Fort Langley Community Association Water Quality - North Langley Report

Analysis and recommendations

Fort Langley Water Quality

Issue Summary - Introduction

The Township of Langley owns and operates several groundwater wells. The largest of these, Fort Langley Well #2, is the primary source of water for Fort Langley and eastern Walnut Grove. Residents and businesses in these same areas have recently experienced several years of wide ranging and costly plumbing failures due to aggressive corrosion. The most likely cause, based on historical data and Canadian corrosion control standards, is at least the low pH level of this groundwater. Township data shows the pH at this well has historically measured between 6.5 - 7.5. This historical trend shows Well #2 pH is below even previous Metro Vancouver corrosion control standards (pH 7.7) and well below their current standard pH range of 8.3 – 8.5.

Facing plumbing repair bills and property damage insurance claims ranging from hundreds to tens of thousands of dollars, owners are understandably frustrated. Not only by the financial impacts but also by the major disruptions to personal and family lives. Other parts of the Township do not appear to be affected in this way - only the areas receiving water from Well #2.

A pH correction system for Well #2 was budgeted and planned for 2021 but faces ongoing delays with an anticipated completion late in 2022.

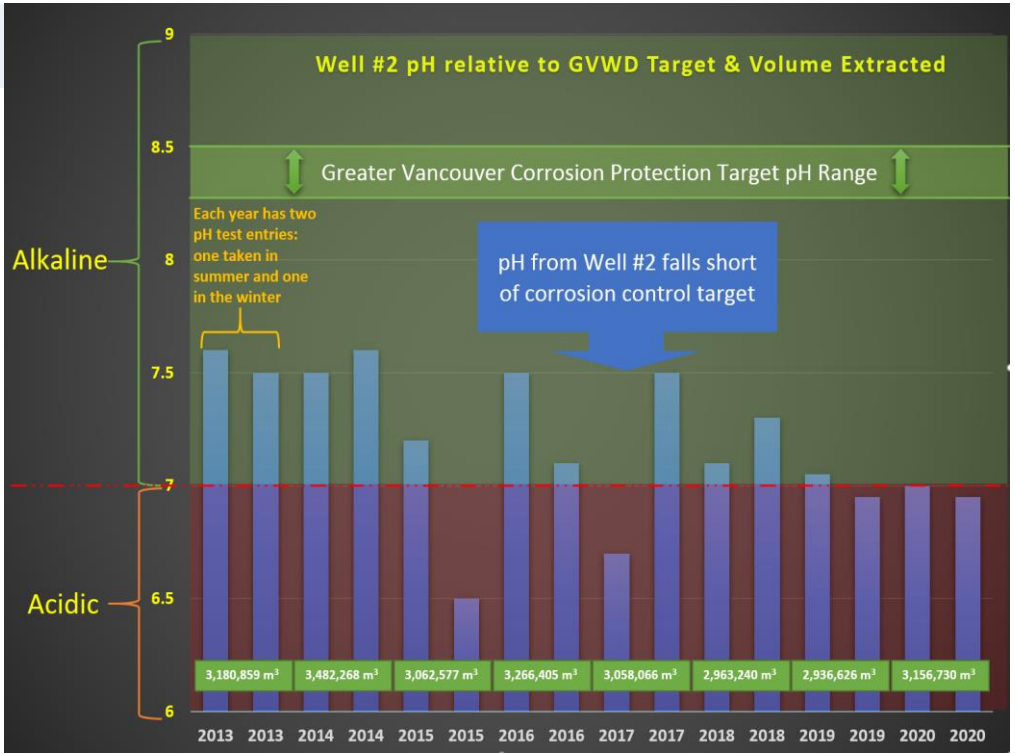

Figure 1: Well #2 pH from Township records from 2013 through 2020 showing large gap between delivered pH of groundwater delivered to Fort Langley and surrounding areas compared to most recent GVWD corrosion protection pH targets delivered to residents in the Township receiving their water via connection to Greater Vancouver watershed.

