

PFAS and Residuals Technology and Management Study, Parts 1&2
January 31, 2025
Stakeholder Meeting

Responses to Questions from the Meeting

#	Question ¹	Answer ¹
1	Question from Mickey Nowak. If a facility has a disposal meltdown, such as South Hadley had last year, where should they turn to for help?	<p>Treatment facilities that dispose of sludge have contractual relationships with disposal facilities. If a disposal facility is disrupted, hopefully they can assist their clients with finding substitute disposal locations during the outage. It is recommended that disposal facilities have contractual relationships for alternative or supplemental disposal locations. When MassDEP learns of a pending disposal facility outage, we circulate a message alerting persons included in a MassDEP email list held by our Operator Training Section Chief to the planned or known outage. Emails can be sent to: John.J.Murphy@mass.gov to be added to this list.</p> <p>MassDEP acknowledges that disruption to the sludge disposal market have serious effects. MassDEP hopes that the sludge study report will continue the conversation and help all involved parties understand the potential problems and come to reasonable solutions.</p>
2	Question from Mickey Nowak. Are you aware that Naugatuck will also be phasing out accepting liquid sludge over the next two years?	MassDEP acknowledges this comment.
3	Sandra Wyman PE MA Toxics Use Reduction Planner; please add get rid of WWT method of generating F006 (metal finishing) sludge to your list!	MassDEP acknowledges the receipt of this comment.
4	Laura Orlando, Senior Scientist at Just Zero. Sewage sludge/biosolids are a direct and present threat to the health of Massachusetts residents when it is land applied or when sludge-derived products are used as fertilizers and soil amendments by the public. When will MassDEP end the land application of sewage sludge as a sludge management strategy given that all the sewage sludge generated in Massachusetts and from outside the state is	MassDEP is working on revising the 310 CMR 32.00 regulations to include PFAS limits for biosolids land application.

¹ Some questions and answers have been supplemented since the meeting for clarity.

	contaminated with 'forever chemicals' (PFAS) and there is NO safe level for ingesting PFAS, which is what happens when it is in our water, food, and air.	
5	Is MassDEP tracking the generation of long chain PFAS via precursor transformation in the biological processes managed by wastewater treatment plants?	MassDEP is currently working on multiple projects focused on precursor transformation, including a collaboration with USGS and the PFAS Testing at POTWs Project. These projects will culminate in reports that will be made available to the public once complete.
6	Do you think the "non-Industrial" PFAS contribution is more from household products or small industry which does not meet the criteria for pretreatment permitting?	Based on data MassDEP received, the answer appears to be "both."
7	My name is Sabrina Zak I am the Director of EJ at The CSJustice Ed Fund and organizer of Clean Air Taunton. Before I ask my question, I would like to clear up some misconceptions in the report about the Aries plant in Taunton. The project is not delayed merely due to permitting issues. The application isn't moving forward because the company can't get their plant up in running in New Jersey. The city is looking for a way out of the contract this is because residents came together and let the city know that residents don't want the plant in Taunton. Based on the research done by CAT we have found that there are huge data gaps in the understanding of the health impacts of incinerating sewage sludge, but what is known is that PFAS are not destroyed in incineration and that PFAS becomes airborne and is captured in the ash. The report does not consider the adverse health effects of incineration. Will MassDEP consider them in its sludge management strategy?	<p>MassDEP was part of the team that met with the Aries proponents a few years ago. One of the items requested was performance data from the NJ plant which at the time were expected to be up and running shortly. The difficulty in getting the NJ plant operating is one of the "permitting obstacles" we are referring to, a new technology without performance data make it hard for MassDEP and others to review permit applications and to properly condition permits should they be granted. To another point in your question, MassDEP is also reviewing the potential for impacts associated with incineration and following publications on conditions necessary for incinerators to adequately destroy PFAS. This part is being done by our colleagues in another Bureau and in our Office of Research and Standards.</p> <p>Finally, MassDEP acknowledges this information about the Aries plant in Taunton. Health effects of incineration were not included in the scope of this project.</p>
8	The unmeasured precursors of PFAS are going into the treatment plants and forming legacy PFAS such as PFOA and PFAS. More leave the plant than enter. The science on this is clear.	MassDEP acknowledges the receipt of this comment.

