Sewer Signals Podcast
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Season 1 Episode 1: Scott Bessler with the Metropolitan Sewer District of Greater Cincinnati, Ohio

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Transcript

Anna Mehrotra: All right, welcome to Sewer Signals, a podcast on utility experiences with wastewater surveillance. I'm Anna Mehrotra, Director of the Wastewater Surveillance Program at the Water Environment Federation, and I'm delighted to be joined today by Scott Bessler, who has bravely and graciously agreed to be my first podcast guest ever. Hey, Scott. Welcome. How are you doing today?

Scott Bessler: Hey Anna, I'm doing well. Excited to talk to you about this great topic.

Anna: Awesome, me too. So, Scott serves as the Assistant Superintendent and Programs Branch Chief for the Compliance Services Division of the Metropolitan Sewer District of Greater Cincinnati or MSD. He holds degrees in Biological Sciences from Northern Kentucky University, that was a Bachelor's of Science in 2006. and from the University of Alabama where he got his Master's of Science in 2010. Scott also oversees strategic research initiatives for MSD and I met him when he attended WEF's Public Health and Water Conference and Wastewater Disease Surveillance Summit back in March in his hometown of Cincinnati. Scott is also a member of the Utilities Community of Practice. So, a little bit about MSD. It is a local wastewater utility that provides sewer service and wastewater treatment to more than 850,000 people across 290 square miles. in the city of Cincinnati and also outside the city in Hamilton County, Ohio. A total of about 190 million gallons of wastewater are treated daily across nine water resource recovery facilities. With the background out of the way, let's dive in, Scott. We're talking today about testing untreated wastewater to collect information on health in a community and specifically we're going to talk about COVID. And as you know, there are many different terms for this whole field from wastewater surveillance to sewage surveillance to wastewater based epidemiology and so on. Do you have a terminology preference? And if so, why?

Scott: Yeah, so I thought a little bit about this prior to the call. I've used a number of different terms for this, but one of the drivers of how a utility functions is, you know, being driven by the Clean Water Act and the regulations that are around the Clean Water Act. It seems to me that EPA and CDC kind of use different terminology when it comes to, you know, describing whether it's wastewater surveillance, wastewater monitoring, I think I'm of the camp of wastewater surveillance. Now, I think that's my preferred description. And I would say that because of kind of the discourse that I've seen following some folks on Twitter after the meeting that you talked about where we met at and hearing their perspectives from the public health side and how there's already kind of a framework set up for the term surveillance. And I think it fits really well into this world. I think there's probably going to need to be some thought on the regulatory side, you know, with EPA and how that kind of cascades down to the utilities. And what verbiage they use in the future. So, I'm of the, of the opinion that wastewater surveillance is the right one.

Anna: Yeah, those are those are all great points. And I know what you're talking about that, you know, there is this historical field that's called public health surveillance. And that's kind of why

this term surveillance gets used. But anyway, so then we'll talk, we'll call it wastewater surveillance for our purposes today.

Scott: Sounds good.

Anna: So tell me a little bit about how this all got started at MSD, you know, when and how did your utility get involved and get going with its wastewater surveillance program for COVID?

Scott: Sure. So prior to me joining MSD, uh, a fellow named Bruce Smith and the Ohio Department of Health and the U.S. EPA Office of Research and Development all came together trying to figure out this problem, how we could sample wastewater for COVID. And this was early 2020 when this had happened, I didn't join MSD until early 2021. But that was when the program was established. We monitor at four different treatment plants. We did for a very long time monitor at one of our combined sewer overflows. Those are great long term data sets from March 2020 to present essentially. So that's kind of how it got started. It got handed off to me after Bruce departed. He's now with the EPA and I've been just kind of fostering it along and working with the Ohio Department of Health to make sure they get their samples on time and I get them their flow information every week. And it seems to work really kind of seamlessly. It's not a whole lot of work on our part, which is great.

Anna: It's great to hear. Is there an official title for the program?

Scott: You know, we don't actually have one. We communicate the fact that we are doing it through our social media channels. But you know, we're putting out the Ohio Department of Health coronavirus and wastewater dashboard information, right? That's, that's what we're communicating. So we don't have a real title for it, though. Maybe, you know, I could come up with one in the future.