Fort Langley Water Quality

Issue Summary - Update

The Township of Langley acknowledges in their water quality report for 2021 that water from Well #2 is a problem, noting that it is "…under the operational guideline" (Figure 2 – right). The large difference in delivered water pH establishes a two-tier division between most Langley residents receiving, corrosion protection compliant, GVWD water with pH between 8.3 and 8.5, versus Fort Langley/vicinity residents presently receiving acidic, low-pH, corrosive groundwater from Well #2 that in 2021 had an even lower historical average pH of 6.6.

Following a petition on Change.org entitled "Resolve the Township of Langley water issue" which received 1,788 signatures, the Fort Langley Community Association (FLCA) surveyed residents regarding their challenges with water quality and corrosion. The pages that follow detail their experiences, costs incurred, and examples of the damage seen in the area.

Meanwhile, the aggressive corrosion caused by the low pH of this acidic groundwater continues with the potential to leave lasting damage to owner's plumbing systems.

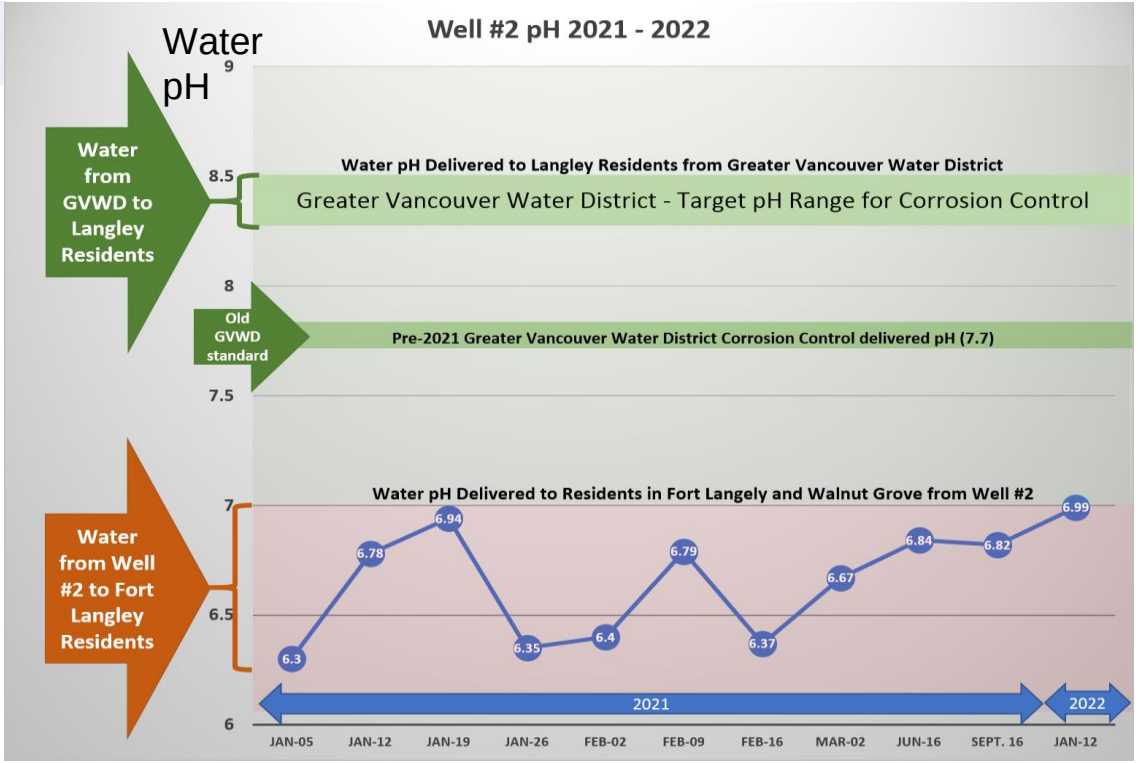

Figure 2: Well #2 pH from Township records for 2021 and January 2022 showing an average pH of about 6.6. Note that ~70% of Township residents serviced by Watershed water from Vancouver Water supply receive the benefit of the latest corrosion control standards and treatment – those in Fort Langley and parts of Eastern Walnut Grove served by Well #2 do NOT!

