Mold Remediation Part 11:
Post-Remediation Verification

MP
Michael Pinto
0:00
If you give them the criteria ahead of time and they understand…if they fail, not only should they do the recleaning for free, but the cost of the retesting should be taken out of their payment.
KS
Kendra Seymour
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Thank you to our sponsor, Airmada Drying Solutions, their generosity helps keep our resources free and available to the public. For more information on our sponsor, please head on over to our Corporate Partners page at ChangeTheAirFoundation.org. As a reminder, this mini class series is designed to provide a consumer-friendly overview of the mold remediation process. It is not a do-it-yourself series, nor does it cover every detail or scenario that needs to be considered during mold remediation. Before beginning mold remediation, be sure to work with a knowledgeable Indoor Environmental Professional and remediation company.

Hello, everyone. My name is Kendra Seymour, and I want to thank you for joining us through our mold remediation 101 series. For our last episode, we're diving into the last piece of the process, known as post-remediation verification. Sometimes called clearance testing, or even more informally, post-testing. Now, this is where you ideally bring in that third party, like an Indoor Environmental Professional, to confirm that the remediation project was successful. It's an extra cost. I know that is hard to think about when you've already spent what is likely a great deal of money. But I promise you don't want to skip this step, because we're talking microscopic particles here, and just because it looks gone, doesn't mean it is. Now, even good remediation companies sometimes fail post-remediation verification. Now, there's a lot to unpack here today and to help us tackle that, Michael Pinto is back one last time. Now, we are fortunate to have Michael as an advisor, so you can see his full bio on our website, ChangeTheAirFoundation.org. But he's been in the industry for multiple decades, providing professional safety and industrial hygiene services related to all sorts of indoor environmental issues. And the best part about Michael as I've gotten to know him over the last year, is that he is someone who genuinely cares about you the consumer, and your health and your safety. So, thank you so much Michael for coming back again.

KS
Kendra Seymour
2:13
Well, that's very kind of you to say, and I do believe that is accurate, that I do care about people. And we give a lot to the industry, and CTAF is definitely part of that. And I would encourage other people to share this information on all their social networks, and with their colleagues, and friends, and stuff. But, with that, I think we've got a lot of information to cover today regarding what happens after you're done with a potential mold project. So, let's get right after it, if that's okay.

All right, as you're seeing here, we're actually made it to Part 11. This is so exciting. Hopefully you watched the other ones, but even if you haven't, this is how I start all of my sessions. And that is to remind people of the bigger picture of the remediation process when you're dealing with a water damage building. And again, in some of the earlier presentations, I went around the top of that, if you will. But, I want to focus today on the bottom part, where you see the brown box that says "Environmental", because many of those different parts and pieces down there will require some form of post-remediation testing. And that includes all the way over on the far right hand side, where it says "Building Performance." A lot of people don't think about that, but if you're rebuilding after some substantial mold remediation, you want to make sure that the building is tight and that it's dry. There can be lots of different sorts of things they can do there, maybe even a whole house blower test, to make sure that everything is working properly. But, one of the interesting things is that when you get into those different parts of the remediation, there's slightly different questions sometimes that get answered by the post-remediation process. One of the main ones, for example (and you see there), as far as source removal goes, is, is it safe to take down the containment barriers? That's why there sometimes is multiple segments of post-remediation activities as we go through a house, as it progresses through the remediation activities.

Later on, as contents are being cleaned, you know, are they safe to be used, or worn, or can we bring them back into the house without a lot of risk? The second arrow (there) above the heating, ventilation, and air conditioning system, which is what HVC stands for. Is it actually safe to turn the system back on? Has the ductwork been cleaned? Have the coils been clean? And you can see the picture of it there, one of the most. One of the most difficult ones, quite honestly, for people to deal with is, how do you measure the success of a whole house cleaning? Particularly if you're just dealing with residue or mycotoxins. And we'll talk a little bit about that as we move along. Now, there's two different terms that you're going to hear officially, and these come from one of the indoor air quality standards, the Mold Standard that the IICRC put out. That many people hear the term the S520. They talk in there about two different types of post-work testing. One is evaluation and one is verification.

