February 3, 2026
Stakeholder Meeting

Responses to Questions from the Meeting

MassDEP has augmented its responses with additional information, therefore, responses in this document may differ from those provided during the meeting. Some questions and answers have been supplemented since the meeting for clarity.

The purpose of the meeting was to present the findings from the PFAS Testing Study for NPDES POTWs , recap the Sludge Study and introduce the PFAS Reduction/Destruction Technology Pilot Evaluation for Massachusetts NPDES POTWs Project.

- PFAS Testing for NPDES POTWs Study (report linked here). MassDEP commissioned this study to better understand PFAS concentrations in influent, effluent, and sludge at municipal wastewater treatment plants. The study sampled all 114 Massachusetts municipal wastewater treatment plants that discharge to surface waters. It was the first comprehensive study of PFAS in wastewater across Massachusetts.

- PFAS and Residuals Technology and Management Study Part 1 (Sludge Study Part 1) overview (website including reports link here) Part 1 focuses on the current and near-term destinations of Massachusetts sludge. This includes information surveyed from wastewater treatment plants, sludge disposal facilities, and septage disposal facilities to determine: volume of sludge and septage produced in Massachusetts currently and in 5 years, the cost of sludge/septage disposal currently and in 5 years, and the capacity of sludge/septage disposal options.

- PFAS and Residuals Technology and Management Study Part 2 (Sludge Study Part 2) overview (website including report link here) Part 2 focuses on the intersection of sludge and PFAS. It includes PFAS reduction and management technologies for wastewater and sludge, contributions of PFAS into POTWs (Indirect Discharges), PFAS impacts on sludge disposal methods as well as options for POTWs and regulators to consider.

- PFAS Reduction/Destruction Technology Pilot Evaluation for Massachusetts NPDES POTWs was awarded to AECOM/CDM Smith on December 23,2025 and aims to enhance MassDEP's understanding of available PFAS reduction/destruction technologies for Massachusetts POTWs by conducting pilot test projects on wastewater and sludge. The project involves performing pilot studies using multiple technologies on media from multiple POTWs, generating a Sampling and Analysis Plan, and submitting pilot data and a report of the results. PFAS reduction/destruction efficacy will be evaluated based on required test methods and a fluorine mass balance of the piloting units. The project also involves an evaluation of the long-term reliability and implementation of full-scale effectiveness for each piloted technology.

In response to recommendations from the projects listed above, MassDEP has developed the following documents

1. Approval of Suitability Holder Requirements and Guidance for Testing PFAS in Residuals (linked here)
2. Surface Water Discharge Permit Requirements and Guidance for Testing PFAS (linked here)

The Approval of Suitability (AOS) and Surface Water Discharge Permit (SWDP) Requirements and Guidance for Testing PFAS documents are posted on the Testing of PFAS in Wastewater and Residuals webpage linked here.

Responses to Questions

Sludge Study

#	Question	Answer
1	If the current regulatory and technology framework for incineration is inadequate, and Stoiber et al (2020) illustrates that incinerators continue the cycle of PFAS releases to the environment, then why does the report describe incinerators as a "potential method for disposing of PFAS compounds"? Given the research showing incineration contributes to the cycle of PFAS pollution, and the significant uncertainties, risks, and need for further research recognized in the report, why does the report describe incineration as "one mature technology showing promise for PFAS treatment of sludge (incineration)" that "could be immediately used or retrofitted to reduce overall PFAS releases to the environment"? Part 2,P. xix. That description conflicts with the other statements in the report recognizing the environmental and health risks, and significant uncertainties, of incineration.	The Sludge Study Part 2 report identifies incinerators as a potential method for disposing of PFAS by evaluating combustion efficiency. Measuring the combustion efficiency by generation of products of incomplete combustion like soot or carbon monoxide, is based on three main tenets, temperature, residence time, and turbulence, often referred to as the "3 Ts." Each of these will have a profound impact on the efficiency or destruction in the case of PFAS treatment. Target conditions for the 3 Ts in a thermal oxidizer treating PFAS in wastewater sludge have not been established. To increase PFAS treatment in new sludge incinerators, additional combustion equipment can be designed to achieve arbitrarily selected target conditions. The report also includes an analysis of necessary equipment and associated costs associated with retrofitting of the two existing sludge incinerators in MA.