West Langley Water System Overview

West Langley Water System Overview

Figure 3a: Well #2

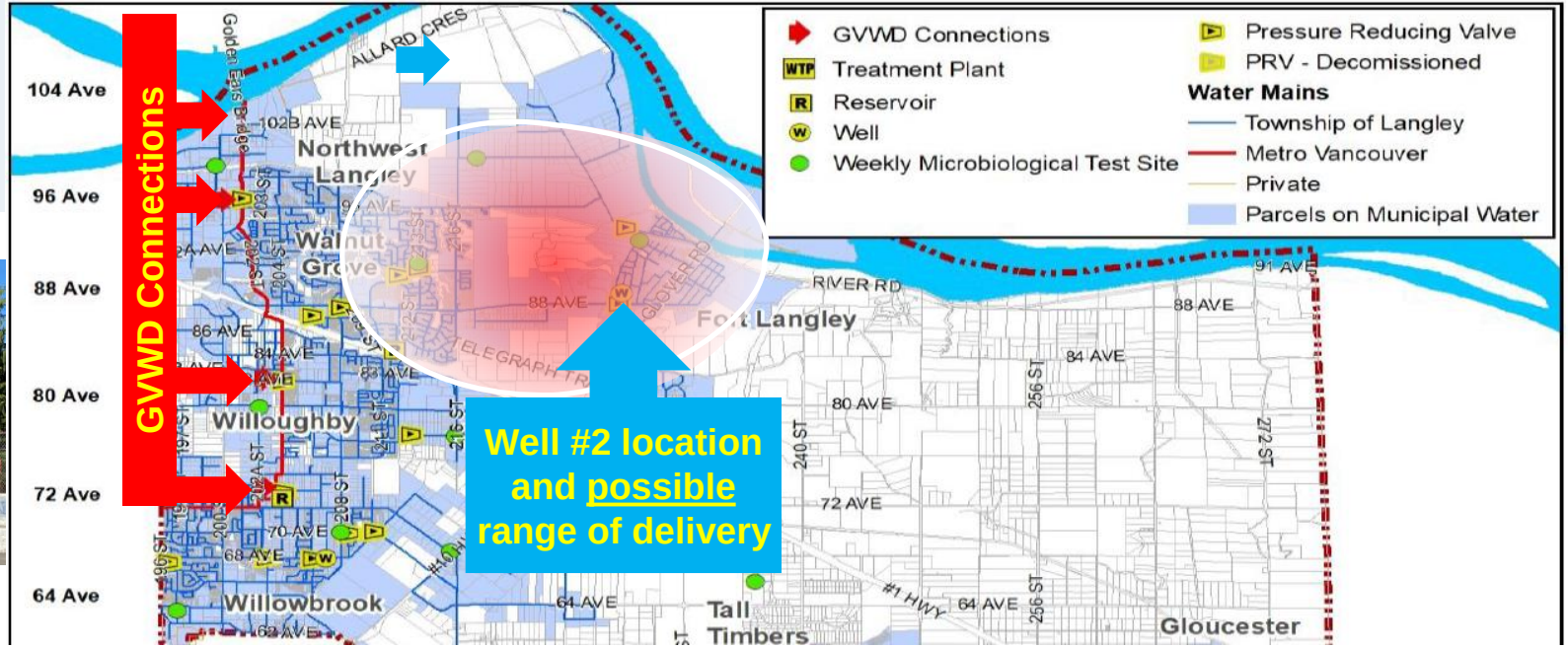

Figure 3b: Well #2 is geographically centered on the edge of Fort Langley on 88th Street at the crossing of the Salmon River. Water is pumped from this location into the blue Township of Langley water mains to the surrounding community and residents. The specific range of delivery from Well #2 varies seasonally or via changes in relative pressure, valve settings and or flow rates within the water mains operated by the Township.

The Greater Vancouver Water District Connections (red) service Langley via a primary water main crossing the Fraser river and tying into the Langley distribution system at locations North to South near the Western edge of West Langley. In 2021 the West Langley region received 25% of its water from Well #2 with the main source coming from GVWD and 2% from a smaller well in the region.

