1. Announcements
   a. Chair reviews virtual meeting statement
   b. This Meeting is Being Both Audio & Video Recorded

2. Approval of Agenda

3. Presentation: “Airport PFAS Investigation and Remediation”

4. Public Question and Answer

5. Adjourn

Remote Participation
Via Zoom and Youtube
5:00 PM
ACK PFAS Public Information Session

Presented by:
Nantucket Memorial Airport
Daniel Drake, Commission Chair
Tom Rafter, Airport Manager

July 29, 2020
Visit www.ACK-PFAS.com
Presentation Overview

1. AFFF & PFAS Background/Information
2. Regulatory and Project Timelines
3. ACK Response Actions
4. Point of Entry Treatment ("POET") Systems
5. Project Details and Current Status
6. Moving Forward/Next Steps
7. Project Team
8. Questions and Comments

APPENDICES:
- Instructions on How to Register to Ask Questions
- MassDEP Fact Sheet
The use of Aqueous Film Forming Foam (AFFF), containing PFAS, has been required by the Federal Aviation Administration (FAA) for all commercial service airports throughout the U.S. for more than 30 years.

Per FAA requirements, AFFF has been used in training exercises to prepare for airport emergencies and for FAA certification inspections.

PFAS compounds are man-made chemicals that have been in use in a variety of products since the 1930s.

ACK is not unique – Approximately 524 airports across the U.S. have been required by the FAA to use AFFF.
General Characteristics of PFAS Compounds

• Persistent in the environment

• Water soluble and mobile in groundwater

• Scientific understanding and regulatory actions are continuing to evolve.

• Per the MassDEP Fact Sheet, studies of the 6 PFAS compounds in laboratory animals and studies of exposed people indicate some PFAS compounds are toxic with high concentrations and/or long-term exposure:
  – Developmental effects in fetuses
  – Possible effects on thyroid, liver, kidneys, hormone levels, and the immune system
  – Cancer risk may exist in people exposed to levels above the EPA lifetime drinking water Health Advisory of 70 parts per trillion (ppt)

*Please refer to the MassDEP and U.S. EPA Fact Sheets on the [www.ack-pfas.com](http://www.ack-pfas.com) website*
Per-and Polyfluoroalkyl Substance (PFAS) Sources

Industrial and Commercial Property Use
- Military facilities
- Dry cleaners
- Car washes
- Industrial and manufacturing facilities

Household/Consumer Products
- Including stain- and water-repellent fabrics, nonstick products (e.g., Teflon), cookware, polishes, waxes, paints, cleaning products, shampoos, sunscreens, moisturizers, insect repellents, cosmetics, fast food packaging, microwave popcorn bags, dental floss

Aqueous Film Forming Foams (AFFF)
- For emergency use and firefighting training and certification (required annually by the FAA) since at least 1989
Regulatory Timeline

U.S. EPA May 2016 - Issued a Health Advisory citing a lifetime risk of 70 ppt for drinking water covering two PFAS compounds.

There are currently no U.S. EPA federal drinking water standards for PFAS compounds, only this guideline.

MassDEP June 2018 – Set a guideline of 70 ppt for any combination of 5 PFAS compounds.

MassDEP January 2019 - Announced its intention to initiate the process to develop a drinking water standard for a group of PFAS compounds.

MassDEP December 27, 2019 – Adopted revisions to the Massachusetts drinking water regulations for PFAS where the standard is 20 ppt for the sum of the concentrations of six PFAS compounds.
# Project Timeline

<table>
<thead>
<tr>
<th>Date</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>March 11, 2019</td>
<td>MassDEP issues Request for Information (RFI) to ACK</td>
</tr>
<tr>
<td>April 2, 2019</td>
<td>ACK responds with all requested information including past and current AFFF use</td>
</tr>
<tr>
<td>December 6, 2019</td>
<td>MassDEP issues Notice of Response Action (NORA)</td>
</tr>
<tr>
<td>December 21, 2019</td>
<td>ACK sends access agreements to commence testing on Madequecham Valley Road (MVR)</td>
</tr>
<tr>
<td>December 27, 2019</td>
<td>MassDEP issues drinking water standard of 20 ppt for private wells for the sum of six PFAS compounds</td>
</tr>
<tr>
<td>February 14, 2020</td>
<td>Ground water testing of airport wells and Thompson House well (airport-owned) on MVR</td>
</tr>
<tr>
<td>March 3, 2020</td>
<td>MassDEP informed of ACK property test results</td>
</tr>
<tr>
<td>April 29, 2020</td>
<td>Immediate Response Action Plan (IRA Plan) submitted to MassDEP</td>
</tr>
<tr>
<td>May 6, 2020</td>
<td>Madequecham Valley Road testing commences</td>
</tr>
<tr>
<td></td>
<td>Installation of the Thompson House POET system</td>
</tr>
<tr>
<td>June 10-12, 2020</td>
<td>Installation of 3 POET systems on MVR</td>
</tr>
<tr>
<td>July 14, 2020</td>
<td>Airport Commission authorized task order for testing residences west of ACK and continued work on MVR</td>
</tr>
<tr>
<td>July 20, 2020</td>
<td>West side residences testing commences</td>
</tr>
<tr>
<td>July 22-23, 2020</td>
<td>Installation of 2 POET systems on MVR</td>
</tr>
</tbody>
</table>

