



Rhode Island Department of Environmental Management  
Office of Land Revitalization & Sustainable Materials Management

# REVITALIZATION



*Environmental Protection Supporting Livable Communities, and a Sustainable Future!*

## RHODE

Issue 7 FALL 2022

## RIDEM AWARDED \$2MIL for BROWNFIELDS

*By: Filomena DaSilva & Rachel Simpson*



On Tuesday, May 31, 2022, U.S. Senators Jack Reed and Sheldon Whitehouse and Congressman David Cicilline joined EPA Deputy Administrator Janet McCabe to highlight historic EPA investments to assess and cleanup brownfield sites in Rhode Island. The celebration took place at the Dorado property in Woonsocket, the property which the City received a \$650,000 Cleanup Grant to remediate. In addition to the above individuals, the City's police and fire chief and Lisa Baldelli-Hunt, Mayor of Woonsocket, were

in attendance along with the Office of Land Revitalization and Sustainable Materials Management's (LRSMM) Administrator, Leo Hellested, Associate Supervising Engineer, Kelly Owens, and Senior Environmental Scientist, Rachel Simpson. The City of Woonsocket was also awarded a \$500,000 Community-Wide Assessment Grant which will focus on a dense neighborhood of expansive mill buildings that are currently underutilized and a key focus for revitalization.

*See Brownfields on Pg. 6*

*Newsletter prepared by Filomena DaSilva*

# Multi-Million Dollar Settlement Made Against Major Oil Companies in Relation to MTBE Contamination in Rhode Island

By: Filomena DaSilva

In the Spring of 2022, Attorney General Neronha announced a multi-million dollar settlement with three major oil and gas companies over the MTBE contamination. This settlement is part of Rhode Island's ongoing litigation totaling over \$17million. The case was filed in September of 2016 and alleged that Shell, Sunoco, and CITGO along with other refiners caused pollution to RI's soil and groundwater with their gasoline additive methyl tertiary-butyl ether (MTBE). The lawsuit also alleged that the gas companies promoted and sold gasoline and other petroleum products with the contaminant when they knew that MTBE would be released into the environment causing contamination and threatening RI's environment and water supply. Additional defendants listed in the case were British Petroleum (BP), Chevron, Exxon Mobil, Valero, and Irving.

MTBE has leaked from underground storage tanks and contaminated groundwater and soil in Rhode Island and all across the country for decades. RI banned the use of MTBE in 2007 but it continued to contaminate some groundwater throughout the state. According to research, even extremely low levels of MTBE could pose serious health risks, including cancer. The contaminant can give water a strong turpentine-like taste and odor, and its removal is quite costly. MTBE was detected in Pascoag's drinking water in 2001 which caused the town's only well to shut down, leaving residents without any source of water. Levels of MTBE were found in a nearby bedrock aquifer and detected at up to 1000 times higher than approved drink-

*See MTBE on Pg. 7*

## LRSMM's Own Connects with ASTSWMO

The Association of State and Territorial Solid Waste Management Officials (ASTSWMO) is an organization which enhances and promotes effective State and Territorial programs in relation to waste and materials management, environmentally sustainable practices, and environmental restoration. ASTSWMO is made up of several subcommittees, which are further divided into Focus Groups and Task Forces, in which several members of the Office of Land Revitalization & Sustainable Materials Management



Ashley Blauvelt, PE

(LRSMM) have been involved. Focus groups typically research and work on a different topic each year that culminates in a deliverable that can be helpful to States, such as a paper, webinar, or toolbox.

