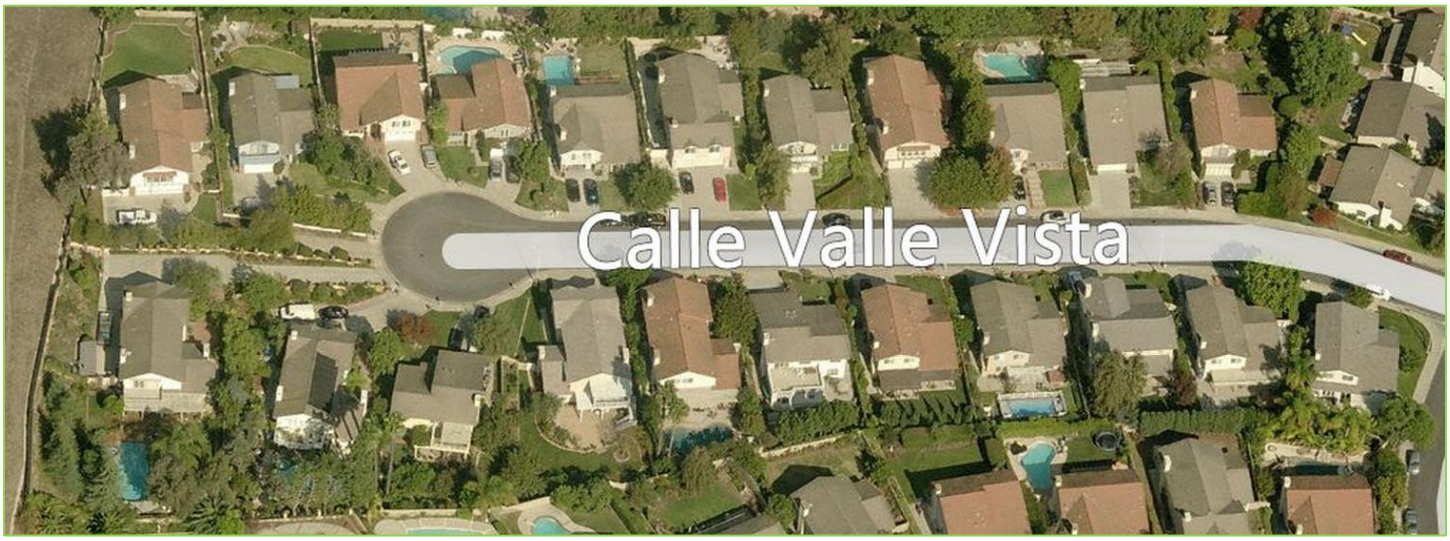
Under-Slab Water Pipe Break: To Repair or Repipe?

From: Larry Riggs
Subject: Under-Slab Water Pipe Break: Should I Repair or Repipe?
Date: February 1, 2013

Introduction



Of the 22 homes on Calle Valle Vista, under-slab pipe breaks have occurred in at least six homes. If this rate applies throughout Oakridge, then perhaps 100 homes may have had similar experiences. In one case in which the break caused major structural damage, the repair costs were $60,000. In another case, the first break was repaired; then a second and subsequently a third break occurred, causing disruption, more damage, and additional expense.

Pipe breaks within Oakridge that may cost a homeowner can occur in various places:

- In the water line between the curbside meter and the house,
- Under the slab, and
- Within the walls.

Damage may be extreme or negligible, depending on the severity of the break and when it is detected.