#	Question	Answer
2	Part 1 data is already three years old. Any way for MassDEP to update this data yearly?	MassDEP will take this into consideration for future projects. MassDEP must carefully consider how to spend the available funding to advance its goals. The primary goal currently is to pilot technologies to evaluate PFAS reduction/destruction technologies.
3	How can lawmakers, MassDEP, and the public have confidence in the scenario modeling and cost projections of the Sludge Study reports 1 & 2 when the report author, Tighe & Bond, has been deeply involved in sludge-related design and construction projects in the state – projects that process sludge for land application? How can lawmakers, MassDEP, and the public have confidence in the sludge reports with the participation as consultants, representatives from MAWEA and NEBRA? It presents a fundamental conflict-of-interest and framing problem that undermines the report's credibility as a basis for public policy. These are trade associations whose missions explicitly include promoting land application, with a direct economic and institutional stake in preserving land application as a viable outlet.	MassDEP has confidence in the scenario modeling and cost projections in the Sludge Study and in the professionalism of the consulting firms hired to conduct these studies for the Commonwealth. MassDEP also provides oversight of its projects and reports to promote unbiased and useful report conclusions.
4	Are there any recommendations from the advocacy groups on the call on what method of sludge disposal they recommend?	MassDEP acknowledges receipt of this question, however this question was not intended for MassDEP.

PFAS Testing Study at NPDES POTWs

#	Question	Answer
1	Why isn't the state adopting all of the recommendations that were in the MassDEP PFAS Testing Study for NPDES POTWs, Data Analysis Report (PRF77)? Will MassDEP	Recommendations from the PFAS Testing Study for NPDES POTWs have been incorporated into guidance documents for NPDES facilities, Approval of Suitability holders, and labs. The guidance documents are under internal review at MassDEP

	publish or otherwise make public its reasons why it rejected some of the recommendations?	and will be published on mass.gov when finalized. MassDEP is taking other report recommendations into consideration should funding become available. At this time MassDEP has not rejected any of the recommendations from the report.
2	Given the data collected through this study, does MassDEP plan to assess or estimate the relative contributions of PFAS originating from industrial discharges versus municipal sources at POTWs?	At this time MassDEP is routinely evaluating PFAS compliance data collected from NPDES and Surface Water Discharge Permit requirements. The compliance data includes samples from certain industries discharging to the POTW's collection system. That compliance PFAS data can be found here at the EEA Public Portal. Also, In the PFAS Testing Study for NPDES POTWs, see Figure 4-37 for an analysis of PFAS in wastewater treatment plants with and without approved Industrial Pretreatment Programs (IPP). MassDEP is currently conducting a PFAS at POTWs sampling study with USGS, which includes sampling for PFAS within the collection systems of seven facilities, including locations with contributions from industrial and domestic sources.

PFAS Pilot Project

#	Question	Answer
1	Can you list the PFAS reduction/destruction technologies you will pilot?	The current scope of the PFAS Reduction/Destruction Technology Pilot Evaluation for Massachusetts NPDES POTWs Project includes the following technologies: novel adsorbents (including aluminum, beta-cyclodextrin, and mineral), granular activated carbon, foam fractionation, photo-activated Reductive Defluorination (PRD) with ultraviolet light, Hydrothermal Alkaline Treatment (HALT), and Supercritical Water Oxidation (SCWO).
2	Would air be monitored for PFAS at the plant as a part of the PFAS Reduction/Destruction Technology Pilot Evaluation for Massachusetts NPDES POTWs? PFAS partitions to air at low pH.	The projected scope of the PFAS Reduction/Destruction Technology Pilot Evaluation for Massachusetts NPDES POTWs Project includes PFAS testing using OTM 45 and OTM 50 for the Super Critical Water Oxidation (SCWO) pilot and at the Upper Blackstone Water Pollution Abatement

