

# Update on PFAS and 1,4-Dioxane

Community Advisory Council  
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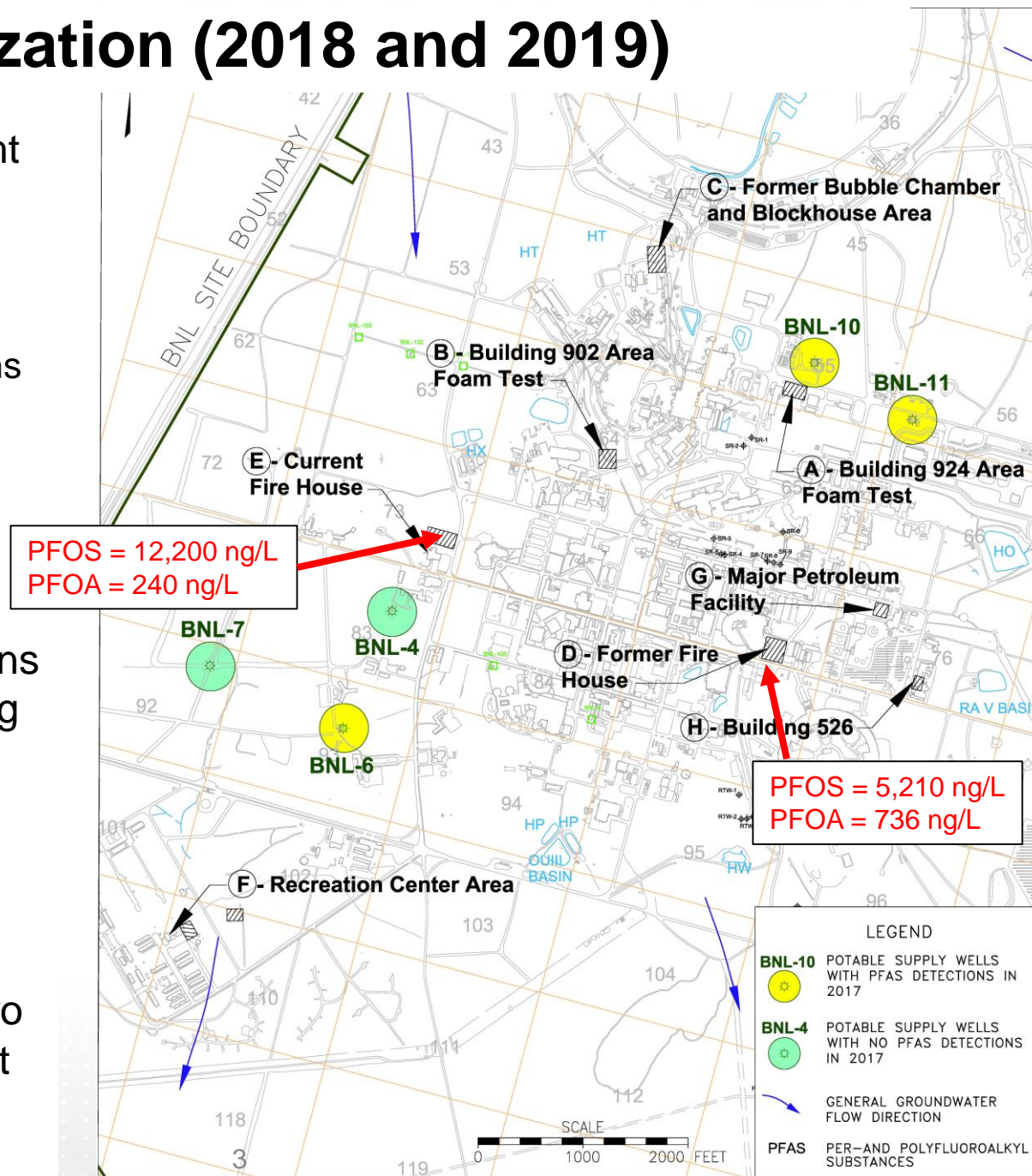
# New Drinking Water Standards

