

Why radon retest verification matters for West St. Louis County homeowners

Understanding radon retest verification

If you have had a radon test done in your home and the result came back above 4 picocuries per liter - the EPA action level - you likely know that the next step is radon mitigation. But after a mitigation system is installed, the work does not end there. The final check, often called radon retest verification, is what tells you whether the mitigation actually worked. It is a step that too many homeowners skip or rush, and that can leave a family exposed to elevated radon levels without knowing it.

I have worked with hundreds of homeowners across Chesterfield, Ballwin, Wildwood, and Town and Country, and I have seen the same pattern repeat. A mitigation contractor installs a sub-slab depressurization system or a crawlspace ventilation setup, the homeowner assumes everything is fine, and a few months later a random test shows levels that are still high. That is exactly the scenario that a proper radon retest verification is designed to prevent.

What radon retest verification actually involves

[Radon retest verification](#) is not the same as the initial test you did before mitigation. That first test is usually a short-term test - often a charcoal canister or an electret ion chamber placed in the lowest livable area for 48 to 90 hours. It gives you a snapshot, but it can be influenced by weather, recent ventilation, and even barometric pressure changes. After mitigation, the verification test needs to be a bit more deliberate.

The standard approach for radon retest verification is to run at least one short-term test after the mitigation system has been operating for at least 24 hours. Many professionals, including Air Sense Environmental, recommend waiting a full week after the system is turned on before testing. This allows the soil gas pressure under the slab to stabilise, and it gives the radon fan system time to establish consistent suction. Testing too early can produce a false negative - a low reading that makes you think the system is working when it might not be.

There are two main types of devices used for radon retest verification: passive radon detectors and active radon monitors. Passive detectors include charcoal canisters and electret ion chambers. They are inexpensive and easy to mail in for analysis, but they only give you an average for the time they are exposed. Active radon monitors, on the other hand, can give you hourly readings and sometimes even continuous data. A continuous radon monitor is especially useful during the verification period because it can show whether the system is keeping levels low through changes in weather and household activity.

Common mistakes during retest verification

One of the most common mistakes I see in West St. Louis County is homeowners testing in the wrong location. The radon test result from before mitigation was probably taken in the lowest livable area - usually a basement or a room with a concrete slab. After mitigation, the verification test should be placed in the same spot, or at least in the same general area. If the mitigation was done in the crawlspace, the test should still be in the livable space above it, not inside the crawlspace itself.

Another mistake is testing during extreme conditions. A short-term test taken during a heavy rainstorm or when the ground is saturated can read artificially high because soil moisture traps radon and forces it upward. Conversely, a test taken when windows have been open for days can read artificially low. The EPA recommends that windows and doors be kept closed as much as possible during the test period, and that the HVAC system run normally. If you are using a continuous radon monitor, you can also check for unusual spikes that might indicate a temporary condition rather than a system failure.

I once worked with a family in Ballwin who had a sub-slab depressurization system installed. They ran a charcoal canister test three days later and got a result of 2.1 pCi/L - well below the EPA action level. They were thrilled. Six months later, they tested again and got 5.8 pCi/L. What happened? The radon fan system had a small leak in the exhaust pipe that was pulling air from the crawlspace instead of from under the slab, and the initial test had been done in a mild weather window that masked the problem. A proper radon retest verification that included a longer-term test or a continuous monitor would have caught the issue right away.

How long should retest verification take?

There is no single answer that fits every home. The EPA recommends that after a mitigation system is installed, you conduct a short-term test of at least 48 hours. If the result is at or below 4 pCi/L, you are considered in compliance. But many professionals, including Air Sense Environmental, suggest a longer approach. A long-term test of 90 days or more gives you a much better picture of the year-round average. Radon levels fluctuate seasonally, and a system that works in July might be less effective in January when the soil is frozen and the house is sealed tight.

If you are using a continuous radon monitor for radon retest verification, you can get useful data in as little as 24 hours, but I always recommend at least 72 hours. The extra time smooths out the daily variations caused by changes in indoor pressure, wind, and temperature. Some monitors even allow you to download the data and see a graph of the levels over time. That graph can be very revealing. If you see a spike every morning when the furnace kicks on, or a

gradual rise during a windy afternoon, those patterns tell you something about how the system is interacting with your house.

When radon retest verification shows a problem

Sometimes the verification test comes back above 4 pCi/L. That does not necessarily mean the mitigation failed. It could mean the system was not installed correctly, or that there is a secondary radon entry path that was not addressed. For example, a sub-slab depressurization system works by creating negative pressure under the slab, pulling soil gas out through a pipe and exhausting it above the roofline. But if the slab has large cracks or if there is a sump pump opening that is not sealed, radon can still enter through those gaps. In that case, the radon retest verification tells you that more work is needed - maybe sealing those cracks, or adding a secondary suction point.

I have also seen cases where the mitigation system itself is fine, but the homeowner made a change that affected the pressure balance. Someone in Wildwood installed a radon fan system and then later added a kitchen exhaust fan that is ducted to the outside. That exhaust fan can depressurize the house, pulling more radon from the soil. The verification test captured the combined effect of both systems, and the solution was to either balance the exhaust or install a make-up air system.

Who should perform the radon retest verification

You can buy your own passive radon detector and run the test yourself. Many homeowners do, and it is a fine way to get a general sense. But if you are relying on the result to confirm that a mitigation system works - especially if you plan to sell the house or want a formal record - it is worth having a professional involved. Professionals like Air Sense Environmental use calibrated active radon monitors that are less prone to user error. They also know the local geology of West St. Louis County, which has a mix of karst limestone and glacial till that can produce uneven radon hotspots.

A professional will also follow a remediation protocol that includes proper placement, closed-house conditions, and logging of test conditions. They can provide a report that is defensible if you ever need to show it to a buyer, a realtor, or a health department. That document is your proof that the system is working, and it is worth the extra cost.

Final thoughts on radon retest verification

Radon retest verification is not a formality. It is the only way to know whether the money you spent on radon mitigation actually made your home safer. In Chesterfield, Ballwin, Wildwood, and Town and Country, where radon levels can vary dramatically from one house to the next,

skipping this step is a gamble. A properly done verification test - whether you do it yourself with a long-term passive detector or hire a professional with a continuous radon monitor - gives you peace of mind and a clear record that your family is breathing safer air.

The next time you see a radon test result that is borderline, remember that the test itself is just one piece of the puzzle. The verification test after mitigation is what closes the loop. Do not rush it. Do not assume it will be fine. And if you have any doubt, run a second test or call someone who does this every day. Your lungs will thank you.