What issues have you experienced with your plumbing?

Out of 48 total responses, respondents reported multiple issues with plumbing in Fort Langley and Walnut Grove

27 respondents reported damage to plumbing fixtures. These were primarily hot water tanks, typically replaced multiple times within 5-10 years. Other fixtures mentioned included kitchen taps, toilets, shower heads, and bathtub drains.

23 respondents reported leaks, from minor pinhole leaks to larger more extensive leaks.

20 respondents specifically noted corrosion of fittings causing failure, including one report of a shower head breaking off due to a corroded fitting.

8 respondents mentioned major or catastrophic leaks (defined as a leak causing damage to multiple areas of the house and requiring repairs of the house beyond repairing the plumbing itself)

7 respondents reported accelerated staining of porcelain fixtures such as toilets, sinks, and tubs requiring replacement

4 respondents specifically mentioned insurance claims, with some making multiple claims

3 respondents will not drink the water as they feel it is unsafe

2 respondents have or will be replacing all plumbing lines in their house to prevent further issues

1 respondent specifically mentioned an appliance ruined from the water supply

When did this take place?

Respondents recorded a wide range of dates and timing for plumbing issues

17 respondents reported specific instances of plumbing failure in 2022

12 reported specific instances of plumbing failure in 2021

5 reported specific instances of plumbing failure in 2020

6 reported plumbing failure instances 4-5 years ago

8 reported plumbing failure instances 6-10 years ago

10 reported that the problems were ongoing or have lasted longer than 10 years

What was the cost for these repairs?

Respondents reported a wide range of repair costs

The total of reported repairs from respondents exceeds $498,550.00

The lowest reported total was $250

The highest reported total was $120,000

The average repair cost is $13,120

3 respondents are still experiencing costs and do not yet have a total

Comments from residents

Within a 400 foot radius of our home, the house directly behind us on Gay Street in Fort Langley experienced a burst connection and flood that required a restoration team two weeks ago to come in and repair extensive damage. Today as I walked down the same street, Murrayville Plumbing was on site a few doors down doing a “complete” re-piping and restoration of all plumbing in another home. The homeowner has given up trying to keep up and asked that the whole home be re-piped and re-fitted to the tune of tens of thousands of dollars. Plumber from Murrayville Plumbing said this is pretty typical “job” for Fort Langley.

- Resident

We need our elected officials to stop this cycle of corrosion and damage inflicted on us by a non-uniform water system which is proudly touted as granting some water independence to Langley which is clearly affecting taxpayers disproportionately across the Township! Perhaps a $2000/year cumulative tax grant for re-piping for the 2000 to 3000 affected homes might reflect a fair and equitable payment for the few dollars each home saves every year by relying on faulty well water delivered outside of established standards?

- Resident

Lines, valves etc. recently replaced due to seepage and resultant corrosion. This is the second time in 3.5 years I have had to spend $$$$ on this issue and the hot water tank also had to be replaced this time due to a build up of corrosive material on the heater coils resulting in leaks.

- Resident

About 18 months ago I had to have a plumber go through my house and replace all the brass joins and shutoff valves in the plastic piping. All were corroded with a few leaking. So yes I agree there is a problem

- Resident

Comments from residents

Enough is enough. What is the plan, if any, to seek reimbursement from the township as I am aware that others have had the same problem.

- Resident

I am happy to hear there is more happening with the water issue. As a walnut Grove resident I have been dealing with this for some time. I would love to speak with someone in your association regarding this as I started a petition a year ago and it now has 1400 signatures. I have samples of rotten connections and photos of where the water even ate through a gas line almost causing a catastrophic gas leak in a house.

- Resident

We have lived in our house since the spring of 2005. Basement has flooded no fewer than six times. Over $25k in damages plus numerous water stains in ceilings. We are on our 3rd hot water heater.

