

Leak Detection and Repair

At some point, every pool owner will get that unpleasant feeling that they have been adding more water than usual to their pool, and they'll ask themselves, do I have a leak? Sometimes it's obvious, as the water level drops so fast that you can almost watch it going down, by a foot or more each day. More often however, it's a gradual water loss, and it makes the pool owner question whether it's a leak, or just evaporation and splash-out. Either way, the potential issue cannot be ignored. If it is a leak, failing to repair it will lead to increased water and chemical expenses, as well as potential costly water damage to other parts of your pool and property.

Signs that Your Pool May be Leaking

- Observed water loss of more than ½ inch per day. It's not uncommon to lose ¼ inch of water a day to evaporation and splash-out, but more than that could indicate a leak
- Air bubbles coming out of your return jets
- Your pump has difficulty priming or maintaining prime
- Your pool deck is heaving, sinking, or cracking
- Landscaped areas near the pool are wet or have pooling water

The key to effective pool leak detection is to employ a systematic troubleshooting approach in order to narrow down all potential sources of the leak and isolate the problem. Before you call in professional assistance you can try and isolate the problem yourself. The "bucket test" will help you determine if you have a leak, and if so, whether it's in the pool structure or the plumbing/circulation system.

"The Bucket Test"

1. Fill the pool to its normal level.
2. Fill an empty bucket with pool water to about 3cm from the top. This ensures that air movement over the top of the bucket is similar to that of the pool.
3. Place the full bucket on the top or second step in the pool. If you don't have steps you could use a pool ladder. It should be in the pool however, in order to keep water temperatures consistent.
4. Mark the water level inside the bucket with a marker, lipstick, or tape.
5. Mark the water level outside of the bucket in the same manner.
6. Run your pool as usual for at least 24 hours. Make sure you do this test during a period without rain, and avoid using the pool during the test period in order to control the variables.
7. After a minimum of 24 hours, compare the water level change inside the bucket to the change outside the bucket. If the outside level dropped more than the inside of the bucket, it suggests that there may be a leak in the pool.

If the results of the initial bucket test indicate that there is a leak, you can further isolate the problem by repeating the test, but with the pump off this time, and with the return jets and skimmer holes plugged with your winterizing plugs.

If the inside and outside of the bucket water levels drop by the same amount this time, then the leak is most likely in the plumbing/circulation system. If the water loss pattern is the same as in the first bucket test then the leak is most likely in the liner, main drain, or elsewhere in the pool structure. Although this test is just a basic starting point in the process, it can help you avoid spending money on professional leak detection if it turns out that you do not in fact have a leak.

You Have a Leak, What's Next?

Once you suspect that you have a pool leak or if the results of a bucket test suggest that this is the case, then it's time to call in the pool professionals. Breezewood Pools specializes in finding and repairing pool leaks of all types, and in all areas of the pool system.

Many leak detection companies only find leaks, and then leave it up to the customer to figure out how to have them repaired. This often leads to much higher overall costs, as well as lengthy delays and lost time enjoying the pool. Breezewood Pools is a "one stop shop". We do all of our own repairs once we've located the leak, often on the same day or shortly after, depending upon the scope of the repairs. This now includes diving services to repair leaks in the liner or main drain.

Breezewood Pools strives to be the best in our field. As such, we've invested in the best and latest leak detection tools. Our technologically-advanced tools help us find your pool leak in the most efficient, non-destructive manner possible, often with pinpoint precision.

Once we have located the problem area, we will discuss next steps with you and provide an estimate on the cost of repairs. Costs to repair leaks can vary significantly depending upon what materials will be needed, where the leak is, what type of obstacles exist, and ease of access. While we make every effort to limit the cutting and digging, it is often unavoidable, and we frequently have to saw-cut concrete decks to access the repair site. We will discuss this with you in advance. After our discussions and upon your approval, we will commence with the repair.

Once the repair has been completed, we do a follow-up leak detection analysis to ensure that it has been fully repaired. It's important to note that it is quite common to have multiple leaks at once. Secondary leaks generally do not become apparent until the primary leak has been repaired. Once one of the original pool plumbing fittings fails, it is very common for more to follow within a short period of time. Water always looks for the path of least resistance, so once one leak is fixed it looks for the next easiest way out. Because of this, pool leaks generally have

to be repaired one leak at a time. It can certainly be a frustrating process, but rest assured that the Breezewood Pools team has the expertise and professionalism to fix your pool right and have you swimming again in no time!