So, what I want to take this slide and just point out that there's a lot of similarities between the two terms, evaluation and verification. Regardless of who's doing testing, it should involve a visual assessment and a standard that we call "white glove clean." There just shouldn't be any visible dust around after that. Typically, there is going to be some type of

sampling. There's just an array of different sampling methods these days, and it seems to be growing every day. Now, you can do mycotoxin sampling, and you can do ERMI, and HERTSMI style sampling, etc., etc. The key to any sampling, though, is to have a agreed upon endpoint before you take the sample. You never want somebody to come in and take samples and you say, "Well, why are you taking a sample? Or how are you going to determine if the sample passes or not?" And if you ever hear the term, "Well, we'll know when we look at the results…" That's just bad. They need to understand what that end point is, and how that sample is going to help them reach that endpoint, before they take a sample. Otherwise, they should never be taking a sample. The differences in this particular case between evaluation and verification, is essentially who takes the samples? If the contractor takes the sample, which many people think that, "Oh, that's reboot That's bad" The answer is not necessarily and not in every case. That's considered to be a post-remediation evaluation. If it's an independent third party that comes in, or consultant, or an industrial hygienist, or somebody like that, and they take the samples, that's considered to be post-remediation verification.

So, that brings us to the question that I hear all the time, can a contractor take their own samples? And the answer is, "Generally, yes." Now, there are certain states that prohibit that, but even the states that prohibit that, prohibit that for the contractor to use that to give to the consultant. We know a number of contractors in Texas and Florida that take their own samples strictly for their own internal purposes. Basically, what they're saying is that, "I want to know before a third party comes in whether I'm going to pass this or not. I don't want to guess and have to, you know, wait on pins and needles or something like that." Now, some contractors don't like to do that, because they don't think they have the right insurance coverage to do that, and some of them are prevented from doing that by the client, and that's because the client is already working with an IEP. They don't necessarily want to pay for two sets of samples. My feeling has always been, if the contractor has given you a set price for the work, and they want to take some evaluation samples before the IEP comes in, I'm thrilled with that. I think that gives them, or gives me an indication that they actually understand what they're doing, and want to make sure that it gets done right. But there's all sorts of different sampling methods. (Here), you can see the guy with a vacuum in the upper right photo there. That would be more of an ERMI style test that should be done on the carpeted surfaces and things.

So the…again, these kind of logically lead into different questions. If I have a project, I need both an evaluation and a verification. And the answer is not necessarily. You can certainly substitute the verification for the evaluation. In other words, have a third-party do the testing, as compared to having the contractor do the testing. That…it gets a little trickier going in the other direction, do you only have the contractor sample instead of a third-party sample? And, again, I would say in certain conditions, that can be okay, but that one just takes a little bit more thought and consultation as to whether you do that. So, other things that you want to keep in mind as you do these things, is that the sampling should be something…if there is going to be sampling involved, and I know certain IEPs that will just do things on a visual inspection and a particle counter at the end. Particularly for whole house cleaning, particle counter can be a very effective tool in telling you whether that whole house cleaning has been done properly. When you get into clearing containments for

post-remediation, source removal, I'm still a fan of a test that will tell you, you know, how much mold is there, rather than just how many dust particles are there. Regardless, some things to think about if you've had samples collected previously, like baseline samples, you should potentially think about having very similar samples collected for post-remediation, so you can compare the baseline or the pre-works samples to the post-work samples. I would even go so far as to argue, you should use the same laboratory. Because if you've got baseline samples from one laboratory, and then you do post-remediation samples, even if they're the same type…"We did spore trap before, now we're doing sport trap at the end. We did ErmI samples before, now we're doing ErmI sample at the end." Sending an ERMI sample to two different labs, you can get very different results—even using the same technique and stuff. So, I like to eliminate some of those variables, and have the people send it to the same laboratory, pre and post—that they possibly did. And then, more importantly, the comparison criteria, as I said before, should be understood by everybody. I think it should be written and shared. And then, you know, then we don't have any questions later on.

MP

Michael Pinto

11:48

So, as we keep moving through here. Some of the post-remediation considerations, particularly for sensitized individuals, each of those remediation activities, we started the session here on that. Each one, they have their own style and type of remediation, evaluation or verification. What I would say, and I think that (second green bullet point) is one of the most important of the whole session here, Kendra. Is that the honesty and the competence of the person who's taking the sample in the laboratory trumps just about anything else. If you've got a good contractor, they've been honest and fair with you, they want to take some of the samples and stuff. Typically, you don't get honest people that turn dishonest at the very end of the process. Either people are honest or they're not. I do know, however, there are some dishonest contractors that will want to push to have the evaluation done and not have a third-party, because they're experts at being dishonest—they're experts at hiding bad work. And that's the purpose of any of this, is to just make sure that the work was done properly.