ACK and MassDEP documents located on the [www.ask-pfas.com](http://www.ask-pfas.com) website
ACK Actions as required by MassDEP

Results: greater than non-detect up to 20 parts per trillion (ppt)
Response: Verbal or electronic notification of homeowner, provide bottled water, no treatment, followed by quarterly monitoring.

Results: greater than 20ppt up to 200ppt
Response: Verbal or electronic notification of homeowner, provide bottled water, design and install treatment system.

Results: 200ppt or greater (deemed Imminent Health Hazard by MassDEP)
Response: Verbal and electronic notification of homeowner, provide bottled water, and install treatment system on an expedited basis.
Point of Entry Treatment (POET) Systems

01
Designed and installed by the Airport consultants

02
Redundant design to ensure system protection

03
Design unique to each home

04
Initial monthly testing to ensure efficacy of system, then quarterly

05
Provision of bottled water until water samples confirm removal of PFAS
## Known ACK AFFF Application, Approximate Summary

<table>
<thead>
<tr>
<th>Location</th>
<th>Date Range</th>
<th>Frequency</th>
<th>Estimated Total AFFF Conc applied (gallons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sand Pit</td>
<td>1989-1994</td>
<td>1-2 applications/ year</td>
<td>150-300</td>
</tr>
<tr>
<td>Sand Pit</td>
<td>2008</td>
<td>1 application</td>
<td>10</td>
</tr>
<tr>
<td>RW6 Runup (w)</td>
<td>1995-2015</td>
<td>1-2 total applications</td>
<td>25-50</td>
</tr>
<tr>
<td>Strojny Lot</td>
<td>2015-2018</td>
<td>6 annual applications</td>
<td>600-750</td>
</tr>
<tr>
<td>South Ramp @ J (w)</td>
<td>2015-2018</td>
<td>1-2 annual applications</td>
<td>25-50</td>
</tr>
<tr>
<td>Fuel Farm (w)</td>
<td>1998-2013</td>
<td>Every 2 years</td>
<td>200</td>
</tr>
<tr>
<td>RW 15/33 Mid</td>
<td>1989-2013</td>
<td>Annual</td>
<td>625</td>
</tr>
<tr>
<td>South Ramp @ B (w)</td>
<td>1995-2015</td>
<td>1-2 total applications</td>
<td>25-50</td>
</tr>
</tbody>
</table>

Total Estimated AFFF Application: Between 1, 910 and 2, 535 gallons


(w) – indicates location is on the western side of the airport property.
Current Status

Madequecham Valley Road
• 22 parcels total
• 19 tested, 1 pending, 2 nonresponsive owners
• 5 over 200ppt
• 3 between 20ppt and 200ppt
• 4 below 20ppt
• 3 non detect (ND)
• 4 results pending
• 6 treatment systems installed (2 pending)
• 14 on bottled water
• Testing is still ongoing

West of Airport Properties
• 22 parcels
• 20 confirmed wells
  • 20 access agreements received
  • 20 tested
  • Initial results expected about August 7th
• Testing is still ongoing
Moving Forward

Madequecham Valley Road
• Obtain access agreements for remaining properties
• Complete testing and notify homeowners
• Complete treatment system installation
• Continuing testing to determine system maintenance schedule and to monitor homes without treatment systems
• Winterize and activate systems for seasonal homes – annual requirement

West of Airport Properties
• Same protocol as MVR for testing and treatment systems, if needed
• If results at or above 20 ppt, adjacent parcels to be sampled
• Possible follow up testing for homes without treatment systems
Other Next Steps:

- Continued testing and analysis
- Investigate nature and extent of groundwater impact
- Insure funding to expedite the process
- Continued public outreach and communication

Working with Wanacomet Water Company to provide town water to affected properties
Nantucket Memorial Airport

Website: [www.ack-pfas.com](http://www.ack-pfas.com)

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Email: nkarberg@nantucketairport.com

Phone: (508) 325-7531

McFarland-Johnson, Inc.