9	Without telling us which POTWs the graphs represent, can you give us general characteristics, such as size, urban/rural, amount and types of industry (SIU or not), etc.	The facilities represented by the two graphs are large facilities serving urban and suburban communities, both with active pretreatment programs regulating industrial users.
10	One of the communities worst impacted by PFAS in Maine is the rural, unincorporated community surrounding the Hawk Ridge facility, which the previous speaker noted processes 95% sludge from Massachusetts. Recognizing the way the PFAS in the sludge have impacted not only neighboring drinking water wells but the broader ecosystem, Maine Department of Inland Fisheries and Wildlife recently posted a large Do-Not-Eat order for wild turkey and deer harvested in the area surrounding Hawk Ridge based on PFAS bioaccumulation. There are likewise PFAS based limited fish consumption advisories for wild fish in the watershed. Mainers have been drinking that water, eating those fish, turkey and deer for the several generations that Hawk Ridge has been processing sewage sludge. How do you calculate the financial impacts of community wide, elevated PFAS exposure on this scale?	Calculating the financial impacts of PFAS exposure is outside of the scope of this project.
11	How will MassDEP protect MA farmers, their families, and the general public who are at risk of cancer and other diseases as a result of eating products off farms that have used sewage sludge as a fertilizer? The draft risk assessment for PFOA and PFOS in sludge released by EPA on January 14th shows cancerous and non-cancerous adverse health effects for people eating very modest amounts of farm products grown on land that has received sludge with concentrations of just 1 ppb for PFOS and PFOA, and it is well-documented that sewage sludge contains many times these concentrations, and many more PFAS.	MassDEP is closely monitoring the PFAS data submitted by Approval of Suitability holders in Massachusetts. In addition, MassDEP is working on revising the 310 CMR 32.00 regulations to include PFAS limits for biosolids land application.
12	Erica Kyzmir-McKeon, Senior Attorney at the Conservation Law Foundation	MassDEP acknowledges the receipt of this comment.
13	Are cost estimates on the high end since BIL SRF \$?	Cost estimates can vary depending on specific projects and their scope.

14	What is the “sufficient” reduction of PFAS — and which PFAS are being referenced - in a sludge incinerator when it is known that any PFAS in the human body is dangerous, and that danger multiplies when there are multiple PFAS contamination sources (water, food, air)? What is Brown & Caldwell’s understanding of the PFAS-related breakdown products that are volatilized when PFAS are burned? Are these being measured?	The comment on "sufficient" reduction of PFAS was in reference to technologies being able to reduce PFAS below regulatory limits when they are set. In the research on incinerators that Brown & Caldwell is conducting, analysis is being performed to measure PFAS (to the extent currently possible) of degradation products in all streams.
15	Sorry, that was a mistake	MassDEP acknowledges the receipt of this comment.
16	EPA has repeatedly referenced data gaps on PFAS impacts to air, water, and health from sludge incineration, but at least one study (Seay et al., 2023) shows that sludge incineration results in PFAS emissions. What is MassDEP is doing to fill data gaps (i.e., implementing monitoring requirements at sewage sludge incinerators?) Any analysis of PFAS air emissions from sludge incinerators should include total fluorine measurements in addition to targeted PFAS analysis and should assess products of incomplete combustion. We request that any analyses be made public.	MassDEP does not currently have PFAS air emissions standards.
17	(2) EPA’s recent Health Risk assessment for PFOA and PFOS in sewage sludge concluded that regardless of sludge disposal method, industrial pretreatment can reduce exposure and health risks. What steps MassDEP is taking to reduce PFAS from industrial users upstream?	MassDEP requires PFAS testing of Significant Industrial Users per a facility's NPDES permit. The Executive Office of Energy Environmental Affairs' Office of Technical Assistance provides confidential assistance for industrial users to help reduce negative environmental impacts.
18	Adam Nordell, campaign manager, Defend Our Health. In Maine we have seen upwards of 80 farms contaminated above concerning thresholds and around 1,000 rural drinking water wells contaminated above the national drinking water standard. Many of these impacted farmers and rural Mainers now have PFAS blood serum levels testing several orders of magnitude higher than a level at which the National Academies of Science anticipates an elevated risk of cancer and other adverse health outcomes. Does MassDEP have a plan to evaluate and mitigate the historic environmental and public health impacts of sludge spreading in your state?	MassDEP is working on revising the 310 CMR 32.00 regulations to include PFAS limits for biosolids land application. Public health is outside the scope of this project and not under the authority of MassDEP.