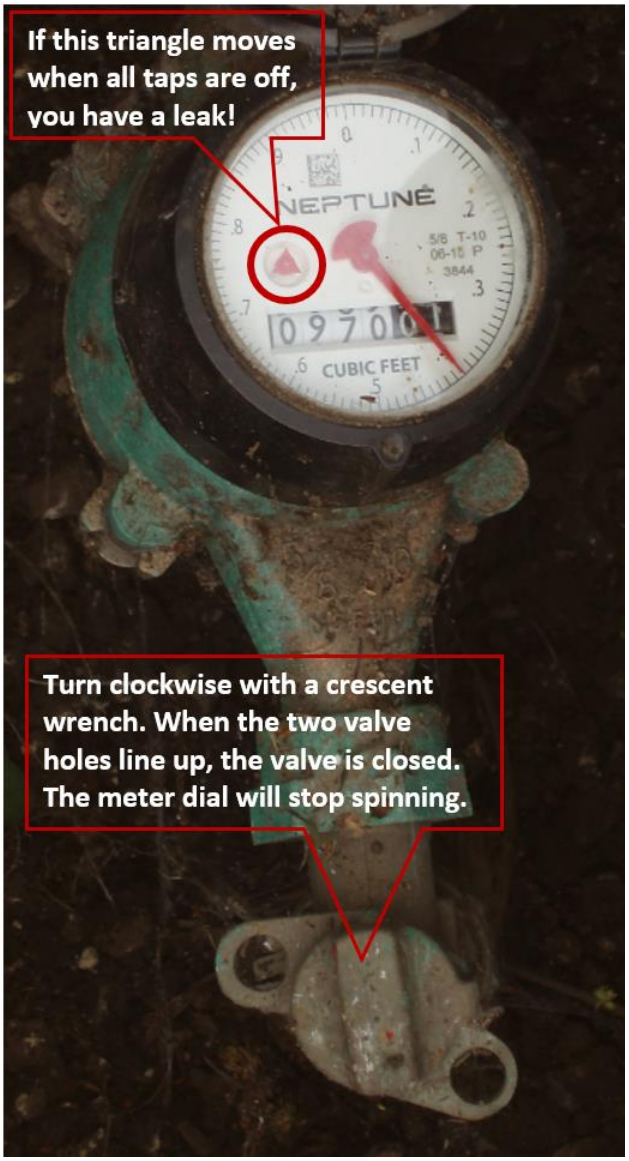
I would like to share our experience with an under-slab pipe break; the information may benefit those faced with a similar event. The narrative below covers detection to resolution.

Note that no visible damage occurred from our pipe break. Fortunately, we caught it in time. The damage that occurred was only under the slab, out of sight, and undetectable.

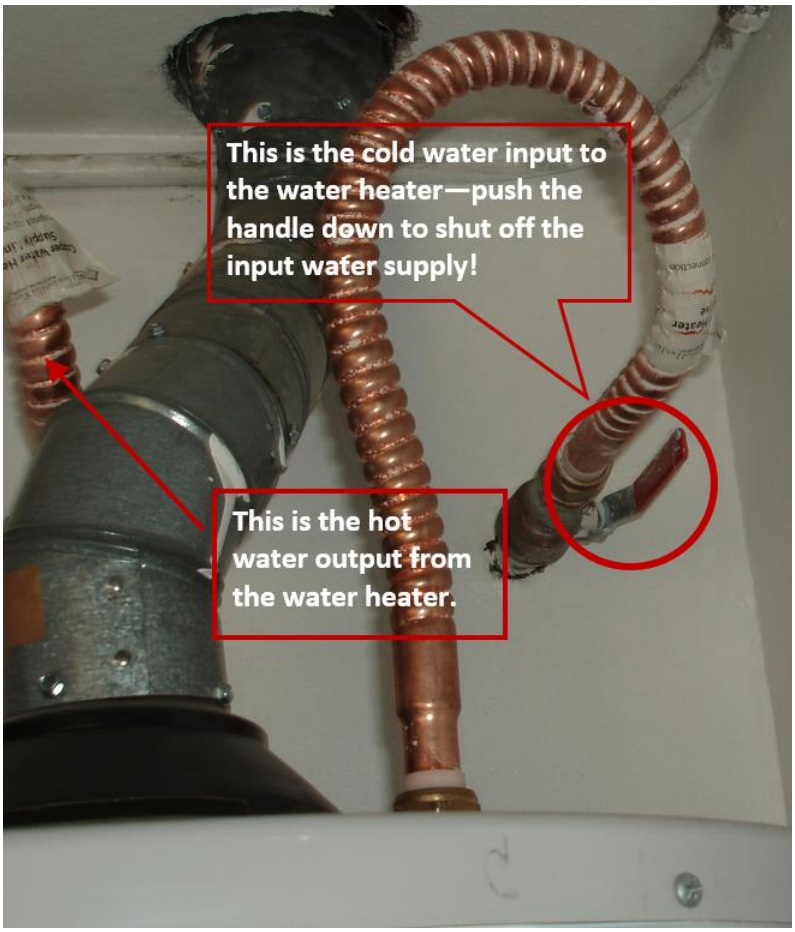
Detection

In early December, standing in the downstairs bathroom, my wife heard the sound of flowing water—it was the same sound you might hear when a shower is running. The sound was continuous, and noticeable for a week or more—I could hear the sound too but dismissed it. Then, on December 22, 2013, with the help of several neighbors, we made the following three discoveries (see photos below):

