

NEWMOA Hazardous Waste Conference Call

July 12, 2017

Topic: Overview of the Issues Facing Communities that have PFAS Contamination

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Participants: CT DEEP (3 people); Mass DEP (4 people); NH DES (6 people); NYS DEC (7 people); VT DEC (3 people)

Call leader: NH DES

Background Provided by NH DES

Perfluoroalkyl and polyfluoroalkyl substances (PFAS) is a class of man-made chemicals that are used in a variety of applications for producing industrial raw materials, consumer products, manufacturing aids, electronics insulation / thermal protection, fire-fighting aides, wetting agents, cleaning fluids, water proofing, to name a few. These chemicals (and precursors) have been used since the 1950's and the focus on environmental and health issues has only occurred in the last ten years. Elevated awareness has resulted in EPA issuing a combined health advisory level 70 ppt for PFOA and PFOS in drinking water. Limited exposure and environmental data indicate that longer chain PFAS are environmentally persistent, bio-accumulative and have been detected in polar bear blood serum in the Arctic.

The New Hampshire Department of Environmental Services (NHDES) began investigating the presence of (PFAS) in drinking water in several communities in Southern New Hampshire in early 2016. The investigation was initiated when Saint-Gobain Performance Plastics Corporation (Saint-Gobain) notified NHDES that perfluorooctanoic acid (PFOA) was detected at low levels in samples taken from four water faucets within their Merrimack facility served by the Merrimack Village District Water System. A NHDES multi-media inspection team initiated an investigation into the possible PFAS sources and associated release mechanisms in New Hampshire including facilities known or suspected to have used these types of chemicals.

Since this time, NHDES inspected facilities known or suspected of using PFAS as raw materials and landfills known to have received waste material from these facilities. Over the next year, NHDES has requested that municipalities operating water systems and landfills sample water supply sources and groundwater monitoring wells around landfills for PFAS. Facilities identified as contributors to the PFAS contamination problem have been requested to develop a remedial action plan and to provide funding for connecting impacted well water users to public water supplies.

NH has adopted the combined EPA Health Advisory of 70 ppt for PFOA / PFOS as an ambient groundwater quality standard (AGQS). However, NHDES has been collecting data using an expanded analyte list (currently 24 compounds) to better understand the fate and distribution of PFAS in the environment.

Question 1: How did your state become aware of the presence of PFAS in the environment? Which part of your agency took the lead in addressing the concern once the issue was recognized?

CT: The DEEP Remediation Division first became aware of the issue in Spring 2016 when EPA announced its lifetime provisional health advisory for drinking water of 70 ng/L (parts per trillion) for the sum of PFOA and PFOS. The Remediation Division and the CT Dept. of Public Health Water Supply Section have been working to expand a list of possible PFAS sites provided to the State by EPA Region 1. The goal is to identify high risk areas nearby industries that may have used PFASs and to target those areas for drinking water well sampling. This evaluation is on-going.

MA: MA became aware of the presence of PFAS when EPA issued sampling requirements for emerging contaminants in public water supplies and promulgated the new health advisory guideline. Several water supplies have detected it with two surpassing the 70 ppt threshold. Landfills and military bases are suspected sources. The Drinking Water/Bureau of Water Resources, Bureau of Waste Site Cleanup, as well as Solid Waste/Bureau of Air and Waste have been involved with the issue.

NH: NH became aware of the presence of PFAS in 2015 as a result of the Air Force investigation into contamination in water supply wells for the former Pease Air Force Base and the Coakley Landfill where waste from Pease was disposed of. In March of 2016, Saint-Gobain analyzed water supplied to the facility by the Merrimack Water District and reported that detectable levels of PFOA were present in the water supply.

NH DES responded to the Saint-Gobain results by forming a PFAS investigation team comprised of members from the Air, Waste and Water Divisions. The Waste Management Director assumed the role as the lead in evaluating the PFAS issue state wide.

NY: New York was introduced to the PFAS issue with the discovery of PFOA in the Hoosick Falls water supply. They then followed-up with the water supplies that had detections during the UCMR3 monitoring. NYSDEC took lead for environmental issues and NYSDOH took the lead for public health/water supply issues; within NYSDEC, the Division of Environmental Remediation took the lead.

VT: At first it was Hoosick Falls NY, which prompted some research at a sister facility in Bennington VT.

Question 2: What role does the hazardous waste inspector have in addressing PFAS environmental issues?

CT: None at this time.

MA: Inspectors have not been trained specifically on PFAS, though MassDEP/CERO has inspected at least one facility that might process the compounds. The inspection isn't completed, and they are expecting more information.