19	<p>Kyla Bennett, Public Employees for Environmental Responsibility. The only way to decrease the amount of PFAS in sewage sludge is by: 1) defining PFAS broadly; 2) regulating them as a class (instead of one by one); and 3) banning all non-essential uses. Unless and until we get PFAS out of consumer products, pesticides, plastic containers, and pharmaceuticals, we will never get a handle on this issue. When is MA going to take this seriously and tackle the problem comprehensively?</p>	<p>MassDEP has allocated \$750,000 for the PFAS and Residuals Technology and Management Study to better understand sludge management and the intersection of PFAS. Consumer products are outside the scope of this project and not under the authority of MassDEP.</p>
20	<p>Clint Richmond, Conservation Chair, Sierra Club</p> <p>Volume reduction makes sense, but have there been studies of PFAS (or other toxic) releases from sludge volume reduction strategies in particular dewatering or drying?</p>	<p>MassDEP is not aware of studies of PFAS emissions from dewatering. There have been preliminary studies that look at emissions of PFAS from drying. These technologies don't get to a high enough temperature to significantly reduce PFAS, so PFAS are detected from drying.</p>
21	<p>Given that stabilized biosolids have higher PFAS levels than raw sludge, will the state require the testing of all stabilized biosolids for PFAS, make clear to the public where in the process stream the testing was done, and make that data available to the public?</p>	<p>The Approvals of Suitability (AOS) require AOS holders to test for PFAS on a quarterly basis. These data are posted on the public portal website located at https://eeaonline.eea.state.ma.us/portal#!/search/npdes</p>
22	<p>Does the speaking think that a 20-ppb limit used by several states will protect human health? The EPA draft risk assessment identifies increased risk of farmer family cancers when sludge containing only 1 ppb PFOA or PFOS and does not consider impacts to kids.</p>	<p>Identifying human health risk is outside the scope of this project. MassDEP acknowledges that EPA has released the draft risk assessment.</p>
23	<p>Laura Spark, Clean Water Action Why were the potential environmental impacts of pyrolysis and gasification not addressed in the report, including concerns about unknown emissions, while issues related to other options was discussed? Does MassDEP have data about existing levels of contamination on farms and compost? How can decisions be made about adding additional PFAS contamination be made without understanding baseline contamination at Massachusetts farms?</p>	<p>The Part 2 report includes a discussion of the advantages and disadvantages of different technologies, including environmental impacts. The research on the fate and transport of PFAS in biosolids through pyrolysis and gasification is limited, though preliminary results are showing significant reductions.</p> <p>MassDEP will take the second part of the question under advisement. Approvals of Suitability (AOS) require AOS holders-some of which are compost facilities to test for PFAS on a quarterly basis and submit an annual distribution report to MassDEP. MassDEP is closely monitoring the PFAS data submitted by Approval of Suitability holders in Massachusetts.</p>