- Resident

I have had water and pipe issues for a number of years and it appears to be getting worse. Last year I had a company in to replace pipes coming into my house and also to the outside. That was just over one thousand dollars. I have also had a friend come in to repair the pipes that had a fine spray coming in. I am at the point where I feel it is important to be checking the basement several times a day. This started last year when I had several occasions where a fine spray would be coming through the pipe. Years ago I started using a dehumidifier to get rid of moisture. My basement is not my favourite place to be in my house! Hopefully by working together something can be done.

- Resident

Comments from residents

I hope we can get the township moving forward on fixing our water! I don't want to do any more extensive upgrades to my plumbing including water softener until they do their changes. Last I read they were going to install treatment to raise the PH to 8 this summer? Is that still the plan and what is the completion date?

- Resident

The engineer says that buying a water softener will not do anything for you as it is a pH issue. He has forwarded it to another engineer to get a second opinion. Replacing the pipes will just give you a little extra time before you will see corrosion on them too. He thinks that you should push the pH to 8-9 to stop the corrosion. He said that it is the job of the municipality to do that for the money they collect on the water that they are selling to you.

- Resident

I live on Greer St. and had to replace my hot water tank 15 months ago. Several years ago, I had to turn my hot water recirculation pump off because it would stir up the water in the tank too much and we would get brown water every time using the hot water. I had to replace it when the plugs failed and it began to leak. So 15 months after putting in a new tank, I noticed brown water in our hot water tanks. So I replaced the sacrificial anode. The picture here is what's left of the anode beside the 1" thick, 52" long new anode. It has been completely eaten away.

- Resident

We live on Billy Brown Road in Fort Langley. We changed our hot water tank 2 years ago, I guess normal life span. There are some concerns regarding corrosion and we include some pictures of concern.

- Resident

Comments from residents

My Wife and I recently became residents of the Township; we bought our very first home in early 2020 in Walnut Grove, East of 216th on 95th Ave. My Wife and I have a young family; an 8 week old baby boy and 2.5 year old girl, that we are hoping to raise here. While we love our neighbors, community and Langley in general, we have had some extremely disappointing ongoing issues with the water. This has caused huge hardships within our family and had us question the viability of living here long term.

- Resident

Over the course of these repairs; we've had multiple plumbing vendors (5-6) all say the exact same thing. This does not happen as often to the West Side of 216th and that they regularly circulate through the East side of 216th to correct issues related to low PH levels causing degradation and dezincification (affecting all my neighbors in the cul-de-sac as well). I have also been told this is the worst quality water in all of the lower mainland by multiple vendors (Water that is provided by the Fort Langley Well #2).

We've dealt with well over $10,000.00 in plumbing related invoices conservatively, far more if you include post repair items (drywall, flooring, paint / texture). Due to recently finding more leaks developing; I am now working through an estimate to have my entire house redone in Pex B or Wirsbo for between $10,000-$11,000 not including a $4,000 pretreatment system to correct and filter the water to make the water potable and safe (See attached quotes – Blue Moon, EDS Pumps). This does also not include the $4000-5000 needed to board, mud/tape and paint all the holes afterwards.

Having $20,000 robbed from our kids' education fund is devastating for a new family. It is disappointing to realize that the 1930's house I grew up in Vancouver had fewer plumbing problems than my brand new to me, 2004 house that is 74 years younger. I inquired with TOL engineering after being consulted by the plumbers who had been through and received (an) email "RE:SR102693 Water". Have any of these projects moved forward at all? If not, when will they be complete? Additionally, the PH balance correction is only half the issue as the high levels of magnesium and calcium play a part in the degradation of plumbing systems. What is the Township's plan for this? In the interim, I would hope that some type of relief could be provided to residents through a subsidy on repairs. Failing that, switching from Fort Langley Well #2 to Metro Vancouver water would at least stop the bleeding for residents and provide better drinking water for families.

- Resident

Example photos

The following include examples of plumbing corrosion, leaks, and damage provided by residents during the reporting period. Note hot water tank sacrificial anode completely eaten away.