- “Notice of Adoption” was published in the NYS Register on August 26:
  - 10 ng/L (parts per trillion) for Perfluorooctane sulfonate (PFOS)
  - 10 ng/L for Perfluorooctanoic acid (PFOA)
  - 1 µg/L (part per billion) for 1,4-Dioxane
- Medium sized water providers like BNL must start testing for these chemicals within 90 days
  - BNL has been sampling for these chemicals on a quarterly basis since 2018
  - BNL has also been working to return to service carbon filters that will remove PFOS and PFOA
    - Filters at one well are already back in service
    - 1,4-Dioxane is not impacting the potable wells
    - BNL will apply for temporary “deferrals” from the new standards for several supply wells while the work on the carbon filters continues
- BNL will work with the regulators:
  - On designation of a new Operable Unit and new Areas of Concern related to PFAS and 1,4-dioxane
  - Possible changes to monitoring programs and remediation activities



# PFAS Characterization (2018 and 2019)

- In 2018, BNL identified eight foam release areas
- Foam releases related to:
  - Firefighter training
  - Fire suppression systems testing
- PFAS were detected in groundwater at all eight areas
- Highest PFAS concentrations are due to firefighter training at:
  - Former firehouse (from 1966 to 1985)
  - Current firehouse (from 1986 to 2008)
- Also sampled wells near two landfills, Sewage Treatment Plant, and along BNL site boundary



# PFAS and 1,4 Dioxane Characterization (2020)

**1. Comprehensive** sampling of 350 on-site and off-site monitoring wells and treatment systems for PFAS and 1,4-Dioxane

**2. Detailed** characterization of the current and former firehouse PFAS plumes



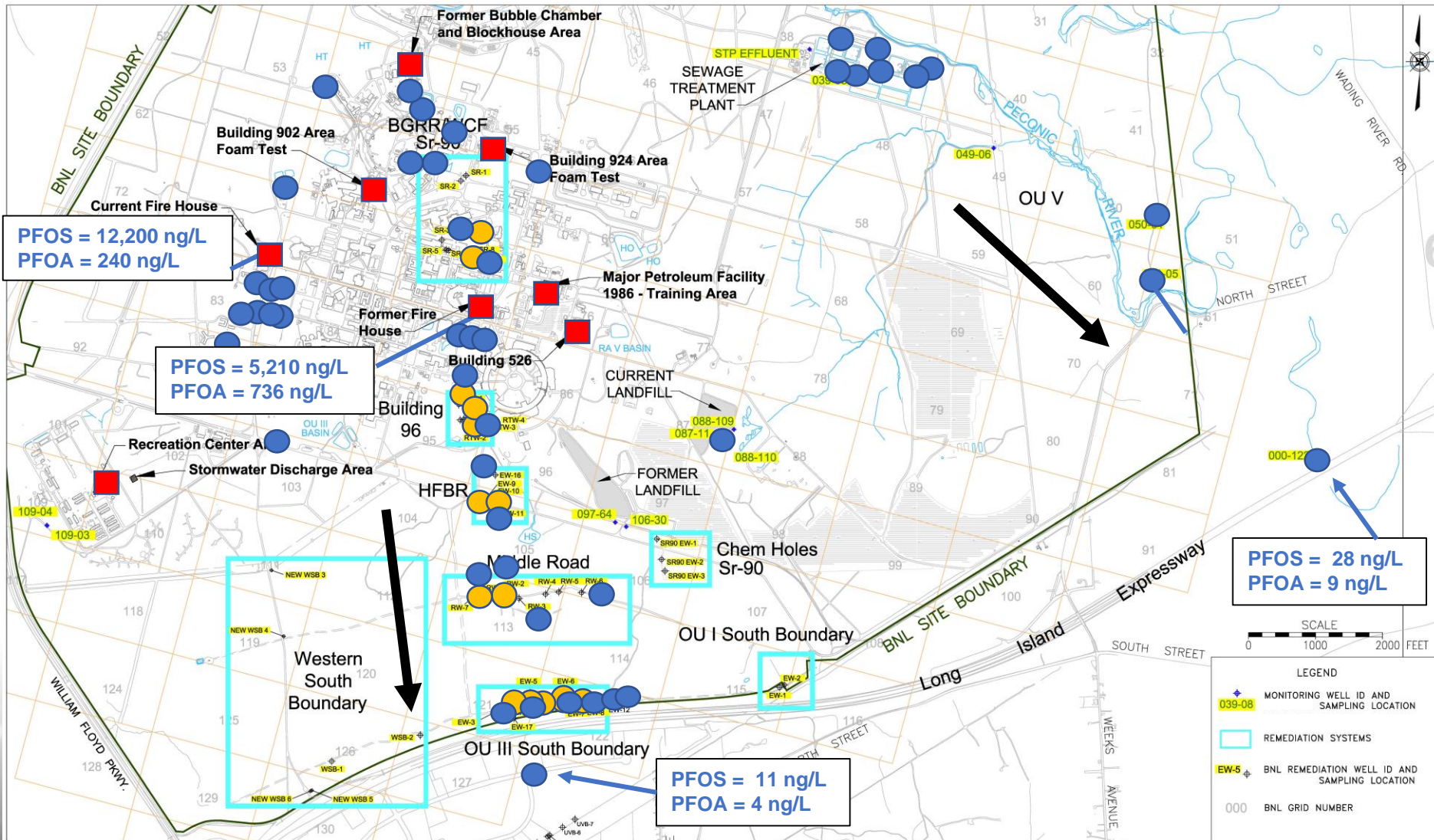
# Remediation of Current and Former Firehouse PFAS Plumes