The other thing (and that's the last big bullet point at the end in green), is that whatever testing you're doing as sensitized individual, you want to make sure that you're coordinating some of that with your medical provider. Because, for example, as an IEP I still may like sport trap samples (like you're seeing in the picture there), and the your medical provider may want an ERMI. Your medical provider may want a mycotoxin sample. I don't know, but whatever they want, I want to accommodate both as the IEP and as the client. So just make sure that before you get too far along in the process, you're talking about these endpoints with your medical provider, so they know how to treat your body based on what's going on in your environment. Now, I will say that spore trap sampling still is quite common. There's people in the industry that poo-poo this, and quite honestly, they've been poo-pooing it for 25 years, and it's still around. There's some good information we can get from spore trap samples. The problem, however, is that people don't understand the basics of even taking a spore trap sample—and particularly for post-remediation evaluation or verification.

One of the things that that we run into all the time is how many samples should be collected. And pre-work is different than post-work. Post-work, even for a small containment or, you know, removal of spores, contaminated material…in a containment that's the size of a small closet, we still recommend that you take two samples in that small containment. And the reason for that is that there's just way too much variability with a single sample. And so, statistically, you get better results just by taking two samples. Once we get into bigger areas, like whole house cleaning, then the question really becomes, "Well, how many samples do we take there?" Our rule of thumb, and that's all it is, it seems to work for us, but it's based on nothing more than anecdotal data over 20 plus years of doing this in the industry. Is that we'll usually set up a spore trap sample for every 500 square feet. So, if you've got a 2000 square foot house and, you know, basement that's another 1500 square feet, or something like that. You may actually have six or seven samples that you're collecting as post-remediation spread around in different areas, to give us a good understanding of what's happening with that air in those different areas.

As I've emphasized before…and this is available through Change the Air Foundation that you've got this…the ability to tell people that this is the criteria we're going to use to analyze the sample results is very powerful. And again, this one has been around…this isn't just made up out of whole cloth—this is coming from a peer-reviewed journal research article that was put together to come up with some of this. So, there's a history behind it, and it seems to work. And it helps sensitized individuals have a house that they can live in afterwards that is reasonable and safe. This may not be the only thing, you may do this on the containment area before you take down the walls, because it's an air sample and helps to make sure that you're not spreading things around. It's very tough, in my opinion, to take an ERMI sample, for example (which is a surface sample), and use that to, you know, as your final determination before you're taking down containment barriers inside a work zone where source material has been removed. I'm just, I'm still a big advocate of air samples, because that's what we're concerned about. What's going to happen to the air from one part of the of the work zone to the rest of the unimpacted house?

KS

Kendra Seymour

17:32

Can I jump in before you go on? So, inside that containment, ideally, they've done like a small particle cleaning, and it's past this white glove test (meaning, you know, you can take a white glove, rub it, and there's no dust.) You really can't do an ERMI if I gutted my bathroom and they small particle cleaned. If I'm collecting dust on an ERMI, that means, isn't that an automatic fail? They don't even pass the white glove test.

MP

Michael Pinto

17:57

Yes, but it should also work in the other direction. If you're trying to take…if you're using an ERMI for a post-remediation inside a work zone—and you use the wipe test or the vacuum test, but if you do the wipe test or the vacuum test, and you basically wipe every surface in there for your ErmI, and you submit it to the laboratory, the laboratory says, "Well, there's not enough dust on here to do an ERMI." I mean, they have to have a certain

amount of residue that they can, you know, run the testing on. To me, that's a win. They can't even analyze the sample. That means that it was so clean in there that, you know, that, like I said, that there isn't even anything that they can point to at the end. So yes, with ERMI samples, as I said, I'm not a big fan of them for post-remediation, source removal, inside a containment. They take a longer time to get back. There's, you know, there's a question even, how are they going to do the analysis if there isn't enough dust? And if they can't do the analysis, many of the laboratories will say, "Well, that's a failed ERMI, because we don't have enough dust." And I'm looking at it from the perspective of saying, "No, that's not a failure. That's a win." So, good question all the way around on that. It's another reason, like I said, Now, I don't mind ERMI's for post-remediation testing, for whole house cleaning and some of the other areas. I just, to me inside a containment, when you're trying to answer that question, "Can we safely take the barriers down?" I don't think it's a good method to answer that question.