24	Laura Davis, Northeast Organic Farming Association, Mass Chapter, will we get copies of this presentation?	The slides from this presentation will be posted on the MassDEP website after the presentation.
25	Kyla Bennett from PEER. Industrial Pretreatment can only go so far when many of these PFAS are coming from municipal waste - again, unless and until you regulate PFAS in products, this is not going to solve the problem.	MassDEP acknowledges the receipt of this comment.
26	I feel more and accurate data needed for decision making. You can manage the problem until it is accurately measured. I also feel the toxicology of the PFAS/PFOs has not been adequately addressed.	MassDEP acknowledges the receipt of this comment.
27	Time to turn OFF THE TAP. We need regulations to stop putting PFAS into so many consumer products!! Laurie Nehring, PACE in Ayer	MassDEP acknowledges the receipt of this comment.
28	can't manage I meant to say. If you want to do a Best Available Control Technology (BACT) analysis you need the data to filter the control technology available.	MassDEP acknowledges the receipt of this comment.
29	Todd Brown and Bill Brower - thank you for your excellent and thoughtful presentations. It was great to engage in this conversation at NEWEA earlier this week with the many dedicated folks who are trying to establish a way forward with science and data.	MassDEP acknowledges the receipt of this comment.
30	Can you revisit the 2 slides with the state actions?	Slides were revisited during presentation.
31	MA is currently planning to restrict PFAS in some products (personal care products, children's products etc.) by 2030 and not to take action on any other consumer product until 2035. This timeline does not seem to be in line with MassDEP thoughts about upstream management of PFAS in sludge. Is it possible to work with legislative leaders to explain the importance of more aggressive timelines on restricting PFAS in a broader range of consumer products?	PFAS restrictions on consumer products is outside the scope of this project and outside of MassDEP authority.
32	Janine Burke-Wells, Northeast Biosolids & Residuals Association. As Bill mentioned, moving sludges out of the POTWs is essential for proper operation. I am aware of at least one POTW in Massachusetts (smallish) and one in RI (huge) with TSS violations in the past few	MassDEP understands that failure to timely remove sludge from facilities negatively impacts the performance of the facility, as well as poses the potential for negative impacts on water quality. This is one reason why we believe assessment of available disposal capacity is an important part of the discussion.

	years. Can someone speak to whether you are starting to see water quality impacts due to this major state capacity issue?	
33	Clarification of my question above—MA Legislature is currently looking at a bill to restrict PFAS in some products by 2030 and no others until 2035.	MassDEP acknowledges the receipt of this comment.
34	Given that all Massachusetts and out-of-state sludge is contaminated with PFAS and microplastics, has MassDEP tracked where sewage sludge/biosolids were land applied in the state? Is MassDEP tracking land application sites now? Has MassDEP tested the soil and water for PFAS and their precursors on farms that have had sewage sludge spread on them? If not, does MassDEP have a plan to test the water and soil for PFAS on farms that have had sewage sludge spread on them? If not, why not?	MassDEP will take this comment under advisement. The Approvals of Suitability (AOS) require AOS holders to test for PFAS on a quarterly basis. The 310 CMR 32.00 regulations requires AOS holders to submit an annual distribution report. However, this may not capture the final destination of the product. MassDEP is currently working on multiple projects focused on precursor transformation, including a collaboration with USGS and the PFAS Testing at POTWs Project.
35	Elise Pierce, representing Massachusetts Breast Cancer Coalition. Has MassDEP studied microplastics in sewage sludge, a ubiquitous pollutant in all sludge that has its own adverse health effects on humans and could magnify the problems caused by PFAS? If not, will it begin testing for microplastics in sludge and make that information available to the public? Additionally, given what we know about PFAS and microplastics in sewage sludge, among the thousands of other chemicals in sludge, the rules that regulate land application in the state—40 CFR Part 503 and 310 CMR 32.00—are not fully protective of public health and the environment. In fact, plastics and PFAS are not part of these regulations. How will MassDEP's sludge management strategy reflect the reality that PFAS and microplastics are ubiquitous in sludge and pose significant risks to the health of soils, people, and the environment?	Microplastics are outside of the scope of this study.