Anna: There might be a clever acronym.

Scott: Yeah, right.

Anna: And so that that's your primary partner is the Ohio Department of Health, right?

Scott: Right now it is. Yeah. The US EPA Office of Research and Development was a huge partner throughout. The startup and then first year and a half of data collection, they are since then getting out of the COVID and wastewater analysis business and that's all being centralized to a laboratory in Reynoldsburg, Ohio. So all of the samples from around the state are going to end up there at some point. They're in a phased, um, a phased shift now.

Anna: Gotcha. Okay. Do you work at all with local health, your local health department?

Scott: Yeah, so we had a couple of attempts, I guess you would say when I first started at MSD to bring local health departments here to make them understand what number one, how hydrology works, what a sewershed is, what a watershed is. I find that that's a huge disconnect between the folks in the public health world that think in terms of case numbers neighborhoods. Um, and the way that utilities think, especially wastewater utilities in terms of how water moves right. Um, so, those, those meetings weren't really all that fruitful. I'm actually in the process of trying to restart that now with the help of some better technology. Um, so I got a possible pilot study that I've been talking with our public health folks here in the city of Cincinnati so they can

inform us on where they want us to sample inside of our collection system. So hopefully that takes off and you know, we get some really cool information out of that.

Anna: Yeah, that would be cool because up until now you have been sampling at the four facilities, right?

Scott: Correct.

Anna: Have you done any sampling up in the collection system so far?

Scott: Yeah, we had one long-term collection at our Big L Run combined sewer overflow (CSO). So if you are familiar with our permit, which you're probably are not, CSO five. It's one of the bad actors that's been fixed now as a part of our consent decree.

Anna: Got it.

Scott: They did a cool sewer separation where there's a nice stormwater channel, uh, above ground, and then a, a tunnel underneath it that carries the, the sewer to the main interceptor.

Anna: Okay. And who actually collects the samples for you? Is it MSD staff?

Scott: It is. So this works seamlessly, I think, in a lot of utilities that have those, uh, you know, auto composite auto samplers that are pulling influent, you know, all the time, uh, that is, that was already an established process here where, you know, we collect the 24 hour composite, a little sample gets pulled off, packaged up, shipped off, and actually our plant operators collect those samples and then the lab splits it off and then the lab ships it.

Anna: And you said that already had been running the samples, but they're in the process of moving over to a different lab. Where are you in that process?

Scott: Right now, we have shifted as of the end of March. So other utilities haven't it's I think they're phasing it to try to control the load that's coming into that Ohio Department of Health lab in I think it's Reynoldsburg, Ohio, even though I don't know where that is. I remember hearing that somewhere.

Anna: So do your utility – just getting really into the weeds here – lab folks have to courier the samples to this new lab? Do they ship them overnight? Do they, do they drive them themselves? Like how does that actually work?

Scott: So at first we were, we were taking the samples up to the EPA lab because it's only about four miles away from our central facility. So that's a, that's obviously why the partnership started in the beginning is you had interest from EPA and, you know, MSD was right here and we had relationships with them already, and we were carrying them back and forth. It was sometimes our sampling crew that was doing that, sometimes it was a courier service. Now we are shipping everything. We're boxing it up and shipping it to the central lab.

Anna: Okay, and is this central lab, still just looking at SARS-CoV-2, are they looking at any other targets in wastewater yet?

Scott: As far as I understand, they are only looking a just SARS-CoV-2. And, I don't know if they're looking at variants right now. Uh, they don't put that on their dashboard. There's no

information on variants that's thrown out to the public at this point. Um, that doesn't mean that that couldn't happen in the future, but I'm not sure.

Anna: Has there been any talk about different, about either variants or different targets, you know, influenza, RSV, antimicrobial resistance, anything like that?

Scott: So I know that there's a lot of interest from US EPA on other stuff that they can monitor, like that list that you threw down, especially antimicrobial resistance. That's something they're very interested in. I haven't heard anything from the state level health department, but the conversations that I'm having with the local health department right now, um, I have asked them sort of for a wish list what they want to sample for. So hopefully, you know, they'll be able to inform that conversation.