In 2019, the Remedial Action Focus Group of ASTSWMO researched the use of Technical Impracticability Waivers on NPL sites throughout the country where Ashley Blauvelt, Environmental Engineer at RIDEM's Office of LRSMM, put together a webinar in early 2020 and presented a case study on the subject. More recently, the Remedial Action Focus Group surveyed state environmental agencies and put together a paper on effective strategies, best practices, and coordination efforts for state and EPA collaboration. Working on projects while serving on the focus group has given her the opportunity to meet and work closely with people from other states across the country, people who do the same work that is done at RIDEM. "It's been interesting to speak with someone in Region 4 or Region 8, for example, who deals with the very same hurdles that we do here", says Ashley. "Rhode Island was one of the first to have a state Brownfields Program and given our long industrial history, there is a lot of experience to share." The exchange of ideas, separate of whatever project each State is working on, has been the single most valuable experience for Ashley. She continues to come away from every meeting with a different way of looking at a problem or a smart idea that another state has implemented that can be brought back to RIDEM to better serve the public here. Her term is set to end next month, but not before she presents at the ASTSWMO Annual Meeting in October, outlining how Rhode Island has incorporated Environmental Justice into its Site Cleanup Program and what we've learned over the last 15 years or so. Being a part of ASTSWMO and serving on different focus groups allows RIDEM's Office of LRSMM to keep up to date with how other states or territories manage their programs and addresses various environmental issues, as well as offering Rhode Island an opportunity to weigh in on emerging issues and share its experiences.

# The “Dynamo” in the Rough

Contributors: Jeffrey Crawford, Gary Jablonski, & Ashley Blauvelt

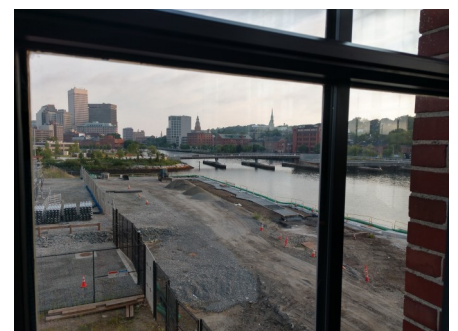
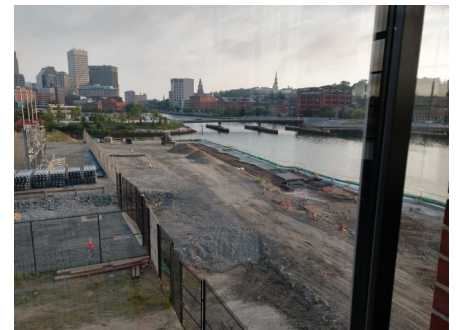


Located along the banks of the Providence River, there exists a 14-acre site which has been subject to environmental emergency responses, remedial investigations, and remedial cleanup for over three decades. The site is bordered to the West by Eddy Street, the newly created Providence Innovation District Park and Pedestrian Bridge to the North, Point Street to the South, and the Providence River to the East. Dating back to the early 1900's, the building formerly known as the Manchester Street Power Station (Coal Fired) and its affiliated support buildings, substations and switchyard operated as a coal-fired electric generator up until the 1990s. In 2011 and 2012, the Providence Preservation Society named South Street Landing a “Most Endangered Property.” By the time the South Street Landing remediation and redevelopment was near completion in 2019, the National Trust for Historic Preservation awarded the project with the 2019 Richard H. Driehaus Foundation National Preservation Award, which recognizes reuse projects that preserve architectural and cultural heritage<sup>1</sup>.

As a result of nearly 100 years of industrial use, South Street Landing has undergone numerous soil and groundwater investigations since the 1980's. The most recent soil and groundwater remediation work, facility demolition, and re-development and renewal has sparked a rebirth of this location and its surrounding area. After completion of

the new Natural Gas Power Generating Station South of Point Street, the doors opened for the work to begin. The South Street Landing project was one of the first recipients of the new Brownfield Remediation and Economic Development Fund Grant out of the 2014 Green Economy Bond, receiving a reimbursable grant for \$496,650 for eligible remediation expenses. This Project redeveloped a large and iconic former Narragansett Electric Building on the downtown Providence waterfront that has laid vacant for over twenty years. It expanded Brown University's presence in the Jewelry District with administrative offices near their medical school. The project also forms a partnership between Rhode Island College and the University of Rhode Island to shape the Nursing Education Center. RIDEM is excited to see the incredible work at South Street Landing and the positive impact its productive reuse has brought to the City – an excellent example of the potential that brownfields have.

The Site now consists of The Rhode Island School of Nursing (formerly the Dynamo House) supported by Brown University, a Parking Garage along Eddy Street, The River House - Brown University Graduate Housing, office spaces at Davol Square, a new electric substation, and part of the soon to be completed public greenway walk along the Providence River front.