- With all water turned off in the house, the water meter at the curb showed water flowing through it. The triangle was rotating once every 4 seconds.
- In the downstairs bathroom, one area of the floor was very warm to the touch and other parts of the floor were not.
- When I turned off the hot water output valve at the top of the water heater, the flow through the water meter stopped—the triangle stopped moving. (Note: Code only requires a shutoff valve on the input side of the water heater; mine had valves on both the input and output side.)



Curbside Water Meter



Hot Water Heater in Garage

What our sleuthing revealed…

Water is piped from the curbside meter, enters the house at the front, and goes under the slab, from which pipes distribute water throughout the house.

One of these pipes supplies water to the hot water heater, from which a pipe exits, returns under the slab, and distributes hot water throughout the house.

A break had occurred in that hot water pipe as it passed under the downstairs bathroom.

By shutting off the valve on the water heater's output side, we stopped the flow of water through the leaking hot water pipe, stopped the leak, yet retained the use of cold water. We considered it a remote likelihood that a cold water pipe might break as well. We didn't need to rush to seek a solution, but in the meantime we would have only cold water in the house. We operated without hot water for three weeks, using work or gym or neighbors' showers.

Our Choices: To Repipe or To Repair…

Option 1: Repair

To repair, one hires a leak detector, who locates the leak using sonar. The cost of locating the leak is under $500. The warm spot in our bath may not be where the broken pipe is, but might be where the water had pooled, someone explained. Once the leak location is known, then a contractor cuts and jackhammers a hole in the slab, makes the repair, and patches the slab. The leak may be under a floor and/or under a wall. After the repairs are completed, you have no assurance that another leak might not occur in the future.

The city inspector explained that our slabs have "post tension" cables in them, 4 feet apart in both directions, put in when the concrete was poured, and pulled to about 28,500 lbs. of tension. When the concrete is cut for an under-slab pipe repair, there is a risk of cutting or damaging one of the cables. If this happens, injury can occur and concrete and flooring can be extensively damaged. A structural engineer can design a sound repair when a cable is cut and the city needs to confirm and approve that necessary retensioning has occurred. Thus if cost is a consideration, repairing is not always the best solution.

Option 2: Repipe

To repipe, a plumbing company starts where the water line enters the house and creates an entirely new above-ground water flow system. The under-slab pipes will no longer play any role in water distribution. The new water system consists of pipes that pass through walls and ceilings. These pipes connect up to the plumbing fixtures in the house: the bath and kitchen sinks, toilets, showers, wet bar, ice maker, and garage sink. They connect up to the outside hose bibs and sprinkler systems.

Our Choice: Repipe

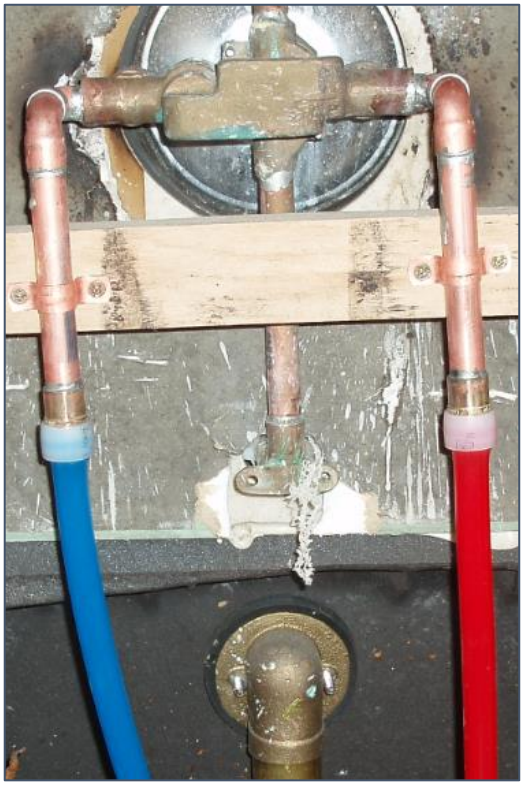
We did not want to ever have to address this issue again. I spoke with the plumber who had done a neighbor's repiping and with a company that *only* does repiping. Their website is at www.repipe1.com and on the permit they are listed as Ultimate Builders, Inc. in Sherman Oaks. So on December 23, 2013, we signed the contract, and they began work on January 13, 2014.