Anna: Yeah, that's a great idea because that would also make it more likely that they'll be engaged, right?

Scott: I think that's really, Anna, what you need in this is, is the utilities and the local health department working together to understand the needs of the health department and what a utility can do for them.

Anna: Yeah. Well said. Um, all right. Here's, here's kind of the big question. We talked a little bit about the Ohio coronavirus wastewater dashboard. That also gets fed into the CDC's National Wastewater Surveillance System dashboard. So the data are are out there. But how do you feel the wastewater information for COVID is actually being used. Um, you know, in, in your region.

Scott: I think that's a really great question. And I think it depends on who you talk to, uh, in the public health sphere on how they are using it. You know, I think there's probably health departments, local health departments in Ohio that are making decisions based upon that, uh, you know, actionable public health decisions based upon that information. But that's likely not the case across the state because a lot of local health departments are resource strapped and county health departments are resource strapped. They just, or they don't have the capacity, you know, to, to even really understand what this wastewater data means. So I think that there needs to be, and that's kind of the torch that I'm going to try to carry, having those relationships between utilities and local public health folks. To really give an understanding of, you know, how wastewater collision systems work, how wastewater treatment works, what watersheds are, and how they overlap with the neighborhoods that they're more concerned with, right? And like you said, I mean, how do you actually interpret the data? What trends should you look at? Should you look at the actual concentrations? Should you look at normalize? You know, there's a lot there. Yeah. And I'm not an epidemiologist. You know, I'm a compliance guy by background. This is a world that's completely new to me. So I need those health department epidemiology trained folks to help me understand, you know, to how I can use the data in my everyday life.

Anna: Right? Yeah. I mean, do you ever hear so, you know, I live outside Boston and we're all a little obsessed with our local wastewater data.

Scott: That's awesome.

Anna: Yeah, it is awesome. So the public is very, um, well, you know, as you Probably not all of the public, but a lot of us are really interested in what the wastewater data look like for Boston.

So we will go check it out on a daily basis. Do you get the sense if any members of the public in Cincinnati are looking at the wastewater data?

Scott: So I'm a lurker on social media. Let's put it that way. Uh, so I, you know, I go on the Cincinnati Reddit page and I'm, I'm reading about that. I'm into sports. I read the stuff about the Reds and the Bengals that's on there. I'll tell you, I have never seen anyone post anything there related to COVID and wastewater at all, or Twitter places like that. Um, that, you know, I lurk on. I just, I haven't seen it. There's been some, some local, some local and state kind of level news stories that have come out on it. And, you know, you might get one person posting it, but nobody, nobody comments on it.

Anna: Okay. Interesting. Well, there's still time.

Scott: Yeah. And that's like, you know, I would hope that the pub, that the local public health department have the means to communicate that, but I just don't know if they've figured that out yet, you know?

Anna: Yeah, it's tricky to convey the data meaningfully. Here's another question. I know a lot of people have is how is your program funded?

Scott: So right now we don't receive any support from anywhere. We do this, you know, kind of as I guess you would think of it as a service to our ratepayers.

Anna: Right.

Scott: So it's, it's a very small labor cost for us to do this. It fits into existing sampling schemes that we already have. So the, the barrier to us doing this sampling at treatment plants is very, very low. You know, it's basically pouring another sample off of our composite and putting it into a, you know, a cooler and shipping it off to the lab in central Ohio.

Anna: So there is certainly some time involved in that. But what you're saying is you're kind of able to absorb it into your overall staffing responsibilities. Okay.

Scott: And I think we have the capacity to, to do more. Of this kind of stuff in the future now that, um, things are cooling down, it seems at least here locally, uh, our wastewater signals aren't showing the jumps like a lot of other places are in the country.

Anna: Well, I'm really truly glad to hear that about Cincinnati. Okay. If there was one thing you wish you had known about this whole wastewater surveillance program when you started in 2021, what would that one thing be?