#	Question	Answer
		District's existing incinerator for the Regenerative Thermal Oxidizer pilot
3	Will this study compare the levels in non-wastewater products such as cow manure and car wash compounds versus what is found in sewage sludge and POTW effluents?	The PFAS Reduction/Destruction Technology Pilot Evaluation for Massachusetts NPDES POTWs Project will not specifically compare the levels in non-wastewater products to what is found in sewage sludge. Wastewater from car washes might be included in the wastewater being piloted at the several wastewater treatment plants proposed to be included in the pilot project. Also, one of the pilot technologies will specifically treat landfill leachate.
4	Who will finance these new reduction and destruction methods when it comes to incinerators and other technologies? This issue was created by the Government by allowing these chemicals into the American households so in my opinion these agencies should pay for it.	The PFAS Reduction/Destruction Technology Pilot Evaluation for Massachusetts NPDES POTWs Project is funded through Capital Funds, however MassDEP is currently unsure how future reduction/destruction technologies will be funded. At least two companies have entered into settlement agreements to resolve lawsuits alleging public water supply contamination by PFAS in the companies' products.
5	I didn't hear pyrolysis or gasification on the list of technologies to be piloted. If that is correct, why not?	In the PFAS Reduction/Destruction Technology Pilot Evaluation for Massachusetts NPDES POTWs project scope, pyrolysis and gasification are not included. However, if additional funds become available for additional pilot projects, MassDEP acknowledges that these are options to consider for future projects.

PFAS in NPDES Permits

#	Question	Answer
1	What is the basis for the expected recommendation to use grab, not composite samples?	USEPA Method 1633A (Method 1633) recommends grab samples rather than composite samples because some PFAS are known surfactants. Also, in a letter to NPDES permittees dated February 15, 2024 that reiterated the published multi-lab validated method, EPA states, "Because some PFAS are known surfactants, EPA strongly discourages composite sampling for compliance monitoring (see Section 8.2), but if composite sampling is approved for [a] given project, the equipment described below [in the letter] may be used."

		Finally, MassDEP is currently conducting a PFAS at POTWs sampling study with USGS, which includes comparing grab and composite samples of influent and effluent at five facilities.
2	Will the state include TOP assay, AOF/EOF, and Method 1633 in all subsequent testing of influent, effluent and sewage sludge? If not, why not?	PFAS testing has been included in Approvals of Suitability and NPDES permits since 2020, currently requiring testing via EPA Method 1633. As NPDES permits are renewed AOF testing requirements are also being included. MassDEP is conducting EOF and TOP assay testing in their POTW testing project with USGS, and plans to include AOF/EOF testing in the PFAS Reduction/Destruction Technology Pilot Evaluation for Massachusetts NPDES POTWs Project. As there is no EPA-approved methods for EOF and TOP assay, MassDEP does not currently have plans to include these methods in permit requirements.
3	Could you clarify what you mean by "facility to facility?" Do you mean investigation of each POTW or do you mean investigation (sampling) of each industrial facility that discharges to a POTW?	Testing of individual POTWs collection systems, including industrial and residential sources, is needed to effectively identify PFAS contributions to the wastewater treatment plant. The NPDES permits require testing of wastewater from industrial sources and for this data to be submitted to MassDEP.

PFAS in Land Application Regulations (310 CMR 32.00)

#	Question	Answer
1	Part 2 of the sludge study did not take into consideration the health and environmental impacts associated with the land application of sludge. Will DEP's proposed regulation take these things into consideration? For example, will DEP take into consideration downstream impacts to soil, crops, livestock, and groundwater?	It is too early to say what MassDEP will include in revisions of 310 CMR 32.00.

	For example, will DEP consider economic losses to farms, market rejection of contaminated products, long-term stewardship and remediation costs, and liability exposure for landowners? For example, will DEP consider EPA's Draft Sewage Sludge Risk Assessment for PFOA and PFOS	
2	Will the state implement an educational effort to reach out to farmers, gardeners, landscapers and others that may use sewage sludge or sludge-derived products to let them know that virtually all Mass sewage sludge and sludge-derived products contain PFAS?	In drafting of the land application regulations, 310 CMR 32.00, MassDEP will consider including labeling requirements regarding PFAS and outreach to stakeholders. MassDEP will post any upcoming meetings on the mass.gov website. Also, PFAS data for NPDES facilities and Approval of Suitability holders is available to the public through the EEA Public Portal
3	Will the state change its recommendations for land application (for example, stating that it is a safe practice) and other biosolids information on state managed websites to reflect that all sewage sludge generated at its POTWs is contaminated with PFAS, as shown in MassDEP PFAS Testing Study for NPDES POTWs?	MassDEP is working to revise the 310 CMR 32.00 regulations however, it is premature to project what MassDEP will be requiring in the future. MassDEP works to maintain the mass.gov website to include all information approved for publication. MassDEP maintains a public portal containing the data that has been submitted as a requirement of surface water discharge and residuals permits. Extensive information exists on MassDEP's website regarding risks associated with PFAS.
4	Regulating PFAS in sewage sludge is using the tail to wag the dog. What is DEP doing to reduce the usage of PFAS containing materials in Massachusetts?	MassDEP does not have regulatory authority over consumer products. MassDEP acknowledges that source reduction would help to reduce PFAS in sewage sludge.
5	What is the timeline for the proposed revisions to 310 CMR 32.00 and will there be stakeholder engagement prior to the draft being put out for public comment?	Currently there is no estimated timeline for the proposed revisions to 310 CMR 32.00. Draft revisions are currently undergoing internal review. Exact stakeholder engagement opportunities have not yet been defined but there will be opportunities during the draft regulations' public comment period.