Example photos

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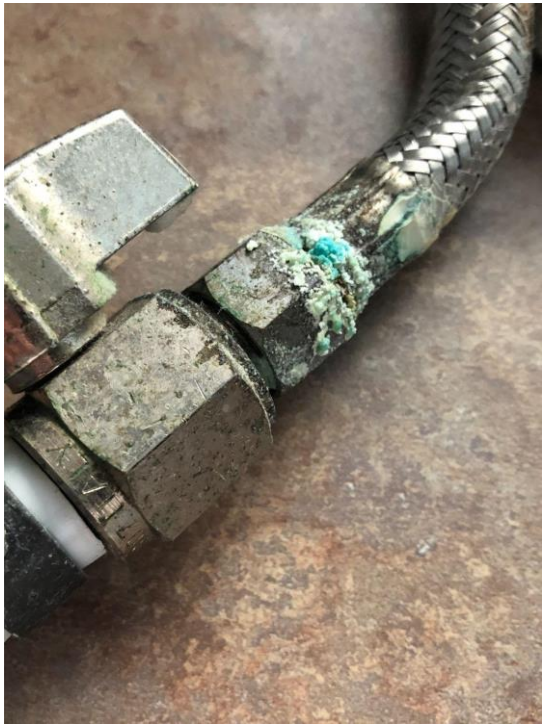

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