- DOE provided \$10.9M to conduct detailed characterization and remediation of the high concentration plume segments close to the source areas
  - Field work started July 13, 2020
  - Started discussions with consulting engineer on treatment system requirements and design
    - Evaluating possible reuse of currently inactive treatment system infrastructure. Could result in significant time and cost savings
- Detailed characterization data are needed for:
  - Groundwater modeling and treatment system engineering
  - Determining number, locations, depths, and pumping rates for the groundwater extraction wells
  - Filter system design (expect to use granular activated carbon and/or ion exchange resins)
  - Determining where permanent monitoring wells are needed for long-term surveillance of the source areas and plumes

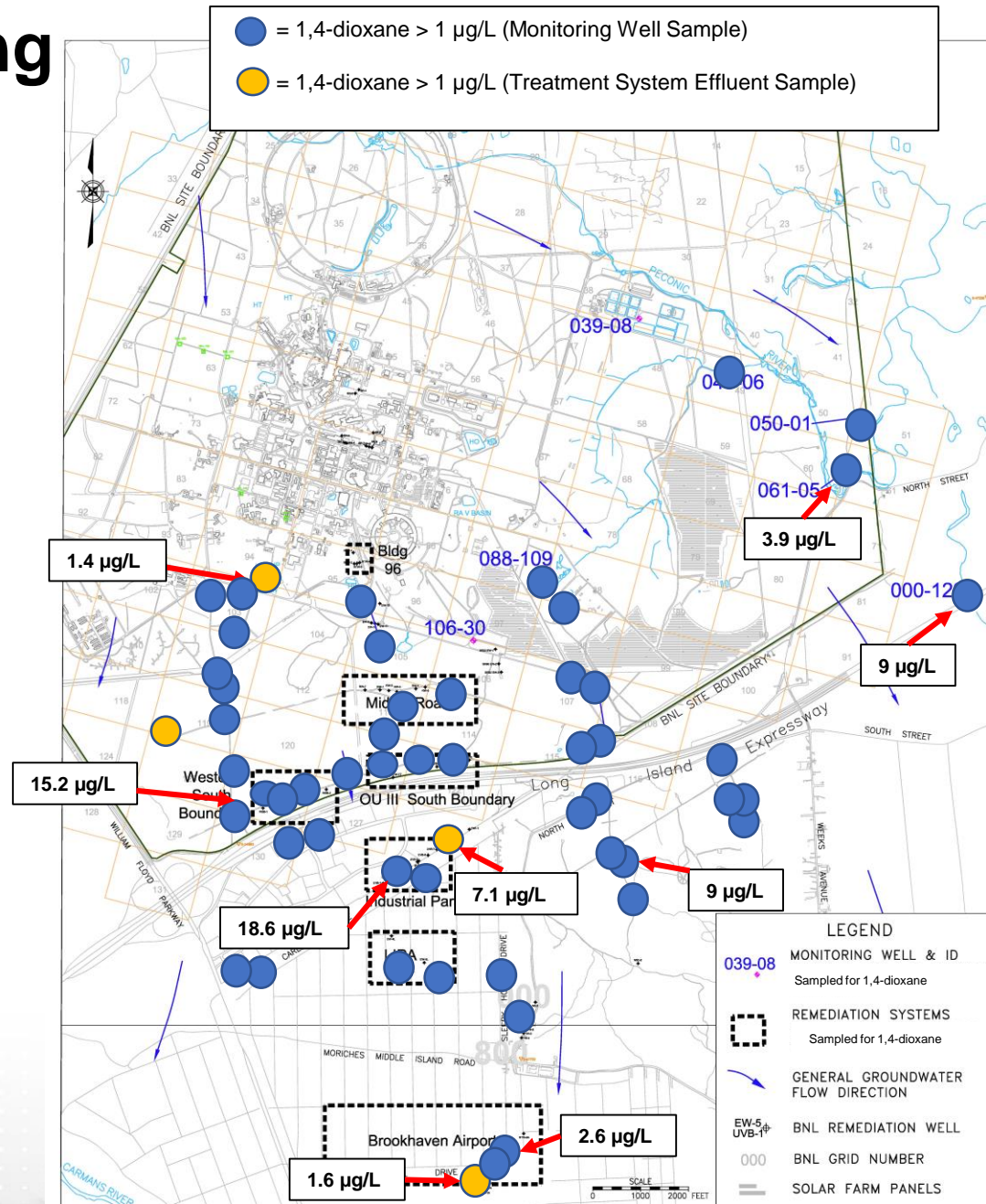
# Current Understanding

## Extent of PFOS or PFOA >10 ng/L

- = PFOS and/or PFOA > 10 ng/L (Monitoring Well)
- = PFOS and/or PFOA > 10 ng/L (Extraction Well/Treatment System)
- = Foam release area (PFOS and/or PFOA > 10 ng/L)
- General Groundwater Flow Direction



# Current Understanding Extent of 1,4-Dioxane >1µg/L



# Testing of Private Supply Wells

- Conducted under a “Technical Services Agreement” with Suffolk County (May 1, 2019 - September 30, 2020)

## Process:

- 161 properties were identified by Suffolk County as potentially having private water supply wells
- Suffolk County contacts the property owners
- If property owners agree to participate in the survey, samples are collected by Suffolk County sanitarians