NH: The hazardous waste inspector is part of the multimedia inspection team. As potential users (past and present) of PFAS are identified, the inspection team evaluates the facility for compliance with air, water and waste management regulations and further evaluates PFAS containing process inputs, the facility discharge points and likely pathways to the environment.

NY: No active role.

VT: HW inspectors helped research potential facilities. Inspectors have also performed an inspection at one facility suspected using PFOAs and the SMS has performed sampling at suspected former (and active) facilities.

Question 3: Are any PFAS compounds listed as hazardous waste in your state?

CT: No. However, pursuant to Connecticut General Statutes Section 22a-454, CT DEEP has the ability to regulate various types of waste PFAS as "[Connecticut-Regulated Wastes](#)." Such wastes are generally precluded from disposal in the trash and in most cases must be picked up by a DEEP-licensed waste transporter. In addition, if the receiving facility is located in Connecticut, it must be specifically permitted to accept Connecticut-Regulated Waste.

MA: They are not listed as hazardous waste in MA.

NH: NHDES does not presently list any PFAS compounds a hazardous waste. To date, NH has adopted a combined Ambient Groundwater Quality Standard (AGQS) of 70 ppt for PFOA / PFOS.

NY: None are considered a RCRA hazardous waste, but PFOA and PFOS are listed as hazardous substances in our Part 597 regulations, which gives DEC the authority to investigate and remediate this contamination under CERCLA.

VT: Yes. Vermont recently listed liquid wastes containing PFOS and PFOA as HW (both at 20 ppt).

They have 3 exemptions:

(1) Consumer products that are available to the general public in the marketplace, which were treated with perfluorooctanoic acid, perfluorooctanesulfonic acid or a material containing perfluorooctanoic acid or perfluorooctanesulfonic acid.

(2) Remediation wastes from an environmental response action that contain perfluorooctanoic acid, perfluorooctanesulfonic acid or a material containing perfluorooctanoic acid or perfluorooctanesulfonic acid and when those remediation wastes disposed in accordance with a corrective action plan or disposal plan approved by the Secretary.

(3) Sludges from wastewater treatment facilities, collected leachate from solid waste management facilities, and residuals from the treatment of drinking water that contain perfluorooctanoic acid, perfluorooctanesulfonic acid or a material containing perfluorooctanoic acid or perfluorooctanesulfonic acid and when those remediation wastes are disposed in accordance with a corrective action plan or disposal plan approved by the Secretary.

Question 4: What types of PFAS sources are present in your state and how did you determine which industry types, early on, were major contributors to the resulting environmental impairment? What inspection techniques did you use to target and evaluate industrial facilities?

CT: CT DEEP and DPH were provided a GIS file in the summer 2016 generated by EPA which contained sites identified by EPA as being high, medium, and low priority risks. EPA's priorities considered airports, state fire training academies, Saint-Gobain facilities, facilities with NAICS codes 325211 (plastics material and resin manufacturing) and 332812 (metal coating and engraving (except jewelry and silverware)) and SIC code 28210213 (polytetrafluoroethylene resins and Teflon manufacturing), and EPCRA Tier II facilities that reported storing at least 10,000 pounds of PFCs. DEEP added to the list of possible sites in CT by using a more extensive list of NAICS/SIC codes compiled by NH DES Air Bureau and searching for these codes associated with NPDES permits. Additional research is needed to confirm whether all of the identified facilities actually use PFAS. Also, landfills, other NPL sites, and RCRA CA sites need to be evaluated.

Thus far, CT DEEP has confirmed four sites with PFAS releases:

1. NPL site with solvents/metals disposal – low level PFAS in groundwater
2. NPL site – former chromium plating site – PFOS and chromium in groundwater polluting potable wells
3. Federal facility – release of AFFF concentrate to soil from malfunction of building's fire suppression system
4. Fire training area – PFOS and PFOA in groundwater

Additional investigation to identify sites is needed.

MA: To their knowledge an initiative has not been developed for targeting and evaluating industrial facilities. I am not sure what types of PFAS are present in the state.

NH: Known sources of PFAS include fabric coatiers using Teflon dispersions, chrome metal platers, wire and electronic component manufacturers that use Teflon coatings for insulation and heat shielding, known firefighting training centers consisting of DOD, airport and local entities, and landfills. NHDES queried air, water, and waste databases to identify facilities and locations by NAICS and SIC codes that would fall into these types of industrial groups. NHDES also evaluated NPL sites within the state for possible PFAS releases to groundwater.

NY: NY has undertaken an extensive survey of manufacturers, fire training centers, DOD facilities, and airports. NY has also included PFAS compounds on the TAL/TCL list of

chemicals to sample for at remediation sites. They have begun to look at solid waste landfills and biosolids as potential sources of PFAS.