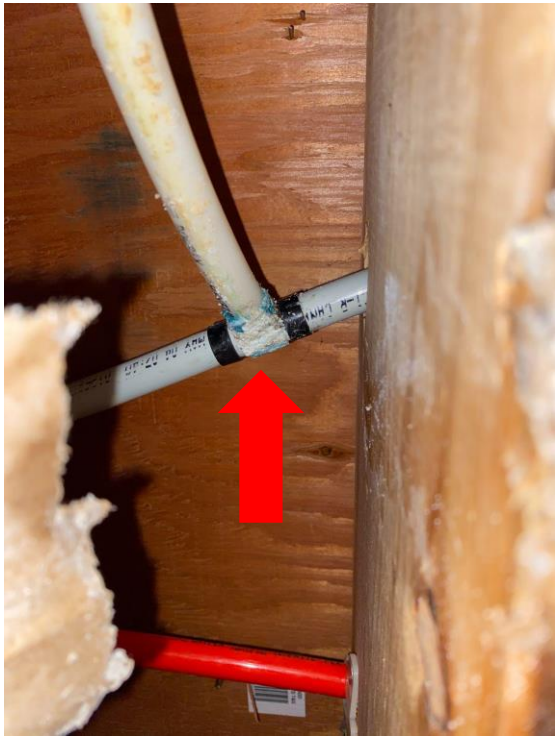
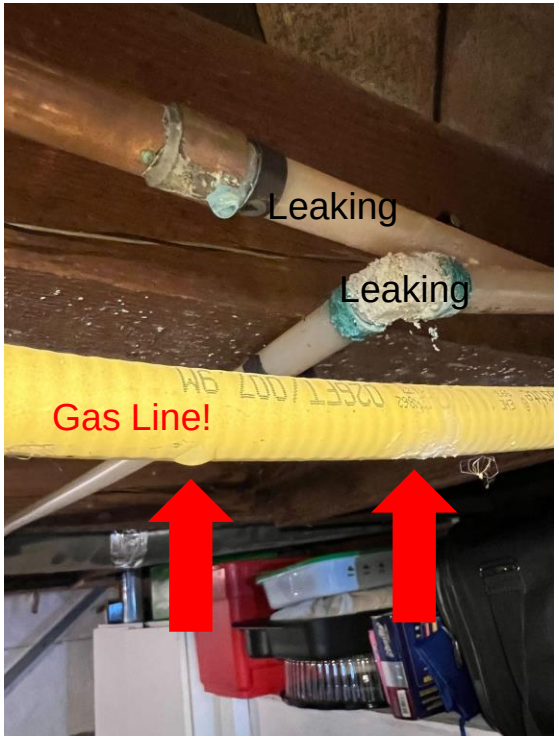
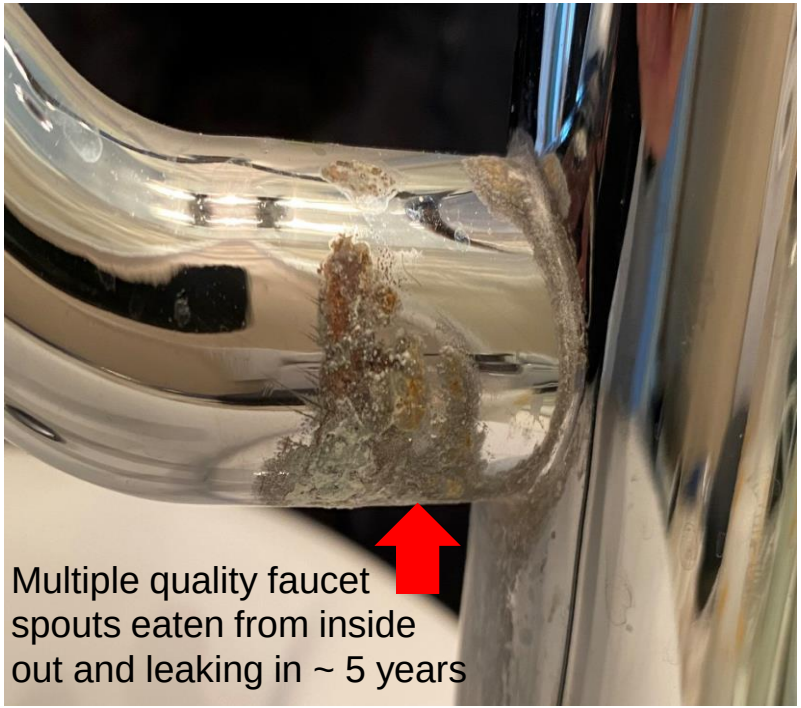
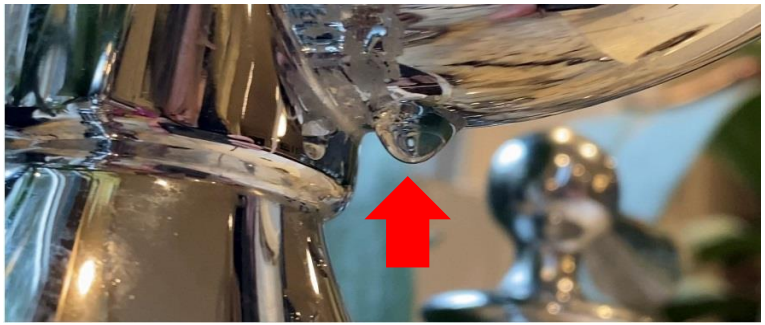