Airport Consulting Engineering

Richard Lasdin, Project Manager

Weston Solution

Licensed Site Professional (LSP)

James Soukup, LSP, PG, RG

Lisa Kammer, Project Manager
Thank you

Public Questions and Comments

Please use the “Raise Hand” function to ask a question or provide a comment. You will be called upon in order.

If you do not get your question addressed or have comments after this meeting, please submit your questions and comments to:

Noah Karberg, Assistant Airport Manager
nkarberg@nantucketairport.com

Please visit www.ACK-PFAS.com
How to Register to Ask Questions

Commission Public Information Session - July 29, 2020 at 5:00pm

This Commission Public Information Session will be held on Wednesday, July 29, 2020 at 5pm. This meeting will be hosted on Zoom Webinar. See links below for the instructions and access.

To view the meeting on YouTube, please use this link: https://youtu.be/ZhiWezscC_0.

To register as a meeting participant and to participate during the public comment portion of the meeting, please use this link for access to Zoom Webinar: https://zoom.us/webinar/register/WN_bIDbdg3JTaWs17i9JYSY0g.

To review the instructions on how this public meeting will occur and how public comment and participation will take place, please use the link below. This meeting will be run similar to the current Nantucket Select Board Meeting format. Please refer to "New Public Participation Guidelines for Select Board Meetings" section for the instructions for this meeting. https://www.nantucket-ma.gov/138/Boards-Commissions-Committees
Per- and Polyfluoroalkyl Substances (PFAS) in Drinking Water: Questions and Answers for Consumers

What are PFAS and how are people exposed to them?
PFAS are fluorinated organic chemicals. Two PFAS chemicals, perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS), are extensively produced and are the most studied and regulated of these chemicals. Several other PFAS that are similar to PFOA and PFOS exist. These PFAS are contained in some firefighting foams used to extinguish oil and gas fires. They have also been used in a number of industrial processes and to make carpets, clothing, fabrics for furniture, paper packaging for food and other materials (e.g., coolants) that are resistant to water, grease and stains. Because these chemicals have been used in many consumer products, most people have been exposed to them.

While consumer products and food are the largest source of exposure to these chemicals for most people, drinking water can be an additional source of exposure in communities where these chemicals have contaminated water supplies. Such contamination is typically localized and associated with a specific facility, for example, an airport at which they were used for firefighting or a facility where these chemicals were produced or used.

What are the levels of concern? Scientific information and regulatory actions on PFAS are rapidly evolving. Currently, there are no enforceable federal standards for these substances in public drinking water. However, in May 2019, the United States Environmental Protection Agency (EPA) issued a lifetime drinking water Health Advisory (HA) of 70 nanograms (ng) per liter (L) (70 ng/L which equals 70 parts per trillion or ppt) for any combination of PFOA and PFOS. In June 2018, MassDEP extended this advisory to include three additional PFAS chemicals – perfluorooctanoic acid (PFOA), perfluorooctanesulfonic acid (PFOS), and perfluorooctanesulfonic acid (PFHxS) and perfluorohexanoic acid (PFHxA). The Massachusetts value, called a MassDEP Office of Research and Standards Guideline (ORSG), is a maximum recommended level for drinking water. It is set to be protective against adverse health effects for all people consuming the water for a lifetime and also applies to shorter-term exposures of weeks to months during pregnancy and breastfeeding.

On December 27, 2019 MassDEP proposed revisions to the Massachusetts drinking water regulations that would establish a regulatory drinking water standard or Massachusetts Maximum Contaminant Level (MMCL) for per and polyfluoroalkyl substances (PFAS). These revisions would establish a MMCL of 20 ng/L (or parts per trillion) for the sum of the concentrations of six specific PFAS: perfluorooctanesulfonic acid (PFOS), perfluorooctanoic acid (PFOA), perfluorooctanesulfonic acid (PFHxS), perfluorooctanoic acid (PFOA), perfluorooctanesulfonic acid (PFHxS), and perfluorooctane sulfonamide acid (PFDA). The proposed standard is supported by recent scientific developments in understanding the health effects of PFAS and is aligned with PFAS cleanup standards promulgated by the Waste Site Cleanup Program. For information on the proposed MMCL see: https://www.mass.gov/regs/210-CMR-22-the-massachusetts-drinking-water-regulations

On January 27, 2020, MassDEP issued an updated Office of Research and Standards Guideline (ORSG) for drinking water of 20 ng/L for these six PFAS compounds. The ORSG and the technical support document explain the basis of both the MassDEP revised cleanup standards and the proposed MMCL for drinking water. The updated ORSG replaces the June 2018 guideline for PFAS in drinking water. See the updated ORSG and technical support document here: https://www.mass.gov/info-details/per-and-polyfluoroalkyl-substances-tsps-health-advisories-find-downloadable-fact-sheets

Based on the current ORSG, MassDEP recommends that:

1) consumers in sensitive subgroups (pregnant women, nursing mothers and infants) not consume water when the level of the six PFAS substances, individually or in combination, is above 20 ppt; and,
2) public water suppliers take steps expeditiously to lower levels of the six PFAS, individually or in combination, to below 20 ppt for all consumers.