See Dynamo pg. 6

The Office of  
LRSMM Welcomes  
New Staff

# Staff Corner



Reem Freij has been working with the Office of LRSMM as an Environmental Scientist conducting underground storage tank inspections since June. Previously, she worked as a Microbiologist at a biotech pharmaceutical company in Salem, NH. She graduated from the University of New Hampshire in 2021 with a B.S. in Biomedical Science and minor in Public Health. She is now working towards her Masters in Public Health with a focus in Environmental Science. In her free time, she enjoys camping, hiking and spending time with family and friends.

Liam Ridge is a recent Bridgewater State University graduate majoring in Environmental Sciences. He was born and raised in neighboring Massachusetts but has spent some time in Rhode Island as a student at the University of Rhode Island. In school, Liam specialized in Sedimentology and Hydrology and how the two concepts work together when analyzing water movement underground and on the surface. He examined how large storms, such as hurricanes, can affect the Earth's ground and water quality/quantity. He started as an Intern with the Office of LRSMM in January and later in the year learned there was an opportunity for a full-time Environmental Scientist position in the UST Division of the office. He is happy to be back in RI.



Joanna Pawlina was born and raised in Queens, New York where she attended St. John's University. This past May, she graduated with her B.S. in Toxicology with a focus on environmental tox. While in college, she worked as a College Aide for the NYC Department of Environmental Protection for almost 2 years. There she was involved with resource recovery where she worked closely on promoting the beneficial use of biosolids, assisting in city projects to achieve carbon neutrality by 2050, and researching emerging studies about PFAS. Joanna had also worked for an environmental consulting company until she moved to Rhode Island in late Summer for this position at RIDEM. She is looking forward to working with her new team and furthering her career in environmental toxicology.

**WELCOME REEM, LIAM, & JOANNA!!**

# WASTEWATER - More Than Just a Flush

Contributors: Filomena DaSilva, Patrick McShane, and Joseph Haberek

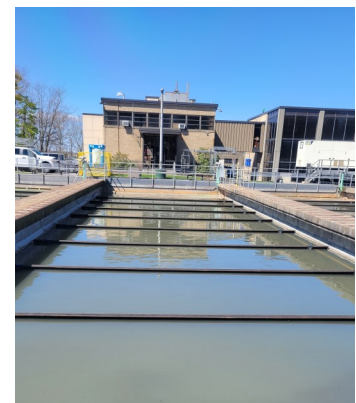
Once water flows into the drain or down the toilet, it's gone! Right? Wrong. That could not be farther from the truth. It is actually the beginning for Patrick McShane, Assistant Project Manager for Veolia Environmental, the contract operator for the East Providence Water Pollution Control Facility. Although not under the regulatory purview of the Office of Land Revitalization and Sustainable Materials Management (LRSMM), but DEM's Office of Water Resources (OWR), this facility is one of 19 major municipal wastewater treatment facilities in the state permitted by their Rhode Island Pollutant Discharge Elimination System (RIPDES) Program. The treatment plant held a tour earlier this Spring to educate the public on its wastewater treatment process. Filomena DaSilva, Chief Implementation Aide at RIDEM's LRSMM, visited the plant and learned first hand exactly how much work goes into keeping our water clean before it heads out into the bay.

Wastewater flows from the City of East Providence and its neighboring Town of Barrington directly to the plant for treatment through the Headworks building and primary settling tanks, also known as primary clarifiers. It is at this stage where large solids/debris and "floatables" such as toothpicks, bottle caps, rocks, wipes, and even an occasional \$100 bill are removed from the waste stream. The average flow entering at this stage ranges anywhere from 5 million gallons up to 14 million gallons per day depending on the season. Summer months historically have less flow due to decreased infiltration and inflow of rainwater and/or groundwater during the drier season, giving way for most tank maintenance to be performed at this time. Strategically, this allows staff to take a tank out of service without upsetting the entire plant's process. Of course there are unexpected circumstances that could disrupt this practice, such as heavy rain storms or other severe weather events. Facility staff must keep an eye on the weather forecasts to ensure that extreme weather does not impact the plant from high flows which could ultimately cause a solids wash out, where solid waste overflows into other areas of the plant causing problems with chlorination or bacteria growth quality. The plant depends on accurate bacteria growth to help treat the wastewater and produce a quality effluent.