KS

Kendra Seymour

19:40

Yeah, I would agree with you. So, if, sorry, I don't usually interrupt you during this, but if your contractor comes in (I know a number of IEPs who will fail a containment just on visual inspection alone), like, they see dust and debris and corners. Does the testing stop there? Do they say, "You know what? I'm not even going to proceed, because I can visually see that there is still, you know, dust and debris laying around." And they want the company to come back and reclean, or would they proceed then?

MP

Michael Pinto

20:11

They should not. They should not take a sample. If you don't pass the visual inspection, don't take the sample. And you shouldn't encourage your IEP to take samples of it, because all these "Here, I'm going to get a charge for him to be here and everything…can't you take, just, can't you just take the sample anyway?" Because typically what happens in a situation like that, or what can happen in situation like that, is you get conflicting data points. I failed on the visual, but somehow the air sample passed. So, does the containment pass or does the containment fail? And, you know, we never…to us it's always sequential. You have to pass a visual inspection before we move to the sampling portion of that. And I think that just is a problematic area. And you'll get contractors that will push the consultant or the homeowner to move forward with the testing, even if they fail a visual inspection. "Well, we're going to come back. We're going to sample the… or we're going to reclean, but can't you just take samples now?"

The difficulty with that is that if they come back—even if they come back and reclean —and they've got air samples that show that they passed already, what's the motivation for them to do a good job cleaning, instead of coming back and doing a show-and-tell clean? "Oh, we got our guys here. Oh, we were in there for an hour. You know, we wiped everything down. It's all visually clean again." Blah, blah, blah. There's no threat, so to speak, in terms of, or rationale for why they have to do it, right? So, lots of interesting things, but always, in my opinion…and I think everybody else that's in the industry that really cares about the customer is that it's got to be sequential. If you can't pass a visual inspection, then we're

not going any further. And I know several of my colleagues, and I give them credit for this. You can't pass a visual inspection, that's the first step. Then if you can't pass the particle count test, that's the second one (because that's on-site, right away). And only after they pass a visual and a particle count do they do any sort of additional sampling, whether it be ERMI, or spore trap, or air answers, or mycotoxin, or anything— whatever they're looking for. So, the criteria that I was talking about previously there, as I said, it wasn't made up out of whole cloth. You can actually see the peer-reviewed research that went into it. Which I think is pretty cool, but that's okay, I'm the author of it, and I tend to be a geek who thinks a lot of this weird stuff is pretty cool. So, I would just leave it at that.

The more important question here is one that I get sometimes. But if we, you know, because we'll sometimes show that criteria to the contractors who aren't familiar with our work process or something, and they'll look at that and say, "Boy, that's pretty tough. Or you don't even allow a single spore of Stachybotrys or Fusarium to be left in the work area? That's not even reasonable." And the answer is, "Yeah, we're talking about a criteria for sensitized individuals. It should be tough" And, for each step of the way here, we want it to be…not just to return to a normal fungal ecology…because that's what some of the contractors will argue with me, "But, if you're saying that there's supposed to be zero Stachybotrys, that's not normal. There's always some in the outside air. There's typically some in the outside air." Blah, blah, tough, all right. These are sensitized individuals. We're doing detailed cleaning. We've got this whole protocol in place, and either you can do it, and you can reach a very tough criteria, or you can't.

And what's fascinating is, probably just like your mom taught you, you know, when you had to go back and rewash the dishes the second time because she said they weren't clean enough. Guess what? You learned how to wash them right the first time. And when the companies who are new to this fail one of these criteria's and then figure out, "Oh, we better do that if we're going to pass this." Then what happens is they do a better job cleaning. And that's just the long and the short of it. I will say, for clients who…or for contractors who aren't used to seeing that criteria that CTAF and Wonder Makers is kind of promoting here for spore traps—the failure rate the first time they run into it can be pretty substantial. I mean, most contractors take one, or two, or three projects using that criteria to learn how to do the cleaning, Again, the bad analogy, mom had to throw it back two or three times, so you learn how to really scrub all of that crusted on material off of the pan before, you know, before we all had dishwashers that supposedly take all that stuff off. But anyway, a good contractor will learn how to meet the criteria, and that's a good thing.