Dollars and Cents…

Repiping our Haverford with PEX piping cost $5,950 plus repainting costs of $1,017 for a total of **$6,967**. Repipe1 does the repiping and the patching and texturing of the holes it makes. The process created about 65 holes inside the house and about 6 in the stucco on the back wall of the house. I directed our painter, Bill Pennock, to simply bill me based on time and materials; he estimated two days' work for two painters would be involved. (It turned out to be a bit less.) Numerous paint colors were involved, as we had recently repainted all rooms, many with dramatic accent walls.

Why PEX and Not Copper?

PEX is high-density cross-linked polyethylene flexible piping that has been approved as a substitute for copper piping in Thousand Oaks for ten years. It is not without critics, but we chose it because repiping with copper would have cost $8,350 or $2,200 more. It has been improved in recent years and is now widely accepted for indoor plumbing uses. For more information, see http://en.wikipedia.org/wiki/PEX, or search for YouTube videos on PEX. Repipe1 uses **uponor** PEX exclusively—visit their site.



PEX to Copper Connections for a shower

Will Insurance Cover the Cost?

It is unlikely. I spoke with State Farm three times; they said it was not covered. Repipe1 indicated insurance does not normally cover it. Some neighbors have had insurance claims honored, but in these cases, the pipes had burst and damage to the property was covered. Our policy has a $4,000 deductible. Thus, fixing the problem would have cost me that amount anyhow. The *real* cost to me is the excess over my deductible, or about $3,000.

In our State Farm Homeowners policy, SECTION I – LOSSES NOT INSURED states,

- "We do not insure…continuous or repeated seepage or leakage of water or steam from a: plumbing system, including from, within or around any shower stall, shower bath, tub installation, or other plumbing fixture, including their walls, ceilings or floors; which occurs over a period of time. If loss to covered property is caused by water or steam not otherwise excluded, we will cover the cost of tearing out and replacing any part of the building necessary to repair the system or appliance. We do not cover loss to the system or appliance from which the water or steam escaped."
- "We do not insure…wear, tear, marring, scratching, deterioration, inherent vice, latent defect or mechanical breakdown."

A web report suggested that the insurance will not cover repiping as described above. However, if the pipe burst and caused the carpet to be ruined, they would cover it. Ironic!

So if you are faced with an under-slab pipe break, talk to your insurance company, consider the issues I have raised above, and then decide how to proceed.

Our Repiping Chronology…

Day 0: Sunday—Prep for repiping

We moved furniture away from the walls in the living room (where the pipes enter), and along a path in the entry way, family room, and kitchen, since pipes will be routed through the ceilings of those rooms. We cleared things out from under all sinks, out of the downstairs hall closet (for access to the shower's plumbing and to the ceiling where major distribution manifolds were installed), and out of the upstairs hall closet (for access to the tub and shower's plumbing).

Day 1: Monday—House was repiped

A crew of five arrived at 8 am, left at 5 pm, and we had hot water once again. They knew exactly what had to be done. They started at the point where the water enters the house, installed a new pressure relief valve, cut the pipe there that goes under the slab, and diverted the water through the wall into the living room, up the wall into the ceiling, and across the entry way. From there, they routed lines into the family room and kitchen, and also into the hot water heater in the garage. A key distribution point now exists over above the downstairs hall closet, where two manifolds (hot and cold) distribute water into the upstairs. The crew cut 65 holes into the walls, ceilings, and under sinks; new water supply lines for all sinks and toilets were installed. Six holes in the stucco on the rear of the house were made to service the kitchen plumbing.

Day 2: Tuesday—Job was inspected (first of three)

Repipe1 pulls permits—it's automatic and included in the bid. City inspector Ken McDonald reviewed the work and approved it with three caveats:

- He requested a special inspection of the wire mesh lath and paper that supports the wet stucco on the outside, to ensure that this moisture barrier will not be compromised.
- He asked that a nail plate be installed over an exposed 2x4 through which an electrical cable is passing. I bought a plate at Home Depot and installed it.
- He noted a place where a copper pipe was close to a steel brace, and warned of electrolysis should the two come in contact with one another. I moved the brace away from the pipe.