After primary treatment, the wastewater flows to the aeration tanks. This is where microorganisms (bugs) are grown and used for nitrogen removal. In the first two aeration zones of the process, ammonia is converted to nitrites then to nitrates. This process is called nitrification. The final zone of the process is where dissolved oxygen is no longer available (anoxic zone) and forces the bacteria to metabolize the nitrates to nitrogen gas. This process is called denitrification, where nitrogen is removed from the plant effluent to protect the receiving waters and the ecosystem. Denitrification occurs naturally in nature. "We help



Above: Patrick McShane explaining one of the intricate processes of the wastewater journey. Below: Various phases of treatment throughout the plant.



Photos courtesy of Filomena DaSilva

See Wastewater on Pg. 9

## BROWNFIELDS...

*Cont'd From Front Pg*

The celebration highlighted RIDEM being awarded a \$2,000,000 Community-Wide Assessment Grant. RIDEM's Director, Terry Gray, who was also present at the celebration, noted that "We are grateful that EPA is committed to funding our work to clean up and restore sites in overburdened communities across our state. Congratulations to both the City of Woonsocket and DEM's Office of LRSMM for their winning grant applications in this highly competitive national program." RIDEM's grant application focused on communities in Pawtucket, Providence, and Burrillville near impaired river systems. These priority sites are in direct proximity to disadvantaged and/or sensitive populations such as children, pregnant



women, the elderly, minorities, and low-income populations. Although activities will focus on those three communities, assessment evaluations will be open to applicants from any RI community. Brownfields suffering from underutilization, vacancy, decay, and fires contribute to severe health issues associated with contaminated subsurface media and cause blight to each community's landscape, hampering redevelopment and locking properties in a state of underuse and neglect, and worsening quality of life. Review of brownfields is essential to provide revitalizing improvements and opportunities in these communities. These grants will help spur economic redevelopment in the blighted areas of Rhode Island by creating jobs and cleaning up contaminated and polluted or hazardous brownfield properties. "A lot goes into these clean up actions," says Hellested, "This award reflects very positively on the entire program, all the collective efforts by staff, and is a big win for the State."

Photos courtesy of Jessica Dominguez, EPA

## DYNAMO...

*Cont'd From Pg. 3*

The environmental investigations addressed historical releases of petroleum (TPH) from subsurface storage tanks on the North Parcel and from equipment into site soils. Other contaminants identified included PAHs and some heavy metals in the soil, and Mercury in the building basement. As power generating activities shifted to the new natural gas facility, The Narragansett Electric Company's (TNEC) contractors finalized the investigation report and proposed remedial alternatives that would address the environmental issues identified during the site investigation.

The property was segregated into three areas by street addresses. The remediation activities were scheduled in conjunction with the site redevelopment and work was initiated in 2015 on the 342 Eddy Street property and a portion of Lot 429. The remedial approach on this part of the site involved utilizing the soon to-be constructed parking garage to act as a site cap to prevent exposure to soils containing PAHs or metals at concentrations above the Department's Method 1 Direct Exposure Criteria (DEC). The remainder of the property involved the remediation of the Switch building which was attached to the North side of the Dynamo House at 350 Eddy Street. This was a four-story structure which included all of the old electric equipment (i.e., transformers, switches, oil filled lines, and electric banks) where the electric company could manually control the electricity for large portions of the city. All of the equipment and impacted interior surfaces required remediation under EPA's Toxic Substances Control Act (TSCA) program. Simultaneously, an asbestos abatement plan was initiated and completed before the building could be torn down. The Rhode Island Nursing Education Center opened in June 2017, occupying the first three floors while Brown University occupies floors 4-6.