So, some of the different endpoints for different parts of decontamination. Steps…visual inspection, light bulb tests, surface sampling (and that's either a micro vacuum or a tape of it). And that will help us with the determining whether the surfaces are clean or the contents are clean. There's criteria for that as well. You don't ever want to take the tape test or microvac without having some criteria in place. We offer this, and again, Clean the Air Foundation has access to all of these different criterias that they can share with their members and other individuals. But for a tape or a micro vac on contents, we're saying there's gotta be less than 1% of spores, or, I'm sorry, that spores make up less than 1% of the recovery material. So, yes, when you're doing a tape test or a microvac—particularly

microvac (like you see on the cushions there), there's going to be dust that you're going to get because it's inside. The question is, is it spores or not? And, so we want the spores be less than 1% of all the recovery dust. And more importantly, there shouldn't be any target spores. That's Stachybotrys, Fusarium, Chaetomium, Trichoderma, things like that. So, just keeping it on track and realizing that this is, again, a tough criteria. But, it's one that is designed to help the sensitized individual move back into their house and not have residual health effects from it. When you're talking about endpoints for the HVAC cleaning, obviously a good visual inspection makes sense.

Those are amazing before and after photos of the same ductwork there. We'll also run spore trap samples. It's pretty straightforward. Run spore trap samples right at the supply duct, so that the air that's getting into the spore trap is essentially coming from the HVAC system, rather than being stirred up in the room around you. And then, you can use actually, the same criteria that we were using before, whether it's HVAC or ambient air. The difference, of course, is that you're trying to measure the impact of the cleanliness of the HVAC system, so you want that sample right at the diffuser—the supply diffuser. I would point out, however, if your air is coming in this direction, you don't want your sample facing into it. You actually want your sample perpendicular, at a 90-degree angle. The suction on the sample is enough to grab any of the part particulate that's applying past it in the air, even at the face of the HVAC unit. But, regardless, you can still get the same criteria. The whole house cleaning is going to be a little bit more fun. You certainly want to do a visual inspection. We like to have particle counters there, because you can actually see the count go down as they do the cleaning from one room and move to the next room…move to the next room. Spore traps, I think also are very good. But, because that discussion we had earlier about always wanting to integrate what's going to happen here with the cleaning with your medical provider, you're going to see a lot of medical providers that still want to see an ERMI-style sample. Although, they many times they just want to see the HERTSMI analysis, which is a subcategory of the ERMI. But, whether it's spore trap, or the qPCR, or mycotoxin testing, whatever the doctors are focused on, then that's what you want to follow as you move along.

MP

Michael Pinto

29:45

As far as the sampling criteria goes, you do have to be aware that if you're using ERMI or HERTSMI-2 criteria based on what your doctor is saying, or what your IEP just wants you to do. So, there's different ways you can collect those samples. There's some is the correct way, and some is the incorrect way. The incorrect way is what you see at the bottom here. Somebody, they don't have gloves on. They're just wiping multiple surfaces with the cloth that came from the laboratory. They're not keeping track of where the sample was collected, how many surfaces, what size area they wiped, or anything like that. A better way to do it is what's shown in the top photo there, where you actually use a template. Use one square foot. You wipe it using the cloth that's been given to you. Because it's post-remediation and it should be clean throughout the house, we often will collect, and we recommend that you collect 10 square feet of surface area that gets white, and then you absolutely keep track of where you took those samples. Now, it's a little bit trickier if you're wiping on top of a door frame. For example, you might actually have to measure the width

of the door frame, because it's probably going to be like 36 inches long. But if I do, guess what? If I do 36 inches long, four inches wide, I can get to the equivalent of a square foot. So, depending on how wide your door frame is, you may have to wipe two of those to equate to one square feet. One square feet? That's horrible. It's one square foot. But, regardless. But, that's the key, is think it through, understand where you want to take your samples before you get started.