Our Leak Detection Equipment

These are some of the state of the art tools that Breezewood Pools uses to pinpoint the exact location of your leak in the most efficient, non-destructive, and precise manner available today:

The Leakalyzer: Water Loss Sensor

The Leakalyzer enables rapid determination of a pools water loss. It measures water level changes to the 10,000th of an inch, enabling leaks to be identified in as little as 5 minutes. The Leakalyzer is so sensitive that water loss of less than a gallon from a 20ft. x 40ft. pool is readily indicated. Following its analysis it produces a computerized graph showing the precise amounts of water that are being lost per hour and per day. It also breaks down how much water loss is due to evaporation and how much is due to the leak.

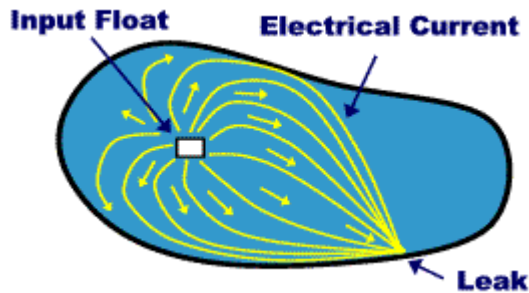
The Leakalyzer can provide the following valuable benefits:

- Provide **Leak Status Certifications** for pool owners, insurance companies, and realtors. This is very helpful if you are looking at buying or selling a home with a pool
- Confirm a pool's leak status before investing time in extensive leak location procedures.
- Confirm leaks have been fixed at the completion of repair thus avoiding call-backs.
- Compare pump-on to pump-off water loss while at the pool to better direct leak location activities.



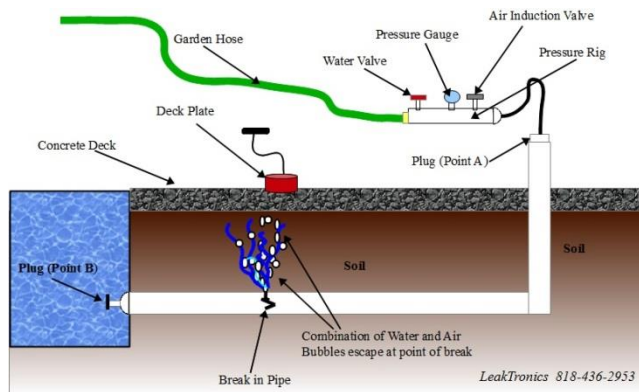
LeakTrac 2400: Liner Leak Detection Tool

The **LeakTrac 2400** uses patented technology to direct you to even the smallest vinyl liner pinhole leaks in minutes. Stop wasting time visually inspecting every inch of a liner. The **LeakTrac 2400** finds leaks by putting a small electrical charge into the pool water, then tracking the flow of electricity as it makes connections to the ground through conductive penetrations in the liner. Once we locate the liner leak we apply the necessary patches to fix it.



LeakTronics Pressure Rig

For suspected leaks in the pool's plumbing system (returns, skimmer line, vacuum line, etc.), Breezewood Pools uses the LeakTronics pressure rig to perform a pressure test. The lines are plugged and then pressured using an air and water combination, up to 15-20 PSI. If the lines hold pressure without dropping (as measured with a pressure gauge) then there is no leak. Each line is pressure tested separately until we find the one that fails to hold pressure, which indicates that this is the line that is leaking.



LeakTronics Deckplate: Sonic Underground Leak Detection Tool

Once we have identified which line is leaking we next have to figure out exactly where the leak is along the line. The LeakTronics Deckplate is used, in conjunction with headphones and an amplifier, to listen underground as we follow the likely path of the leaking line. The Deckplate with advanced noise filtering technology makes listening through concrete, brick, rock or any other solid surface simple. The mixture of pressurized water and air makes a distinctive noise which the Deckplate allows us to hear. This allows us to pinpoint the exact location of the leak without destructive random digging or cutting through your deck (digging and cutting may be required to perform the repair however).



LeakTronics Pool Scope and Pipe Mic Hydrophones

These two specially designed underwater microphones (hydrophones), paired with our headphones and amplifier, allow our team to listen for leaks below the pool's water level. The mics are placed underwater near all typical leak locations such as return jets, skimmers, main drains, steps, and lights. The distinctive sound of flowing water will help to identify any leak locations.



LeakTronics Videoscope

The Videoscope underwater video camera allows our team to look inside small areas such as pipes and light receptacles that would otherwise be inaccessible. A special attached dye injection system allows us to identify and view even the smallest of leaks under the surface.



Tankless Dive Unit

This completely filtered oil-less compressor operated dive unit allows our team to breathe underwater while performing repairs without the problems and expenses of cumbersome tanks. No need to worry about refilling tanks before a job, or scratching or denting the pool when getting in or out.

