Nov. 16-18, 2022, at the Omni Orlando Resort at Championsgate.

and migration of plants and wildlife, the acquisition will provide water resource protection for the Blackwater River watershed.

This property will be managed by FFS as part of Blackwater River State Forest. The acquisition will allow for more recreational opportunities and provide for better prescribed fire and smoke management of the state forest.

**Company news.** The U.S. Department of Veterans Affairs' Center for Verification and Evaluation certified ETEC LLC as a Veteran-Owned Small Business.

This milestone enables the bioremediation provider full eligibility to be included as a subcontractor in federal contracts under the VOSB category.

## Index to Display Advertisers

Advertiser (Florida Representative)	Page
Telephone URL/E-mail (if available)	
ADVANCED ENVIRONMENTAL LABS (904) 363-9350 www.aellab.com	3
ALPHA-OMEGA TRAINING & COMPLIANCE (321) 445-9845 www.a-otc.com	11
CARBON SERVICE & EQUIPMENT CO. (407) 313-9113 www.carbonservice.net	8
CARBONWORKS (904) 352-0536 www.carbonworks-usa.com	16
CHEROKEE ENTERPRISES (305) 828-3353 www.cherokeecorp.com	6
CLARK ENVIRONMENTAL (800) 276-2187 www.thermaltreatment.com	8
CLIFF BERRY INC. (800) 899-7745 www.cliffberryinc.com	16
ETEC LLC (971) 222-3616 www.etccllc.com	5
FLOWERS CHEMICAL LABS (407) 339-5984 www.flowerslabs.com	4
GCD INSURANCE CONSULTANTS (813) 818-8805 ext. 232 gcdinsurance.com	9
GERBER PUMPS (407) 834-9104 www.gerberpumps.com	7
JAEE ENVIRONMENTAL SERVICES (954) 476-8333 www.jaeeenvironmental.com	4
MATHEWS CONSULTING (813) 475-5404 www.mathewshrconsulting.com	16
PACE ANALYTICAL SERVICES pacelabs.com	11
REGENESIS (972) 377-7288	12
US ECOLOGY (800) 624-5302 www.usecology.com	11
VAPOR PIN (614) 504-6915 vaporpin.com	2





**Cliff Berry, Incorporated**  
(800) 899-7745 www.cliffberryinc.com

## Reduce, Recycle, Reuse!

### Waste Management, Disposal & Remediation

- Wastewater Treatment & Recycling
- Drum Handling & Disposal
- Haz & Solid Waste Disposal
- OSHA/DOT Training & Compliance
- Plant Maintenance

- Lab Packing/Universal Waste
- Env. Assessment & Restoration
- Tank Inspection/Cleaning/Closures
- Emergency Response
- Soft Digs & Hydro Excavation