Typically, when I'll do a post-remediation for somebody like this on a whole house cleaning, I'll take my 10 templates and lay them all out and take them all down before I even start sampling. And then that way, I've got them numbered and I've taken pictures of it and that sort of stuff. Then you're using the same cloth from the laboratory. That depends on what laboratory you're using. You could use 10 different cloths and combine them, but most of them don't want you to do that. So, you use same cloth. You wipe those 10 different areas. And just as we talked about previously, if you send it into the lab and lab says, "Wait a minute, we don't have enough dust to do the analysis…" You win. That just means that it's clean, and that's a good thing. Now, as we get toward the end of this session, I want to talk about something that's really important here, and that is, what happens if you fail one of these? And it doesn't matter where in the process it is. Is it a failure of the containment area before you want to take the walls down? Is it failure of the HVAC sample? Is a failure of the whole house cleaning, whatever it is, the answer is going to be pretty much the same. You got to go back and review your steps in terms of what was the contractor doing? How did they do that?

One of the things that we find quite often that that results in failures is just problems with the equipment. Either the air scrubber or the HEPA vacuum hasn't been checked. The seals aren't correct. HEPA vacuums are notorious for bypassing the seals. People take them out. They take the bags out. They put new bags in. Which is all great. You want to make sure that you know you're doing that. But if they don't wipe both the rubber seal on the inside and the lid of the canister—and they're not putting it back in straight, and even—and everything, and they just snap the clips on it, you'll have air that's coming out around the side of the vacuum, rather than going out to the filters. That will definitely screw up a post-remediation. We've had situations where IEPs have brought in contaminated sampling equipment and ruin the work of the contractor.

We've had IEPs go in to take samples and not put a suit on. And, you know, I understand their thinking from a standpoint, "Well, this is clean. I know the contractor. There's really very little risk here to them." And the answer is, the suit isn't protecting them at that point, the suit is protecting the client, because depending on where they've been, or what's on their clothes, or whatever—they can bring contamination into the work zone and cause a failure, because we're using that really tight criteria. I actually had a case one time where the guy came to the work site on a motorcycle in the spring and took all his equipment out of his saddlebags, and everything went in the house, and they failed. And both the client was on the phone with me, as well as the IEP…and I had…this colleague of mine happened to know him (I knew he's a big motorcycle guy), and I just asked him, "Did you ride your motorcycle to the job?" He said, "Yes." I said, "Did you put a suit on before you went in?" … "No." … "You know, you're just a big filter as you ride through the environment on the

motorcycle in the springtime." And it was predominated…the samples inside were predominated by outdoor spores rather than indoor spores, so they still fail.

KS

Kendra Seymour

35:09

This is also why…and you, as a homeowner or renter, should not enter the containment. Hopefully there is a sign that's outside there that's restricting it, because I know sometimes they get curious. Everyone goes home for the night, and they poke their head in, and you can cross-contaminate. So, stay out of the area until post-remediation verification has confirmed that it's gone. I know you're curious, you're nervous. Stay out of the area for those reasons. Well, many reasons. That's one of them.

MP

Michael Pinto

35:40

Well, you know, it's actually even better than that. Is that, most of the time we'll have our contractors put a piece of plexiglass in the containment wall. Because it's really hard to look through the, you know, the sheet plastic is all kind of half-opaque and everything. But, just take us, you know, a foot square or two-foot square piece of plexiglass, and tape it in. And, and you know what? They shouldn't be afraid of people seeing what they're doing in there. And, and the homeowners are curious, and they're paying a lot of money for this stuff, why not let them see what's going on in there? And then that way it prevents what you're saying too. It prevents the homeowner from just having to peek in and take a look around, because, like I said, they're paying 1000s of dollars, many times for this. And I'd want to see too, if that's what was going on. I'm right there. Somebody's repairing my water heater. I'm like, over their shoulder.

KS

Kendra Seymour

36:35

Yeah, this is even for, like, the plumber, like I was talking with someone who'd reached out to Change the Air Foundation, and they had their contractor doing work in there after repairing stuff. And then I was like, "No, no, no. Like, you can't have them entering in there!" And, actually, in her remediation contract, it specifically says that the company does not guarantee that it will pass post-remediation verification if people are entering—unauthorized personnel are entering that that area. So, even other trades, people, you need to keep out of there.