36	Sludge-derived products such as sludge-derived compost contain PFAS. How will MassDEP notify the public about this? Does the agency have a plan to end the use, sale, or distribution of these contaminated products in the state? - Steve O'Neill, Slingshot	MassDEP is working on revising the 310 CMR 32.00 regulations to include PFAS limits for biosolids land application. These data are posted on the public portal website located at https://eeaonline.eea.state.ma.us/portal#!/search/npdes .
37	Laurel Schraider, Senior Scientist, Silent Spring Institute. With respect to source reduction among non-industrial sources, are there efforts underway to identify contributions from relevant institutions (e.g., schools, hospitals) and commercial businesses, for instance from floor waxes or stain resistant coatings on textiles? These might provide some low-hanging fruit for reductions in influent while working towards broader restrictions on PFAS in products, starting with non-essential uses, to reduce residential sources too. Also, has there been any testing using the total oxidizable precursor (TOP) assay to assess precursors?	MassDEP requires PFAS testing of Significant Industrial Users per a facility's NPDES permit. The Office of Technical Assistance provides confidential assistance for industrial users to help reduce negative environmental impacts. MassDEP is currently working on multiple projects focused on precursor transformation, including a collaboration with USGS and the PFAS Testing at POTWs Project.
38	Deirdre Cummings, MASSPIRG. Thank you for this report and webinar. It is clear from your findings the only real and safe solution is to reduce/eliminate PFAS at the source. It is clear from the findings the only safe solution is to ban/restrict PFAS use. This report demonstrates we only have many harmful, costly and untested options to get rid of or treat PFAS safely. Second - given clear public health impacts of PFAS we should not be applying any of this on farms. Lastly, is MassDEP now tracking where all sewage sludge is land applied in the state?	MassDEP will take this comment under advisement. The Approvals of Suitability (AOS) require AOS holders to test for PFAS on a quarterly basis. The 310 CMR 32.00 regulations requires AOS holders to submit an annual distribution report. However, this this may not capture the final destination of the product.
39	It sounds like there are restrictions on air emissions of PFASs from sludge incineration. Is there effort to expand these restrictions to manufacturing sites.... now there is no PFAS emission restrictions through MassDEP air permits of manufacturing facilities.	MassDEP does not currently have PFAS air emissions standards.

40	<p>I am Laura Davis from the Northeast Organic Farming Association, Massachusetts Chapter. MassDEP must stop the application of sludge and sludge derived agricultural amendments on all land in Massachusetts. The EPA has concluded that no amount of many of these fluorinated organic chemicals are safe. We cannot prolong the contamination that is occurring in our soils, our water and food. Farmers should not be required to test produce, meat, water or milk from their farms for PFAS and PFOS chemicals, until they are protected from liability and financial ruin. Some will need help identifying alternative enterprises to make a living. Farm families will need both medical and mental health support to manage disease and trauma caused by the bioaccumulation of these chemicals in their bodies and the potential loss of the family farm. Naturally, consumers want to know if their Mass grown food or their well water is contaminated with PFAS/PFOS.</p>	MassDEP acknowledges the receipt of this comment.
41	<p>Testing of farm products should commence after the PFAS fund has been established, not before. This fund should support homeowners on wells with testing and remediation filters. We also support requiring agricultural amendment manufacturers to test pesticide and fertilizer inputs for PFAS and PFOS prior to selling in the Commonwealth. Communities and private entities that have received groundwater discharge permits from MassDEP for Underground Injection Control (UIC) class V wells, must be required to test for PFAS/PFOS prior to injecting treated wastewater into an aquifer used for municipal drinking water and farm irrigation. In the long term, manufacturers must stop using these chemicals in order for this tsunami to calm. Our government can act with laws that ban the use of PFAS and PFOS containing products in pharmaceutical, consumer, industrial and agricultural products in order to protect the lives of Massachusetts residents. Spreading sewage sludge on land is the first step.</p>	MassDEP acknowledges the receipt of this comment.
42	Will the answers to all the questions be published and posted?	MassDEP will post the questions and answers on their website.