Example photos

The following include examples of plumbing corrosion, leaks, and damage provided by residents during the reporting period. 5 year old faucets completely corroded from the inside out resulting in leakage, staining and damage.



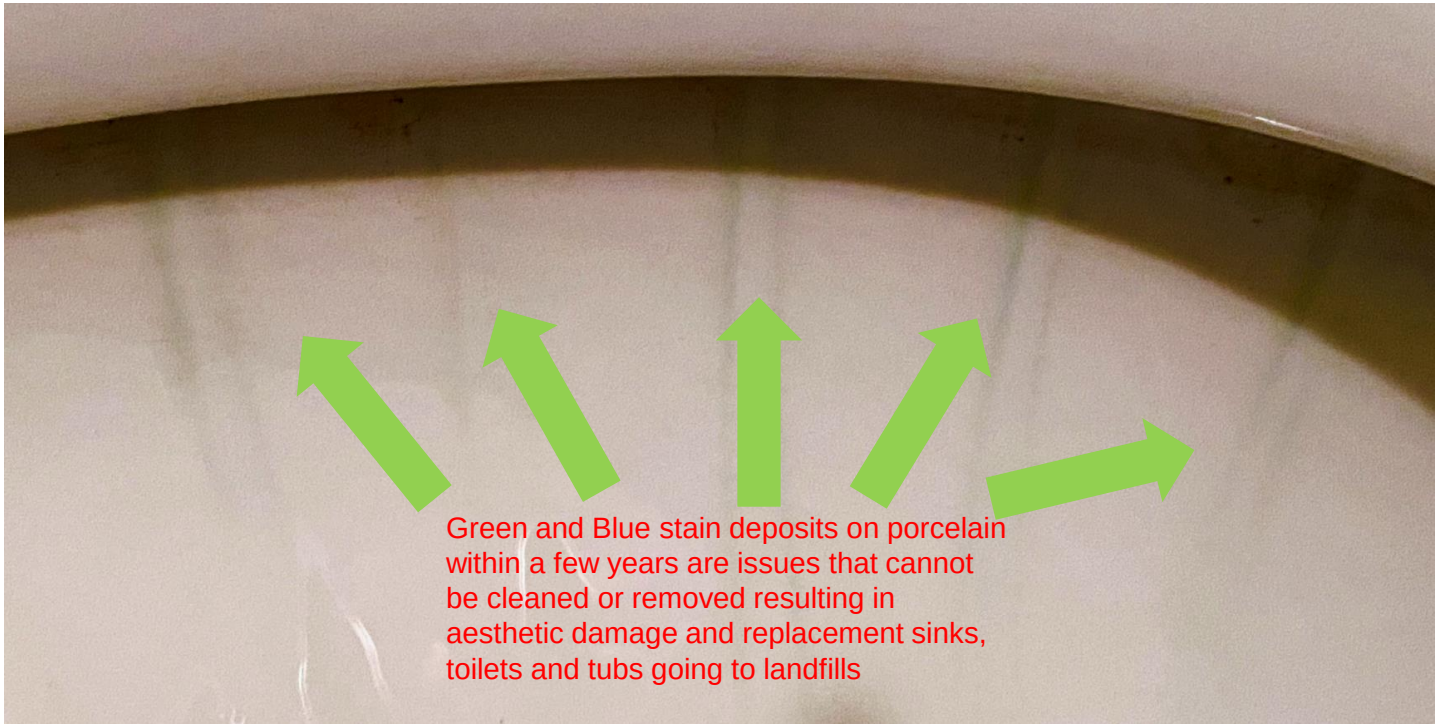


Example photos

The following include examples of plumbing corrosion, leaks, and damage provided by residents during the reporting period. 5 years of exposure to local water in Fort Langley between 2015 and 2020 resulted in complete dezincification and embrittlement of quality PEX brass fittings resulting in leakages, flooding and costly replacement.

Example photos

Example of permanent “staining” on porcelain which is forcing residents to replace toilets/sinks and bathtubs due to unsightly and permanent mineral staining.



North Langley Water System pH Control Project Update

WE NEED TO MAKE SURE THIS TAKES PLACE WITHOUT DELAY

Well #2 pH Treatment System Project Update – 9-20-2022 – Latest Forecast from Township

The Township of Langley budgeted in 2021 for an automated pH control system for Well #2 in Fort Langley to address the low pH. While this project was planned for 2021, delivery delays slowed the project to 2022. These delays are now resolved and the project now looks to be completed by the end of November 2022. Once in place, this automated system is expected to raise the low pH of groundwater collected from Well #2 to the range of 8.3 to 8.5 by adding caustic soda (sodium hydroxide) to the groundwater. This pH will align with water pH delivered via GVWD sources.

Sept 19 -23, 2022	Excavation for concrete slab for equipment
September 23, 2022	Concrete pour (weather permitting)
September 30, 2022	Pump Skid arrival
October 15, 2022	Tank and Pump Skid Enclosure arrival
Oct 15 ~ Nov 18, 2022	Installation & Commissioning (~ 3-6 weeks estimated)

Residential Water Testing

The Township of Langley has also initiated an independent water study within local residences and is reaching out to local residences in Fort Langley, Forest Knolls and 216th Street September 24th and October 2nd to perform “in house” residential water tests on delivered water pH and other properties. Local residents that have previously contacted the Township are being contacted directly for these water tests.

Questions?

info@fortlangleycommunity.com