- BNL provides funding for PFAS analyses conducted by BNL’s contract laboratory
- 1,4-Dioxane analyses are conducted by Suffolk County’s analytical laboratory
- County sends the results to the property owners
- To date, 74 properties have been sampled
  - **76 wells sampled**
  - Sampling effort was disrupted by response to Covid-19
  - 4 wells were sampled in August & September





# Results for the 76 Private Wells

## PFOS/PFOA

- 3 wells had PFOA >10 ng/L DWS
  - Maximum PFOA concentration was 23 ng/L
  - The three properties are located close to potential PFAS use areas recently examined by New York State Department of Environmental Conservation (Calabro Airport and Manorville FD firehouse)
- 2 wells located at properties on the same street had PFOA and PFOS > 10 ng/L
  - PFOS up to 23 ng/L and PFOA up to 110 ng/L
  - No obvious PFAS use areas are located upgradient of these properties
- Results for one well are pending (sampled September 1)

## 1,4-Dioxane

- No detections of 1,4-Dioxane >1 µg/L DWS
- Low levels of 1,4-Dioxane were detected in 10 of 72 wells; maximum concentration was 0.4 µg/L (detection limit is 0.1 µg/L)
- Results are pending for 4 wells sampled in August and September

# Summary

BNL has made good progress in characterizing the extent of PFAS and 1,4-Dioxane in groundwater. This work is ongoing

- Continue to work in close coordination with the regulatory agencies
- Required remedial responses will be conducted under the established CERCLA process
- BNL is working to ensure that its potable water will meet the new drinking water standards for PFOS and PFOA