43	Outside of the health impacts to farming communities recently recognized by EPA, PFAS on sludge-spread farms represents a severe financial risk to farmers. PFAS impacted farms have gone out of business in at least four states. Consumers don't want PFAS on their dinner plate and farmers do not want to sell contaminated food. Is MassDEP considering these types of externalized costs from the land application program?	MassDEP is working on revising the 310 CMR 32.00 regulations.
44	Do studies show that main sources of PFAS in sludge is actually from household sewage? I have heard this - and it concerns me because it shows the majority of PFAS is from products we use in our homes.	The Approvals of Suitability (AOS) require AOS holders to test for PFAS on a quarterly basis. Additionally, studies have shown that household sewage contributes to PFAS in wastewater because PFAS and precursor compounds are ubiquitous in consumer products. The Part 2 study and others indicate that the relative contributions of domestic vs. commercial/industrial sources of PFAS to wastewater are likely to be site-specific (see VTDEC's Poly- and Perfluoroalkyl Substances Inputs to Wastewater Treatment Facilities Summary Report of 2022). Several studies have also documented the presence of unquantified PFAS precursors in wastewater, (e.g. Tavasoli et al., 2021), and the science continues to evolve. The Part 2 report lists some resources for consumers and small business owners to identify common sources of PFAS and non-PFAS alternatives.
45	Great presentation by all involved. During the impact measure of expectation of water and sewer cost, were the potential PFAS source control measure required by PWFT under consideration and recognized, or were the cost specifically defined to the POTW impact? While the focus of the activity of and contribution of residuals / biosolids with the treatment appear to be specifically focus on POTW, PWTF are often under the same requirements and are often not able to utilize source control. - Brad Perron Salem and Beverly Water Supply Board	The costs were specifically defined for the water and sewer rate payers based on the size of the POTW. MassDEP also understands that the facility asking this question holds an AOS for land application of water treatment plant sludge. It is expected that revisions to the 310 CMR 32.00 [regulations] will affect this and other water treatments that hold AOS. The cost impact for this activity has not been analyzed.
46	EPA ORD is conducting a year long study of PFAS transformation within various stages of treatment in a WWTP	MassDEP acknowledges the receipt of this comment.

47	<p>Paula Mouser - UNH and Wright-Pierce. I wanted to thank MassDEP, B&C and T&B for the excellent work on this study. My question relates to sludge movement across states. Now that it is clearer how solids are moving around the area, will there be a broader regional effort to more closely track sources and distribution in New England?</p>	<p>Part 2 of this study includes options for POTWs and the legislators to consider one of which includes regional facilities.</p>
48	<p>Sludge disposal is getting harder now and more costly. I understand the PFAS study and concerns, but this is driving cost up because availability of land, incineration, compost areas is getting more scares. Is there a study for sludge disposal facilities and areas being looked? Rene</p>	<p>The PFAS and Residuals Technology and Management Study looked at the sludge management landscape in Massachusetts of which included sludge disposal facilities.</p>
49	<p>Is MassDEP consulting with the MA Centers for Disease Control and Prevention in the development of its proposed PFAS in sludge regulatory limits?</p>	<p>MassDEP is working on revising the 310 CMR 32.00 regulations to include land application limits for biosolids.</p>
50	<p>Steven LaRosa, Weston & Sampson Engineers, Inc. Thank you for a great presentation and high-quality data evaluation. It is going to be extremely important to have "interim" solutions for sludge/biosolids handling for the next 5 - 10 years as removal of PFAS from products and PFAS destruction solutions are installed. We can't simply shut off sludge disposal techniques without an option for handling. Maines actions have shown how removing land application as an option without an alternate solution resulted in simply moving risks from Maine to other states. We may need to allow controlled, monitored land application for several years as better solutions are developed.... even though it is unpalatable.</p>	<p>MassDEP acknowledges the receipt of this comment.</p>