MP

Michael Pinto

37:09

Right and, and, yes, I know we want to get the leak fixed, or we want to get, you know…a lot of times it's not even fixing anything. Well, you know, if we go and we can get our measurements, and then we can pre order the "X", you know, whether it's a cabinet or whatever. They're like, "No, you're just gonna screw stuff up." So, yeah, there's a responsibility for the sensitized individual, as much as there's for the contractor and the IEP. Anyway, if you fail, what happens is you check all these different things, and then, of course, there's got to be some reclaiming and some retesting. What you don't want to do is change the criteria. "Well, we failed, and then we come back and we do some recleaning,

and we take another test, and we fail again. And so clearly, if we fail twice, it's not us as a contractor, it's you and your stupid criteria." And literally, those are the sorts of conversations that that get held. And it's like, "No, where…this is what you agreed to ahead of time. This is why you want to share everything up front. And this is what you agreed to ahead of time, and if you can't do it, we'll find somebody who can get it clean, but we're going to subtract that from your bill." And that's how you have to do it. Sometimes you just have to be a little tougher than what your normal instincts would ask of you.

KS

Kendra Seymour

38:31

Well, and I'm sorry to jump in. I'm very talkative for this episode. But, I know, personally, many years ago, we had an instance where we had a bathroom remediated, and they didn't want to remove the tub. I get it. And the first round of post-testing failed, and it indicated, you know, that there was a missed area. That missed area ended up being substantial and underneath the tub. And so, it's also an indication that maybe you didn't get it all. And we had to open up more walls and remove more sections. And so, had we not done that, we would have missed that piece of the puzzle. So.

MP

Michael Pinto

39:06

Yeah, and then, you know, the air is going to move through there. There's different pressures in the house. You think, "Well, it's just under the tub." But, that's not going to stay just under the tub. That's going to impact your whole living environment. When you're a sensitized individual, absolutely, that little bit can be, you know, continuing your medical journey much longer than what you want it to be. You have to be fastidious about getting all of these sources and getting all of this residue clean—pure and simple. And that's what the post-remediation is all about. Is checking to make sure that the people were fastidious about getting this stuff out. So anyway, that's me. You've seen me in a couple of them here, and now you've seen me in the post-remediation. There's lots more we could talk about. Maybe next time, we shouldn't do mini training. We should do maxi training sessions. Or something like that.

KS

Kendra Seymour

40:00

I know, you know, when we first started the series, we said these would be 10 to 15 minutes, but there's such good questions that I would rather people have this information. And I do have a couple follow ups, Michael, if that's okay? Two things I want to point out to people…because if you're listening, you're probably wondering…you can get the criteria Michael is referring to. If you go to ChangeTheAirFoundation.org, and you go to our Start Here tab under Resources, will we have a section just on post-remediation verification. You can click and download his criteria. He was kind enough to share that with us. The other thing that I want to mention for people listening, is just to reiterate the point you want to agree about this criteria. Michael said it, like, three times, prior to even beginning work…and I strongly recommend that that criteria is written somewhere in the contract. And you can head on over to, again, ChangeTheAirFoundation.org, and go to our Free Download section, and I have a whole downloadable PDF on what should be in your

contract. Because I have seen contracts from people where the remediator *only* guarantees the job will pass visual inspection. And that's all they…and I was like, "Don't hire them, like, they are literally saying the area only has to look clean." And this is, you know, an opportunity where that criteria, those zero tolerance molds that Michael talked about, you know, you're going to have that stated in there. Because really, if the area fails, the company should come back and reclean or remediate that area at no cost to you. Which is important. So, check out that document on remediation contracts, because it's going to have a lot of good information for you. I do have a couple quick follow ups, though, because we sometimes see this…

MP

Michael Pinto

41:47

But, before, before you, I need to follow up on your comment.

KS

Kendra Seymour

41:51

Yeah, Absolutely.