VT: Primarily coated fabrics and plastics, firefighting sites, and tubing or wire manufacturers.

Question 5: What regulatory tools has your state used for follow up on these types of inspections (e.g., information requests, voluntary requests to sample, site investigation orders)?

CT: Remediation Division staff are requesting sampling for PFAS on a case-by-case basis depending on specific site activities at remediation sites.

MA: MassDEP does have authority under various regulations to require testing to determine the presence of contaminants in emissions, wastes and discharges.

NH: NHDES has a regulation limiting the release of the ammonium salt of PFOA to the ambient air that must be addressed by all sources emitting this compound. The Department is requesting information on releases that may impact groundwater AGQS and has issued several site investigation orders.

NY: New York does not have any standards for PFAS compounds. They have used the EPA health advisory level/guidance value of 70 ppt (combined PFOA/PFOS) for drinking water.

VT: VT's Sites Management Section has done this, the HW program has not been directly involved.

Question 6: What types of technical assistance does your state have on the topic of PFAS in the environment (e.g., fact sheets, webpage(s), data presentation, complaint logging)?

CT: DEEP Remediation Division has a webpage on Emerging Contaminants including PFAS. Remediation Division staff also gave a presentation to the regulated community in June 2017 identifying that PFAS should be treated as contaminants of concern at sites where warranted and provided soil and groundwater remedial criteria generated by the department that were available for use. Remediation Division is also conducting outreach to State Fire Administrator's Office and Connecticut Airport Authority to raise awareness of concerns with AFFF.

MA: The DEP Bureau of Waste Site Cleanup has on the www.mass.gov/eea/docs/dep/cleanup/draft-guidance-on-sampling-for-pfcs-2017-01-17.docx on PFAS and PFOA that addresses sampling and analyzing for these compounds. Expect more information to be posted in the near future on the subject. There is an Emerging Contaminants workgroup that is looking at these and other compounds for further action.

NH: NHDES has a web page showing groundwater data for PFAS by location, guidance on PFAS investigations, laboratories providing PFAS analytical services, progress on water line hookups, and weekly summaries covering PFAS developments in the State. NHDES periodically holds town meetings in areas impacted by PFAS contamination. A hotline is maintained for concerned citizens to call for information, log complaints, or make recommendations.

NY: NY has internal guidance documents for sampling and analysis of these compounds. There is also a PFAS page on the public website (<http://www.dec.ny.gov/chemical/108831.html>), which has links to general, as well as site-specific information.

VT: Factsheets, testing information, documents, community meetings, weekly updates, online - <http://dec.vermont.gov/commissioners-office/pfoa>. They also had an active hotline for questions and concerns, however, it is no longer in operation.

ADDITIONAL QUESTIONS

Question 7: Today, what are the primary pathways to the environment that your state has determined? (e.g. air deposition, groundwater discharge, industrial spills, etc.)

CT: Still evaluating. Likely groundwater and surface water discharges and industrial spills.

NH: NHDES has identified air deposition as being the primary pathway to the environment for fabric coating and chrome plating facilities using PFOS fume suppressants and industrial discharges from cleaning process equipment. One facility impacted groundwater from industrial spills and the overflow of settling ponds. NHDES continues to evaluate other pathways.

Question 8: Does your state have regulatory limits in place for individual PFAS compounds? Are limits associated with air, surface water, drinking water, soils, fish, sediment, milk, livestock?

CT: Yes, in November 2016, DPH established a Drinking Water Action Level for private wells of 70 ppt for the sum of PFOA, PFOS, PFNA, PFHxS, and PFHpA. DEEP developed remedial criteria that can be requested for use at remediation sites; however, they are not promulgated criteria.

Applies to Σ PFOA, PFOS, PFNA, PFHxS, and PFHpA

Residential Direct Exposure Criterion (soil)	1.35 mg/kg
Industrial/Commercial Direct Exposure Criterion (soil)	41 mg/kg
GA Pollutant Mobility Criterion (soil)	1.4 μ g/kg
GB Pollutant Mobility Criterion (soil)	14 μ g/kg
Groundwater Protection Criterion (groundwater)	0.07 μ g/L
Surface Water Protection Criterion (groundwater discharging to surface water)	Pending – likely lower than GWPC

NH: NH only has the AGQS in place for groundwater covering PFOA and PFOS.

Question 9: What regulatory limits (rulemaking) by media do you contemplate?

CT: Criteria for discharges from industrial waste water facilities and POTWs is needed.

NH: NHDES contemplates regulatory limits on PFAS stack emissions and is evaluating PFAS limits on soil, surface water and biosolids.

Question 10: What other emerging contaminants has your state become aware of?

CT: 1,4-dioxane.