51	<p>Brittany Ebeling, Berkshire Environmental Action Team.</p> <p>I am an organic farmer undertaking remediation of a parcel of land and in attempting to understand if the field has ever been contaminated with sludge, I requested public records of permits for sludge application to the field in question. I was shocked to learn that not only does MassDEP not maintain digital records beyond the most recent three years, but the department also maintains a practice of destroying these records after 15 years. Given the bio persistence of PFAS in soil and water, does MassDEP intend to change its record-keeping practices as Maine has done? Maine provides farmers and landowners a service to find pertinent records free of charge, though when I performed a public records request, I was informed that fulfilling my request would come at a high personal cost because of the effort involved in sourcing the non-digitized records. Is MassDEP adjusting any of its record keeping standards in light of these reports?</p>	<p>MassDEP follows records retention requirements which are prescribed by statute. Changes to statute require legislative action and are outside of the scope of MassDEP's authority. However, MassDEP always seeks to improve information accessibility, which includes efforts in recent years to consolidate information on the location of land application of residuals in digital spreadsheets and publish residuals lab analytical results of PFAS data on the EEA Data Portal. This has significantly improved the availability of data and records and MassDEP is open to recommendations for further improvement.</p> <p>MassDEP does not charge for the first four hours of staff time required to respond to a public records request. However, large requests that require more than four hours of staff time to fulfill may incur a fee of \$25 per hour (starting at the fifth hour) in accordance with Massachusetts Public Records Law (M. G. L. c. 66, § 10(a); see also 950 C.M.R. 32.07). MassDEP public records staff inform requestors of the potential time and fees required to fulfill their request in order to help requestors narrow the magnitude and cost as necessary.</p>
52	<p>Eric Kelley, Apex Companies - A consideration for future study, evaluating the POTW PFAS waste load benefits/costs provided by public water system PFAS treatment facilities for those communities served (partially/fully) by POTW(s). A significant number of drinking water PFAS facilities will be commissioned in the next few years.</p>	<p>MassDEP acknowledges the receipt of this comment.</p>
53	<p>Are there plans to measure PFAS in soils and groundwater in areas where land application has occurred, especially farms?</p> <p>And given that the ultimate solution to getting PFAS out of sludge is to avoid using these chemicals in the first place, how can MassDEP support efforts to restrict PFAS in commerce and industry in MA?</p>	<p>The Approvals of Suitability (AOS) require AOS holders to test for PFAS on a quarterly basis. MassDEP is working on revising the 310 CMR 32.00 regulation to include PFAS limits for biosolids land application.</p> <p>MassDEP is currently not measuring PFAS in soil and groundwater where land application has occurred.</p>
54	<p>Will there be another public presentation when the report for Part 2 is finalized?</p>	<p>No, there will not be another public presentation when Part 2 is finalized.</p>

55	Question from Mickey Nowak. Wastewater facilities do not have the ability to store biosolids. There is, at this point, no perfect solution. Aren't we at this point in time looking for the best present solution? Wastewater facilities have done a great job at cleaning up waterways. It does not make any sense to backslide on all of the good work done on this.	MassDEP funded the PFAS and Residuals Technology and Management Study to gather data on near term and future next steps.
56	Is MassDEP going to start requiring PFAS monitoring in air emissions from incinerators? This seems like a very dangerous gap. My 7-year-old godson lives two miles from the Upper Blackstone facility. - Steve O'Neill, Slingshot	MassDEP does not currently have PFAS air emissions standards.
57	Can MassDEP warn farmers about these PFAS risks to their families and customers?	The Approvals of Suitability (AOS) require AOS holders to test for PFAS on a quarterly basis. This data is posted on the public portal website located at https://eeaonline.eea.state.ma.us/portal#!/search/npdes
58	Clint Richmond, Conservation Chair, Mass. Sierra Club P. 91 of the report states that potential future outlets for Massachusetts sludge are in development, with planned startup within the next 5-10 years including deep well injection. We also have some existing Class V injection wells for wastewater disposal in Mass., which are not mentioned at all. Will the report discuss this in more detail in particular the environmental fate of PFAS and other toxic chemicals from this dangerous practice?	Class V injection wells for wastewater disposal are out of the scope of this project.
59	Thank you for this important discussion. We look forward to working together with you to address the production and disposition of sewage sludge in the Commonwealth.	MassDEP acknowledges the receipt of this comment.
60	Will this presentation or meeting video be shared on the MassDEP biosolids webpage?	Yes, the recorded meeting is posted on the MassDEP website.
61	Comment from Mickey Nowak. The sludge reduction technologies mentioned are about removing water from biosolids. While they reduce the wet tonnage, they do not reduce the dry tonnage.	MassDEP acknowledges the receipt of this comment.

