

BREA News

<https://bera.bnl.gov/brea/>

Volume 23, Issue 2

March/April 2023

BREA Meetings

BREA meetings are held on the second Tuesday of every month (except for August), at 1 p.m. All BREA members are invited to attend and participate.

The Laboratory site is now open to retirees. Even so, BREA's business meetings are still being held on Zoom via video link. Contact any officer for help to join these meetings.

Meeting Schedule

March 14, 2023

April 11, 2023

May 9, 2023

BREA Officers

President

Arnold Moodenbaugh
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Vice President

Vinita Ghosh
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Secretary

Laura Miller
l96miller@outlook.com

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* * *

Newsletter Editor

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This photo from 1970 shows a fire suppression system being tested near the Alternating Gradient Synchrotron. Today, BNL is addressing a new environmental concern: PFAS, found in firefighting foam. See the article starting on page 2 about these so-called forever chemicals.

From the President

by Arnie Moodenbaugh, moodenba@optonline.net

To fellow BREA Members,

I hope you are doing well. The winter thus far on Long Island has been mild (to say the least). We've had a dusting of snow a couple of times, but no occasion to break out the shovel. Our bulb perennials sprouted a week or two ago. Herds of turkeys and a sprinkling of deer seem to be enjoying this winter. Brookhaven Lab has relaxed Covid restrictions, and the pool and gym are open again.

The feature article in this March/April issue of BREA News is a discussion of polyfluoroalkyl substances (PFAS, which include PFOA and PFOS that have been used on the BNL site). Mona Rowe wrote the article with input from BNL Environmental Protection Division employees Doug Paquette and Jason Remien. The primary use of these chemicals at BNL was in fire-suppression activities. They are known as "forever chemicals," not being readily broken down in the environment. The article describes BNL's efforts to remove PFAS from the aquifer.

This type of groundwater pollution is quite common. Newsday recently reported on the designation of MacArthur Airport as a New York State superfund site because of PFAS. Newsday has also

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PFAS: Forever Chemicals

Mark Israel attends regular meetings of BNL's Community Advisory Council as a representative of BREA. And, in 2018, he heard the first of now regular reports on PFAS in groundwater at Brookhaven Lab. The letters "PFAS" stand for per- and polyfluoroalkyl substances. (Say PFAS as pea fast but with no "t" at the end.)

PFAS are chemicals that have been manufactured since the 1940s. Over 4,000 different PFAS have been developed over time. Because of their properties – they resist heat, water and oil – they are used in many industrial applications and consumer products. When Israel looks around his house, he finds nonstick cookware, stain-resistant carpets and waterproof jackets – all containing PFAS. Even certain shampoos, dental floss and cosmetics that he and his wife Ronni use could contain these chemicals. It's not always easy to determine whether PFAS are present by the product labels alone.

Unfortunately, PFAS are persistent – they take a long time to leave your body and a very, very long time to break down in the environment. That's why they are called "forever chemicals." Studies have shown that some of these chemicals can cause human and ecological health effects. For more information, see: https://pfas-1.itrcweb.org/wp-content/uploads/2022/09/HH_Eco_PFAS_Fact-Sheet_082422_508.pdf.

In the early 2000s, U.S. manufacturers phased out domestic production of PFOS and PFOA – two of the most environmentally persistent PFAS – and replaced them with other forms of PFAS that are thought to be less persistent. But the problem remains. PFOS and PFOA continue to be manufactured in some countries, and even the replacement chemicals pose some risk.



Firefighter training with foam at the former firehouse, 1966

How did PFAS get into the groundwater at Brookhaven Lab?

According to Project Manager Doug Paquette, in the Groundwater Protection Group of the Lab's Environmental Protection Division, PFAS in groundwater on site came from BNL's use of firefighting foam.

Paquette explained that PFAS work well in firefighting foam because they serve as surfactants that allow the foam to spread over and suppress oil and other petroleum fires. A search of available records on site showed that from 1966-2008, PFAS-containing foam was periodically released during firefighter training and the testing of fire suppression systems at several research facilities. "To prevent the release of additional PFAS to the environment," said Paquette, "BNL in 2019 replaced its remaining inventory of PFAS-containing foam with PFAS-free foam."

BNL is not the only source of PFAS detected in groundwater on Long Island. "Recent investigations by state and county agencies have shown that PFAS were also released at a number of local fire departments, regional firefighter training facilities, and airports," Paquette said.

Underground aquifers are the source of potable water on Long Island. Many homes and businesses have private wells that tap into these aquifers. If not, they are hooked up to public-water suppliers such as the Suffolk County Water Authority, which pulls water from the same aquifers. Similarly, Brookhaven Lab provides potable water to employees, facility users and guests. BNL complies with the same regulations that govern all public water suppliers.

Jason Remien, Environmental Protection Division Manager, reviewed the big picture: With PFAS contamination and possible human exposure becoming a national concern, from 2013-2015 the Environmental Protection Agency (EPA) conducted a nationwide testing program to look for potential impacts to large-size potable water systems. As a continuation of this effort, in 2017 the Suffolk County Department of Health Services tested samples from BNL's potable water supply wells. PFAS were detected in three of the five active supply wells, but at concentrations acceptable at the time.

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In 2016, EPA announced a lifetime health advisory level of 70 parts per trillion (ppt) for the combined concentrations of PFOA and PFOS. “The concentrations detected in the BNL supply wells were below this level,” said Remien. “But in August 2020, New York State established drinking water standards of 10 ppt for PFOA and 10 ppt for PFOS. The PFOS levels in several of our supply wells exceeded this new standard.”