6	Will the state share with the public where sewage sludge has historically been land applied and where it is currently being spread? And how much of this sludge is generated in-state and how much is coming from out of state? If not, are land certificates or any permitting data accessible by FOIA?	The current regulations require Approval of Suitability holders to report all information pursuant to 310 CMR 32.60 to MassDEP in an annual report. This information can be obtained through a Public Records or FOIA request. Although most holders of Approvals of Suitability in Massachusetts are not required to report where they land apply sludge, in drafting of the land application regulations, 310 CMR 32.00, MassDEP will consider including requirements for tracking of biosolids for land application. According to Approval of Suitability annual reports, over the past four years approximately 80% of biosolids distributed for land application in Massachusetts originated from Massachusetts. This value is based on the final biosolids product, which includes processed wastewater sludge as well as other materials such as yard waste and food waste. The Sludge Study Part 1 also contains information pertaining to how much sludge is generated in Massachusetts.
7	While the focus of this research has been PFAS, which is probably the most hazardous material, we know that residuals contain many other chemicals of concern. Will this additional contamination be recognized in education materials, and assessment of disposal methods, for example?	MassDEP is unsure what "other chemicals" is referring to here. 310 CMR 32.00 and federal regulations 40 CFR Part 503 contain limits on certain other pollutants known to occur in sludge/biosolids.
8	MassDEP stated that it "wants to drive PFAS values down" to "what is acceptable for land application?" What health-based research or risk assessments is the state using to determine "what is acceptable" with regard to the protection of Mass food, farms, water, and the public's health?	At this time there are no PFAS limits for the land application of sludge and septage. MassDEP is working on revising the 310 CMR 32.00 regulations which will include measures that reduce risk. As explained at the meeting, there are competing public policy goals for managing residuals. One is to reduce the risk to human health and the environment of PFAS in wastewater effluent and residuals by creating incentives for Approval of Suitability (AOS) holders. Others are to conserve available residual disposal capacity by encouraging the use of volume reduction technologies, and to help control disposal cost and environmental

		impacts associated with sludge disposal. Those additional impacts include carbon emissions associated with a longer sludge disposal chain and risks associated with disposing of sludge outside the state or region. Another major policy objective is to evaluate PFAS reduction and destruction technologies which can reduce risk associated with land application of residuals, as well as reducing risk associated with landfilling and incineration of residuals. We have not determined how or whether all of these considerations will be factored into revised regulations.
9	MassDEP has mentioned updates to 310 CMR 32.00 possibly including labeling requirements, accounting of land application locations. Is DEP considering concentration limits as part of those regulation updates?	MassDEP is considering concentration limits as a part of the 310 CMR 32.00 regulation revisions.
10	As it relates to this study and the Massachusetts Contingency Plan, has MassDEP considered land application as it relates to the 2019 MCP Standards?	According to the MCP regulations, 310 CMR 40.00, the application of residuals in accordance with 310 CMR 32.00: Land Application of Sludge and Septage is exempt from the definition of "Release" meaning any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping or disposing into the environment. In drafting of the land application regulations, 310 CMR 32.00, MassDEP will consider these regulations.

Other

#	Question	Answer
1	MassDEP mentioned that it had a part in ensuring that the pesticide used in aerial mosquito spraying were required to use non-PFAS containers. Many insecticides now add PFAS chemicals to the pesticide. Has the DEP suggested to the MA Pesticide Board to hold off on any registration approvals for	MassDEP includes discussion of PFAS in pesticides on the Mass.gov website.

	pesticides that have added PFAS ingredients?	