



PRINCETON PFAS UPDATE

Private Well Monitoring and Phase II Project

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July 12, 2021

PER- AND POLYFLUOROALKYL SUBSTANCES = PFAS

MassDEP drinking water standard is based on the sum of six PFAS compounds (“PFAS6”). These six compounds are:

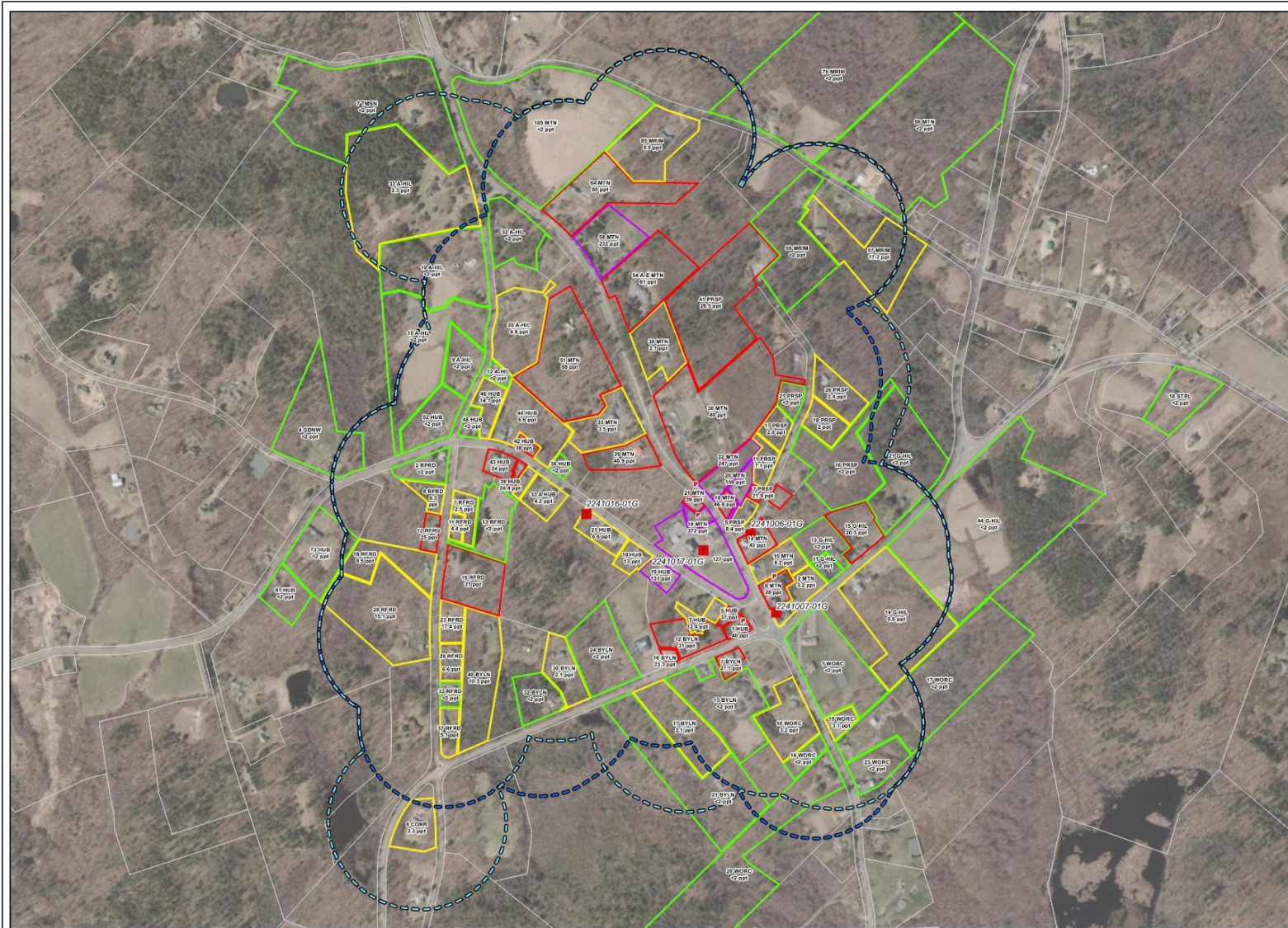
- Perfluorodecanoic acid (PFDA)
 - Perfluorononanoic acid (PFNA)
 - Perfluorooctansulfonic acid (PFOS)
 - Perfluorooctanoic acid (PFOA)
 - Perfluoroheptanoic acid (PFHpA)
 - Perfluorohexanesulfonic acid (PFHxS)
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- Eight other analytes are reported but are not currently regulated. Six of these eight have not been detected in any Princeton well samples.
 - All detected compounds are removed by POET systems.