To address the situation, said Remien, BNL returned to service granular-activated carbon filters that had been previously installed at three supply wells to remove volatile organic compounds. He said, “These filters are effectively removing PFOS before the water is released to the potable water distribution system.”

Then, in an ever-evolving response to PFAS, EPA in 2022 lowered its health advisory level to essentially zero, which Remien explained as “non-detectable levels using currently available testing methods.” He noted that EPA is scheduled to propose national drinking water standards for PFOS and PFOA, and, in April 2023, New York will establish drinking water standards for several other PFAS.

Paquette said that BNL has done extensive testing of the groundwater to learn the sources of PFAS and determine the extent to which these chemicals have impacted groundwater quality. To date, 12 PFAS release areas have been identified. BNL recently constructed two groundwater treatment systems that use carbon filters to clean up groundwater containing high levels of PFAS released from three of the 12 areas. Treated water is returned to the aquifer.

Although most of the residential areas south of the Lab (downgradient in terms of groundwater flow) are connected to public water, BNL and Suffolk County have a cooperative program to sample a small number of the remaining private wells. Several of these private wells showed low levels of PFAS. Said Paquette, “Based upon their locations and relatively shallow depths of the wells, the PFAS are likely to originate from nearby foam releases.”

Paquette also said that PFAS released at BNL have been found in several adjacent off-site areas. “The detections were in our monitoring wells, in low concentrations and in deeper portions of the aquifer,” he explained.

According to Remien, BNL will continue to evaluate the extent of on-site and off-site PFAS contamination. “That will help us determine whether additional remedial actions are required,” he said.

Israel heard the latest PFAS update at the Community Advisory Council meeting in September 2022. That presentation, given by Paquette and his colleague, Vincent Racaniello, is posted on the CAC website: www.bnl.gov/community/cac.php.

– Mona S. Rowe, msrowe.hi@gmail.com



*BNL PFAS team at groundwater treatment system for former firehouse PFAS plume: from left, Larry Singh, Vinnie Racaniello, Rich Lagattolla, Bob Howe, Jim Milligan, Jason Remien, AJ Scheff, Bob Gordon (DOE), Bill Dorsch, Doug Paquette, Eric Kramer, Melissa Yost, Jim Ferraiuolo, and Nancy Shemet
– photo by David Rahner, BNL*

President’s Message (continued)

reported on PFAS contamination at the former Northrop Grumman Calverton site.

These chemicals also appear in consumer products like nonstick pans. If overheated, the pans could gas off PFAS. Mona reminded me that our late ex-BREA President Liz Seubert used only cast-iron pans. My son has told me that his friend will not use nonstick pans because she fears PFAS could affect her pet bird (birds are quite sensitive). PFAS have even been found in humans. The movie *Dark Water* dramatizes the contamination from a PFAS manufacturing site in West Virginia. Here is a source of further information, from the CDC: https://www.cdc.gov/biomonitoring/PFAS_FactSheet.html.

Our next meeting will take place on Zoom, Tuesday, March 14, 2023, at 1 p.m. Eastern DAYLIGHT Time. We’ll send an emailed invitation/agenda in early March. Hope to see you on the Zoom meeting.

– Arnie Moodenbaugh, moodenba@optonline.net

Renew BREA Membership

Membership expires on December 31 of every year no matter when you paid your dues (which are requested by January 31 of the following year). To stay on BREA’s mailing list, complete the form below and mail it to me along with your payment. Include your email address so BREA can send you timely information. If you have questions or if your contact info has changed, email Membership Chair Beth Lin at hellobylin@yahoo.com. *Note: New retirees get one year of BREA membership free.*

PLEASE PRINT & **RETURN FORM TO BETH LIN**

Last name: _____ First name: _____ MI: _____

Address: _____

Phone: _____ Email: _____

Membership type:
 annual (\$10) 5 years (\$40) Life (\$95)

Date: _____ Check amount: _____

MAKE YOUR CHECK OUT TO BREA

- I want to receive BREA News by mail via the U.S. Post Office.
- I want to receive BREA News by email only. Do not mail it to me via the U.S. Post Office.

Mail form and check (made out to BREA) to:
Beth Lin, BREA Membership Chair
81 Westchester Drive
Rocky Point, NY 11778

In Memoriam

We deeply regret to inform you of the passing of the following retirees.

- Richard Allen, 85, January 20, 2023
- Hank Arnesen, 82, October, 17, 2022
- Ralph Brown, 93, December 28, 2022
- Marjorie Christianson, 99, January 20, 2023
- Melvyn Cowgill, 86, December 21, 2022
- Bernadette Fox, 91, December 14, 2022
- Dorothy Elizabeth Ivero (Betty), 93, January 11, 2023
- Harvey Lotko, 89, December 19, 2022
- Paul Moskowitz, 73, January 29, 2023
- Ronald Mulderig, 79, December 18, 2022
- Richard Ryder, 80, December 21, 2022
- Walter Weirshousky, 83, December 23, 2022
- Michael Zguris, 85, November 26, 2022

More information may be found at BREA’s website: <https://bera.bnl.gov/brea/>. To post an obituary for a deceased BNL employee or retiree, email information to msrowe.hi@gmail.com or mail it to BREA (see panel below for address).

Get in the Swim!

BREA has a full roster of pool programs. Plus, the Lab pool is newly painted and sports a new pool deck. Retirees with up-to-date BNL ID badges may lap swim free of charge Monday to Friday, 10:30 - 11:30 a.m. For more information, call (631) 344-5090 or go to www.bnl.gov/bera.

Brookhaven Retired Employees Association

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