*Cont'd on next page*

# LRSMM Participates in RIDEM's Harvest Day at Goddard Park

By: Reem Freij & Alex Worrell



The Office of LRSMM's UST/LUST and Site Remediation Divisions got ready to educate the public at this year's Harvest Day in Goddard Park on August 5th. Both Divisions set up informational tables displaying various items showing the different processes taken during a leaking underground storage tank cleanup and the remediation of contaminated sites. Some of the objects displayed included photos of leaking underground storage tanks, diagrams of STP Sumps, posters of remediated sites, a close up of a faulty tank, and sample UST files including Inspection Reports and Letters of Non Compliance. These are realistic materials used everyday in the Division to ensure compliance and appropriate remediation steps. Displayed on the tables were also props from real USTs including a shear valve, dispenser pump, tank double-walled tubing and some contaminated soil samples. PID (Photoionization Detector) was used on the soil samples to measure the PPM levels of oil or petroleum pollution that was released into the soil from a leaking UST and illustrated what happens

when this contamination occurs. Overall, it was a great success and LRSMM's message on environmental protection, site remediation, and the consequences of leaking underground storage tanks was well received.

## DYNAMO...

Cont'd From Pg. 6

In May 2019, renovation began at the former Davol Square building located on the southern parcels at 11 & 15 Point Street and 2 South Street, as did the construction of the new River House Graduate Housing for Brown University. This part of the project was completed in 2021 and both buildings are now occupied.

The final piece to the puzzle is completion of the Urban Greenway River Walk which will allow the public to walk along the Providence River Waterfront North and continue into the new Providence Innovation District Park and Pedestrian Bridge across the river.

<sup>1</sup> Brown University. (2019, October 11). *South Street Landing wins top National Preservation Award*. <https://www.brown.edu/news/2019-10-11/preservation>

Specifically the scope of work for this grant included remediating and abating all contaminants including asbestos, installing an engineered cap, along with recording of an Environmental Land Use Restriction on the property.

## MTBE...

Cont'd From Pg 2

ing water limits. Rhode Island reached a separate settlement with Exxon Mobile for \$7 million in 2012 resulting from this contamination

Attorney General Neronha says, "MTBE contamination of public water supplies poses a significant public health and safety risk, one which oil and gas companies knew about well before the public did. The work to remediate contaminated water supplies continues and the funds recovered to date will be exclusively dedicated to doing that work". Rhode Island has also entered into separate settlements with four other companies: Hess, Total Petrochemicals & Refining USA, Inc (TPRI), Marathon, and Conoco. Settlement funds will be dedicated to emergency response and ongoing MTBE contamination remediation efforts at the RIDEM.

# How To...



## Take Proper Groundwater Samples for Testing:

By: Alex Worrell

A large amount of work that the Office of Land Revitalization and Sustainable Materials Management has to do with monitoring groundwater at a variety of properties. In order to get the most accurate test results when dealing with contamination, several measures must be taken during the sampling process.

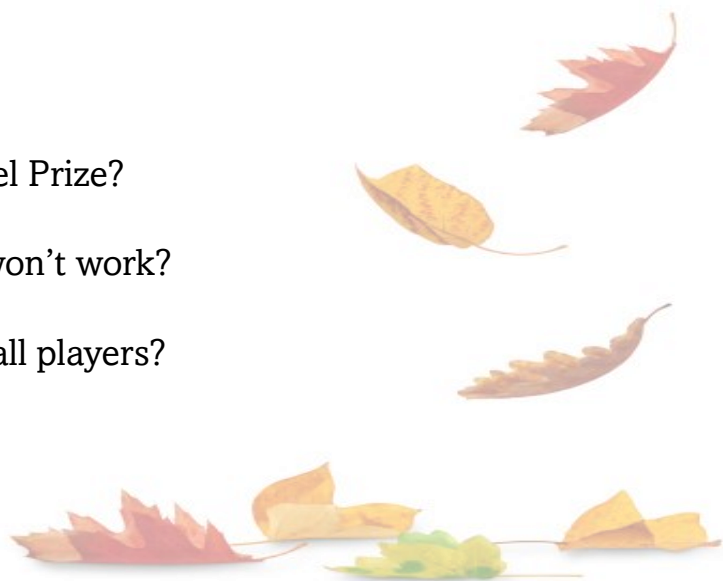
First, when you are dealing with a groundwater monitoring well on a property, it is important to clear out the stagnant water so that fresh water can be tested. This is a process called purging. After the water has been purged from a well, a recharge period of about one hour is needed for the fresh groundwater to flow in. Then, a sample can be taken by pumping the new contents of the well and storing it in vials. In order to eliminate the possibility for biodegradation of the contaminants, the vials are pre-coated with hydrofluoric acid to kill any bacteria. Gloves are worn by the sample collectors during this process and, when switching to sample a different well, a new pair of gloves need to be worn to prevent cross-contamination. The vials are completely filled without any air bubbles. Finally, each sample is labeled and kept refrigerated until they are transported to a lab for testing. Once testing is completed, the results are sent back to RIDEM and it is determined if any action needs to be taken at the site for remediation or continued monitoring. If a site is declared to be contaminated, a file is created indicating the details and is made to be public record at the RIDEM offices or online, where you too can keep track of any updates we receive while a project is happening.