PFAS SAMPLING & RESULTS

Radius sampling substantially complete:

- 27 homes have Point-of-Entry-Treatment (POET) systems installed where PFAS6 is at or above 20 ppt
- 50 homes are being provided with bottled water where PFAS6 is below 20 ppt
- 21 homes at edges of radii are non-detect (ND) for PFAS
- some property owners have not responded or refused sampling

JUNE 2021 RADIUS MAP



**FIGURE 2
ORTHOPHOTOGRAPH
SITE PLAN**

LEGEND

Total Regulated PFAS Concentrations in Parts-Per-Trillion (ppt)

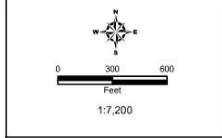
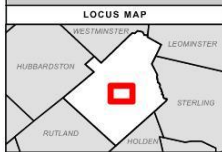
- Greater Than 100
- Greater Than 20 But Less Than 100
- Greater Than 2 But Less Than 20
- Non Detect (<2)
- Non-Community Transient Public Water Supply

— 500' Radius (2021/06/03)

- - - Previous Radius (2020/10/15)

Affected Property Labels:

- Point of Entry Treatment, if present
- Address
- PFAS 6-Compound Total



NOTES

- Based on MassGIS Orthophotography (2018)
- 500' Buffer based on a 50' buffer of building structures. Well locations are assumed to be within 50' of each home.
- Abbreviation Dictionary:

"ALLEN HILL RD" - "A-HIL"
 "BOYLSTON AVE" - "BYLN"
 "GREGORY HILL RD" - "G-HIL"
 "HUBBARDSTON RD" - "HUB"
 "MOUNTAIN RD" - "MTN"
 "PROSPECT ST" - "PRSP"
 "RADFORD RD" - "RFRD"
 "WORCESTER RD" - "WORC"
 "MERRIAM RD" - "MRM"
 "WOODCROW RD" - "GDNW"
 "CONORLY" - "CONR"
 "GREGORY RD" - "GRGY"
 "STERLING RD" - "STRL"
 "RALPH RD" - "RALPH"

Princeton, Massachusetts
 June 2021



POET SYSTEM INFORMATION

- POET monitoring – no “breakthrough” of PFAS from the primary vessel has been detected at any POET system
- Disposal of “spent” granular activated carbon (GAC) as “solid waste” is allowed, but our spent GAC is not likely to be disposed in this manner
 - We have identified a vendor that will regenerate the carbon at high temperatures sufficient to destroy the PFAS
- Working to identify a location in Town to perform removal of spent GAC and to refill POET vessels
 - Spent GAC will be safely accumulated until volume is sufficient to obtain favorable shipping costs
- MassDEP has issued permit for installation of POET at 14 Mountain Road

IMMEDIATE RESPONSE ACTION (IRA)

- Potable well impacts constituted a condition requiring “immediate” action
 - Quarterly sampling for homes where PFAS6 are <20 ppt
 - Initially consisted of monthly sampling for POET systems
 - Monthly status reports, in addition to semi-annual IRA Status Reports
 - Other activities as requested by MassDEP
- May 2020 IRA Modification - reduced POET monitoring from monthly to quarterly following three consecutive months of Non-Detect results
- December 2020 IRA Modification – changed to quarterly status reports
- June 2021 IRA Modification - significant reductions to POET monitoring:
 - First sample within one month of system installation
 - After 1 year sample midfluent & effluent semi-annually
 - After 2 years sample midfluent & effluent quarterly until GAC changed
 - Select influent samples collected to monitor influent concentrations

IRA (continued)

- December 2020 IRA Modification: DEP required quarterly runoff sampling
 - Samples to be collected from drainage swales near at 41 Prospect Street and 30 Mountain Road
- First samples were collected during rain events on April 22 and 29, 2021
 - Prospect Street sample = non-detect for PFAS
 - Mountain Road sample = elevated PFAS

MASSACHUSETTS CONTINGENCY PLAN (MCP)

- **The MCP Process** Five “phases” - Phase I through Phase V
 - Phase I – submitted November 9, 2020. Initial Site Assessment and Tier Classification (site is “Tier I” due to drinking water impacts)
 - Phase II – deadline November 2023. Define vertical and horizontal extent of PFAS in all media (soil, groundwater, surface water, air), risk characterization.
 - Phase III – deadline November 2024. Evaluation of remedial alternatives
 - Phase IV - due with Phase III. Plan to implement remedy selected in Phase III
 - Phase V – deadline November 2025. Documentation of remedy completion
 - Sites can be closed at any time during this process with a permanent solution or a temporary solution
 - IRA runs parallel to the “phase” process – no deadlines / IRA Status Reports

PHASE II COMPREHENSIVE SITE ASSESSMENT

- **Current Phase II investigation efforts include:**
 - Town Hall campus groundwater and soil assessment:
 - Town Hall monitoring wells re-sampled to evaluate concentration trends over time
 - Planned sampling of downgradient surface water bodies and fire ponds, including Gregory Hill Spring
 - Initial soil sampling at 30 Mountain Road completed:
 - Six shallow (0"-6") soil samples collected around the perimeter of former inn
 - Two composite samples collected from basement soil
 - Four of the six exterior samples had PFOA and PFOS above RCS-1
 - Both basement samples have PFOS, PFOA and/or PFHxS above RCS-1
 - Inactive inn supply well also was sampled – elevated PFAS6
 - Plan to conduct additional soil sampling
 - Working on obtaining access to other properties for soil sampling

PROJECT PLAN

- Complete the determination of private well impacts
- Continue Phase II Assessment activities to identify source areas and options for source control
- Ongoing well and POET monitoring to ensure exposures to detectable PFAS6 concentrations in private wells continue to be addressed
- Monitor POETs to determine timing of GAC changes
- Quarterly reporting to MassDEP and the public



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