MP

Michael Pinto

41:52

We go so far. We tell the people that not only should the contract…if they fail… If you give them the criteria ahead of time and they understand…if they fail, not only should they do the recleaning for free, but the cost of the retesting should be taken out of their payment. Because they…if they're doing it right (and we know lots of contractors that pass these things on the first criteria), and that's another reason why some of the contractors will do their own PRE. They'll do their evaluation. They want to make sure that it's clean. Then they bring in the, you know, then they allow the client to bring in their Indoor Environmental Professional to take the independent verification samples. So, it all ties together. You can see how all this works. And the better contractors understand how this works, and that's who you want to hook up with, is these better contractors who aren't afraid to face a criteria like…

KS

Kendra Seymour

42:53

Yeah, and this is why, guys, it's so important to do the work up front and thoroughly vet who you hire for…to remediate. And to find a good IEP to work with, because you are going to save yourself the headache. Not that good remediation companies don't have PRV that fails, like we said before, but really taking the time up front to get your ducks in a row. I know it's stressful, and you want it out of your house, and you're sick, but take the time. One of the things I want to ask you, though, is, what happens, you know, we talked about PRV you know, maybe you're remediating a bathroom, or kitchen, or an area where there's a leaky window. What about attics and crawl spaces? Does the criteria change for those areas that aren't, you know, your indoor living spaces—but still are part of your home, and can still impact your air quality?

MP

Michael Pinto

43:41

That's a tremendous question. And again, like I said, that's why we want to have maxi training next time. I just didn't get into it because there wasn't a lot of time. But yes, essentially, unoccupied spaces in buildings have a different criteria. Your…you generally don't have people living in an attic or living in a crawl space. But basements, you know, many times are considered to be livable space, so that's a little bit different. But attics and crawl spaces, there's going to be a different criteria for that. I'm pretty sure. We shared that with Change The Air Foundation. If you don't have that already, when you check the resource there, Kendra, just let me know, and we'll shoot that to you. But it is, what would I say, less strict than the occupied area, because you're not living in there, and we understand that air transfers from an attic or crawl space into the living zone, and we're, we're absolutely concerned about that. But, it is just a little unreasonable to ask a dirt floor crawl space to meet the same cleaning criteria that we have for, you know, an enclosed drywall painted surface area in an occupied part of the house.

KS

Kendra Seymour

45:01

Great. Well, we'll make sure people have access to both of those. And then I have one other follow up question. Now, microbial growth (mold growth) releases enzymes that can cause staining, and so you can have remediation. And sometimes staining is left behind, and that's stressful to see as a homeowner. I've heard some remediators say we've removed all the mycelium below and staining is left over, it's a normal part. Should there be any staining left behind when we're talking about remediation? Or just, yeah.

MP

Michael Pinto

45:35

There certainly can be. And we generally recommend that you do your post-remediation evaluation or verification before you do any stain removal. So, they're going to come in, particularly if it's in the basement, right? I don't want a lot of bleach solution, or any of the hydrogen peroxide, or anything like that sprayed around until I make sure that they've got it clean. So, I don't want them substituting a chemical removal for a physical removal, essentially, is what I'm saying. So, the way the process would work in a situation like that, they go in, they clean the rafters and everything—it does look discolored. But we come in, we do our air samples. Many times, we'll do some tape samples, just to make sure, like you said, they're saying we've got all the mycelium out of here. Do a tape sample that will tell you whether that's the case or not. And if they pass those air and tape samples, then great. Then after that, before they take the barriers down, let them use, you know, whatever stain removal solution that they think works best, and get rid of the stains. But, be careful when they do that, because almost anything that they're using as a stain remover is corrosive, either on the alkaline or on the acidic side. So, don't get it on a lot of pipes or wires or things like that.

KS

Kendra Seymour

47:00

Yeah. This is…this part of the process is so important you want to test, to confirm, you know, and ensure that your investments, and your health, and your home is protected. Michael, thank you so much for being here.

MP

Michael Pinto

47:14

It's always a pleasure. Kendra, you have a blessed afternoon

KS

Kendra Seymour

47:17

For everyone listening. If you found this helpful. Do us a favor head on over to ChangeTheAirFoundtion.org, and sign up for our newsletter. Couple reasons. One, it's the best way to get great information like this directly to your inbox. But also, as a thank you for listening, we are sending out to those on our newsletter, our Mold Remediation at a Glance document. And it is a great resource, lots of visuals that takes you through from Part 1 to Part 11. All of these details, so that you don't have to, you know, take notes and, you know, keep relistening. We've tried to make this as easy as possible for you, and it's free, as are all of our resources. But head on over to ChangeTheAirFoundation.org. Sign up for that newsletter. Thank you so much, and we'll see you next time.