Day 5: Friday—Most holes were patched

No one came on Wednesday or Thursday. Manuel and Ramiro, drywall repairmen, arrived at 9:15 am and left at 5:30 pm. They patched 44 (of the 65) holes inside and secured the wire mesh and paper outside. For the repairs, they used the drywall pieces that had been cut out during the repiping. After repairing the holes, they textured to match the adjacent surfaces.

Day 8: Monday—Painting commenced

Bill Pennock and son Scott painted areas that were patched on Friday. They completed the task by day's end and had high compliments for the quality of the patching. "Among the best I've seen," said Bill.

Day 9: Tuesday—Lath inspection occurred and remaining holes were patched

Manuel and Ramiro returned and completed all remaining drywall and stucco patching work. Inspector Ken examined the lath and confirmed the moisture barrier has been properly repaired. The drywall repairmen finished stuccoing the outside and repaired the remaining drywall holes—11 in the garage and 10 upstairs.

Day 10: Wednesday—Final painting was completed

Bill and Scott Pennock completed the painting of the 21 drywall holes and the outside stucco; they praised the stucco texturing job.

Day 15: Wednesday—Final inspection was performed

Ken conducted the final inspection of the job, showing only interest in the stucco; he too thought the stucco repair job was first class. I paid Repipe1 the balance due.

If you have any questions, email me at

boardmaster@oakridgenp.org.

Comments…

This section is addressed to anyone considering repiping.

1. **Embrace the inspector**: We have had considerable work done over the years both inside and outside the house. For each, I pull a permit or have the contractor do it. The City inspector is my advocate and ensures that the job is done right, by preventing the contractor from taking shortcuts or giving me misinformation. As I indicated above, he pointed out some things that would otherwise been missed. The permit fee was $48, less than 1% of the job's cost.
2. **Watch for water leaks**: If you suspect an under-slab break, you can confirm it by checking your curbside water meter; you may be able to isolate it as I did by shutting off your hot water heater input pipe. One neighbor of ours, who has already experienced water breaks in the wall and in the line between the water meter and the house, is considering repiping simply to avoid having to confront this issue in the future.
3. **Do homework on PEX pipe**: You may be wary about not using copper pipe. Repipe1 uses ***Uponor PEX-α***. Visit its website. The company states that more than 2 billion feet of its tubing are installed in North America. PEX is now installed more often in new-home construction than copper and CPVC combined. Inspector Ken told me that under-slab piping is now only used in special cases, e.g., to provide water to a kitchen island.
4. **Be aware of the side-effects of repiping**: We have observed a couple:
   a. Water now flows through the walls; you hear when the back yard sprinklers are on.
   b. Water pressure is slightly lower at our shower. Repipe1 normally sets the pressure reducer to 60 psi; I asked them to raise it 65 psi. Before the repiping, my water pressure was 70 psi at the front. Measured water pressure now at the front, rear, and side hose bibs is 65, 60, and 58 psi. I may raise the front back to 70 psi to restore the former pressure. Ken said it may not be higher than 80 psi. The higher the pressure the more stress to the pipes and the greater the water usage.
5. **Check the work as it is being done**: When work this extensive is quickly done, there is always the risk of error, albeit only minor ones. Immediately after the repiping, and after the drywall repairing, I examined all the work and photographed everything in case some form of documentation might be needed. Now, 17 days after the initial repiping, everything is perfectly back to normal, i.e., there is not a shred of evidence that repiping was done.
6. **Be prepared to clean up some mess**: Cutting holes in walls leaves a dust carpet on horizontal surfaces. Spraying of texturing after drywall patching leaves texture on adjacent surfaces. I spent hours cleaning floors, counters, and tables, wiping overspray off walls, and removing texturing imperfections with a scraper to keep the painters' bill down, by freeing them from having to bill me for time spent cleaning up the unavoidable mess left behind by the drywall patchers.
7. **Know what your warranty is**: To their credit, Repipe1 offers a Lifetime Warranty, over the lifetime of your property, guaranteeing "each job to be free from defect or error. They "will repair any such defect or error at our own expense, including any collateral damage resulting from that defect or error." They are active on Angie's List and provided me a $200 discount as I am a member.