62	Tracy Frisch, the lead author of the Sierra Club, Atlantic Chapter, 2023 report “Sewage Sludge Fertilizer Contaminates Farms with Toxic PFAS.” PFAS is only one class of toxic contaminants found in sewage sludge. A 2018 report of EPA Office of Inspector General stated that there were hundreds of unregulated and unassessed chemical contaminants in sludge used for land spreading. Even if all PFAS were miraculously kept out of sewage sludge, land application would still be a threat to farms, surface and groundwater, our food supply, and public health.	MassDEP acknowledges the receipt of this comment.
63	Has MassDEP communicated, planning communication or required communication of concentrations and risks associated with PFAS in biosolids to the landowners where the material is land applied?	MassDEP is working on revising the 310 CMR 32.00 regulations to include PFAS limits for biosolids land application.
64	Kathy, where can we find that NH DES presentation that you mentioned? If available.	https://www.newmoa.org/event/pfas-wastewater-septic-systems-webinar/
65	Where is MassDEP on advising or permitting relative to the regional Fitchburg Biosolids Mgt. Facility mentioned in the TM1 Report?	MassDEP provided significant input to the City regarding a permitting pathway as well as the legal site assignment concerns and coordinated with EPA in that regard. MassDEP is awaiting a response from the city on whether it will move forward with its proposal.
66	Jennifer Pederson, MWWA, Clarifying Brad's comment from Mass Water Works Perspective - I think what Brad was communicating is that some PWS treatment processes also produce sludge that needs to be disposed of, and those costs should be considered in MassDEP's evaluation of the overall costs to address this problem.	MassDEP acknowledges the receipt of this comment.
67	Yes, Ty this needs to be addressed	MassDEP acknowledges the receipt of this comment.
68	So, what would all these creative minds recommend that society do with the daily flush if no one wants land application, landfilling, or incineration? I believe each person in this conversation flushes a few times every day, at a minimum.	MassDEP funded the PFAS and Residuals Technology and Management Study to gather data on near term and future next steps.

69	Thank you for the response. To clarify, our question was specifically related to Public Water Treatment Facilities (PWTF) who hold an Approval of Suitability for the Land Application of Sludge. There are other entities that are permitted under 310 CMR 32.00 outside to wastewater plants. If MassDEP has not considered these, it should have been expanded under this study. Brad Perron (SBWSB)	MassDEP acknowledges the receipt of this comment.
70	What would a regional facility do differently with sludge than the currently existing facilities? How exactly would regional facilities reduce contamination? Please send an answer to this question to steve@slingshot.org , as well as my earlier question, which is: will MassDEP start requiring air emissions monitoring for PFAS? - Steve O'Neill	According to Part 2 of the PFAS and Residuals Technology and Management Study a regional facility could offer a more coordinated and efficient approach to managing sludge. Further, this may allow for better contamination control such as PFAS reduction strategies.
71	Thank you for the opportunity to participate in this discussion.	MassDEP acknowledges the receipt of this comment.