## AUTUMN FUNNIES

1. Why did the scarecrow win a Nobel Prize?
2. What do you call a skeleton who won't work?
3. Why do spiders make good baseball players?



*Answers on last page*



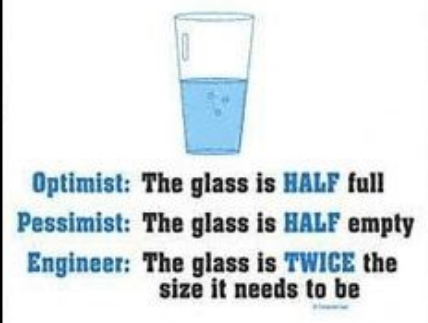
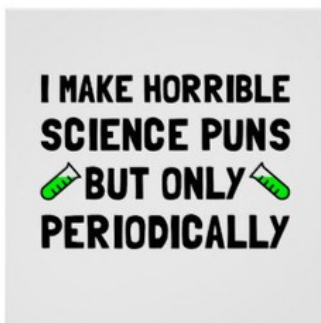


## Wastewater... *Cont'd From Pg. 5*

speed up the process in the plant”, says McShane. “We feed the organism a carbon source and supply plenty of oxygen for growth. This process ensures our ability to achieve a solids removal of almost 98%. The treated wastewater leaving the plant is clean and its clarity could be compared to that of tap water”.

Staff use oxidizers such as chlorine and hydrogen peroxide in the waste stream to cut down on the odor producing bacteria, though odors are monitored continuously as a routine. Solids that are produced in aeration tanks are removed by secondary clarifiers and processed through solids handling equipment that take most of the water out and yields a soft cake-like product, called biosolids, that is disposed of in a landfill or incinerator. This process runs on average 4 days a week around 20 hours per day. The final step in the treatment process is disinfection. This is handled by applying chlorine to the treated wastewater and allowing it an appropriate “contact time” in the chlorine contact tank to ensure that no hazardous pathogens are discharged to surface waters.

Many analyses are performed in the plant’s laboratory daily. Testing for metals, cyanide, oxygen demand and pathogens that can cause harm to public health are carried out on these solids and wastewater influent and effluent. This helps keep systems in check and staff on top of any issues as they arise. Veolia Environmental operates and maintains 25 pump stations in East Providence as well as 130 miles of sewer lines. They employ 10 operators and 4 mechanics who work together to tackle most issues that could pop up at a moment’s notice within the system. The final effluent must meet all of the applicable permit limits established in the facilities’ RIPDES permit. These limits ensure that both aquatic life and human health is protected. Staff in OWR issue and track compliance with the RIPDES permit conditions, provide oversight of the facility to ensure that appropriate maintenance is being performed, and review and approve design changes to the treatment facility and its sewage collection system. *“It would be great if the public understood just how much waste actually gets caught during the initial phases of flow and has to be cleaned out”, says DaSilva. “It was quite a learning experience and one where more individuals should participate in to appreciate the cleanup process.”*



### Answers to Autumn Funnies

1. He was outstanding in his field
2. Lazy-bones
3. Because they are good at catching flies