What does MassDEP currently recommend while the standard is being finalized?
If you are a sensitive consumer (pregnant women, nursing mothers, and infants) you can minimize your exposure by using bottled water that has been tested for PFAS for drinking, making infant formula and cooking foods that absorb water or use a home water treatment system that is certified to remove PFAS by an independent laboratory (NSF, Underwriters Laboratories, Water Quality Association or the CSA Group). See MassDEP’s website on PFAS under “Bottled Water and Home Water Filters” for more information https://www.mass.gov/info-details/per-and-polyfluoroalkyl-substances-tsps.

What health effects are associated with exposure to PFAS?
The MassDEP ORSG and proposed MMCL are based on studies of the 6 PFAS substances in laboratory animals and studies of exposed people. Overall, these studies indicate that exposure to sufficiently elevated levels of the 6 PFAS compounds may cause developmental effects in fetuses during pregnancy and in breastfed infants. Effects on the thyroid, the liver, kidneys, hormone levels and the immune system have also been reported. Some studies suggest a cancer risk may exist in people exposed to levels well above the EPA Health Advisory.

It is important to note that consuming water with PFAS above the recommended limits does not mean that adverse effects will occur. The degree of risk depends on the level of the chemicals and the duration of exposure. The recommended limit assumes that individuals drink only contaminated water, which typically overestimates exposure, and are also exposed to PFAS from sources beyond drinking water, such as food. To enhance safety, several uncertainty factors are additionally applied to account for the differences between animals and humans, and to account for the differences between people. Scientists are still working to study and better understand the health risks posed by exposures to PFAS. If your water has been found to have PFAS and you have specific health concerns, you may wish to consult with your doctor.

How can I find out about contaminants in my drinking water?
If you get your water from a public water system, you should contact them for this information. For a contact list for all public water systems in the Commonwealth you may visit https://www.mass.gov/finding-your-drinking-water-health-safetyreport or then under “Contacts” click on “PA Public Water Supplier contacts sorted by Town.”

For private well owners, you may want to contact your local Board of Health, Town government or town

For access to the links shown in the MassDEP Fact Sheet above please click here
Since people eat a variety of foods, the risk from the occasional consumption of produce grown in soil or irrigated with water contaminated with PFAS is likely to be low. Families who grow a large fraction of their produce would experience higher potential exposures and should consider the following steps, which should help reduce PFAS exposures from gardening:

- Maximize use of rainwater or water from another safe source for your garden.
- Wash your produce in clean water after you harvest it.
- Enhance your soil with clean compost rich in organic matter, which has been reported to reduce PFAS uptake into plants.
- Use raised beds with clean soil.

**NOTE ON BOILING WATER:** Boiling water will not destroy these chemicals and will increase their levels somewhat due to water evaporation.

**NOTE ON BOITED WATER:** Even though bottlers are not required to test for PFAS, some bottlers have opted. The best way to know if the bottled water you are drinking or plan to drink has been tested for PFAS is to contact the bottler and ask for the latest testing results. Contact information should be available on the bottle or by the Internet address.


** Interstate Technology and Regulatory Council (ITRC). PFAS.** [https://www.itrcweb.org/team/Public/ItemID/73](https://www.itrcweb.org/team/Public/ItemID/73)

**Association of State Drinking Water Administrators PFAS webpage** [https://www.asdwa.org/pfas/](https://www.asdwa.org/pfas/)

**EPA’s Drinking Water Health Advisories for PFOA and PFOS** can be found at [https://www.epagov-groundwater-and-drinking-water/drinking-water-health-advisories-pfoa-and-pfos](https://www.epagov-groundwater-and-drinking-water/drinking-water-health-advisories-pfoa-and-pfos)

**The Centers for Disease Control and Prevention’s Public Health Statement for PFOS and PFOA** can be found at [https://www.cdc.gov/ncbddd/pfas/index.html](https://www.cdc.gov/ncbddd/pfas/index.html)

For additional information on possible health effects, you may contact the Massachusetts Department of Public Health, Office of Environmental Health, at 617-575-1165.

For information on the MassDEP Drinking Water Program, you may visit [https://www.mass.gov/drinking-water-program](https://www.mass.gov/drinking-water-program) or contact the program at program.director-drwp@state.ma.us or 617-292-5770.

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For access to the links shown in the MassDEP Fact Sheet above please click here