Scott: So I think I didn't figure out that there was this huge chasm disconnect between local public health folks in the utilities. At that point, I thought that they were already talking to one another and, um, you know, had this kind of figured out, but it does not seem like that is the case here locally. Like I said, I'm trying to fix that right now. There are places in the country where they figured that out. Up in Michigan, some of the work that they've done up there is a model for how you can bring state and local health departments and academics and utilities together. They have a weekly call where they talk through the different areas where they sample across their collection system. It's a great model. I'm trying to learn from, from those folks.

Anna: Yeah, I mean, it's tricky, right? Because health departments have been really, really busy. So, as you point out, now that maybe things are slowing down with respect to COVID, that will give you that window of opportunity to strengthen those relationships with your local health departments, which is very valuable.

Scott: I agree.

Anna: If people want to learn more about what MSD is doing, what you are doing, what's the best way for them to get more information? Who should they reach out to?

Scott: Sure. So you could, I mean, you could provide them my contact information and you can reach out to me and in regards to any of our strategic research stuff that we're doing, you know, we have outside of the wastewater surveillance world. I'm very interested in emerging contaminants. I'm interested in disinfection technologies, energy saving mechanisms, things like that. So, you know, if you have got something going on in those, in those worlds, uh, and you know, you might need a medium sized utility from, you know, Southwest Ohio to help out, I could be your guy.

Anna: Okay. Awesome.

Scott: And then we have some, we have social media channels. We have a Facebook page, Instagram, and a Twitter account.

Anna: Yeah, you're on Twitter and I can provide all those links in the notes for this episode. So I'll go ahead and do that.

Scott: We could use the followers. We like followers. So you heard that Scott wants followers. So I don't run the social media accounts, but, I do know the woman that does and she would appreciate it.

Anna: Okay. All right. Well, we'll see if we can help you out there.

Scott: Awesome.

Anna: I have just one more question for you because I can't talk to someone from Cincinnati without talking about chili, which as you know, is your most famous food. Although I've heard that many consider Cincinnati chili to not actually be chili, but that's probably a whole other conversation for a different day. But do you prefer Skyline Chili or Gold Star?

Scott: This is a debated topic around here. Uh, if you had asked me when I was in high school, what my favorite was, I squarely aligned with Gold Star. I stayed that way probably through mid college. Uh, and then I switched over to the Skyline camp and I think I've been there ever since. So they're both, the problem is, Anna, is they're both awesome. I would say I'm in the Skyline camp. But I want to give a plug for like a couple of other really great mom and pop ones that are out there. Camp Washington Chile is one, which is about two miles north of where our largest facility is in the town of Camp Washington. And then I'm a resident of Pleasant Ridge. There's a Pleasant Ridge Chile, which is incredible. It's a great little diner spot. Then across the river in Northern Kentucky, Dixie Chili in Newport, Kentucky, uh, is probably in my opinion top shelf. That's, that's my favorite one at the moment.

Anna: Okay, that's good to know that there are chili options, you don't have to just go with one.

Scott: There's like 60 or 70 mom and pop offerings.

Anna: Oh my goodness.

Scott: Yeah, it's a really neat regional cuisine, you know, and like you said about the. The stuff about it being chilly or not, I would actually agree that it's probably not, it's more of a, more of a hot dog sauce, like they would call it up in Michigan.

Anna: Oh, awesome, Scott. Well, there you have it: wastewater surveillance and chili in Cincy. You'll be able to find links to MSD's website, the mom and pop shops, the Ohio state wastewater dashboard, CDC's COVID data tracker, all the social media pages for MSD in the notes to this episode. So I just want to say thank you so much, Scott, for taking the time to talk with me today. Um, I really appreciate it.

Scott: I really enjoyed myself. Thanks, Anna.

Anna: Thank you so much. Bye.

Links to organizations, dashboards, and restaurants mentioned in the episode:

- [MSD of Greater Cincinnati](#) accounts on [Facebook](#), [Instagram](#), [Twitter](#), and [YouTube](#)
- Dashboard for the [Ohio Coronavirus Wastewater Monitoring Network](#)
- Wastewater data on [CDC COVID Data Tracker](#)
- [Camp Washington Chili](#)
- [Dixie Chili](#)
- [Pleasant Ridge Chili](#)