



Plan for Lifting the Water Quality Advisory in the Fountaingrove Area

September 5, 2018

PURPOSE

This document provides the Water Department's plan for lifting the water quality advisory in the Fountaingrove Area (advisory area), including a summary of the water quality investigation, review of the data and repair, and post-advisory monitoring plan.

PLAN FOR LIFTING ADVISORY

Weekly sampling data in the advisory area since June has been under the Maximum Contaminant Level (MCL) for benzene, which is 1 part per billion (ppb) – See *Water Quality Data* section below. The highest levels of contaminant have been found in the water service lines which have been valved off since mid-January. The City has replaced all water service lines to the 352 properties in the Advisory Area with 1" poly coated copper, replaced all blow-offs in the advisory area and replaced eight hydrants where contamination was found.

To confirm the contamination has been remediated and the water quality meets all State and Federal regulations, the City will do the following:

1. Sample all service lines for Volatile Organic Compounds (VOCs) after they have been replaced. Service lines will be replaced, flushed and will sit for seven days before being sampled. Samples will be first draw samples.
2. Re-sample 10% of the service lines to confirm results. Service lines will sit for seven days before being sampled and samples will be first draw samples.
3. Once all service line and blow off replacement is complete, conduct weekly sampling of hydrants for 4 weeks. Samples will be post flush samples.
4. All results meet State and Federal regulations, lift advisory.

The City will share this plan with public at a Special City Council meeting on Friday, September 7th, at a community meeting on September 19th, and a Board of Public Utilities Meeting on Thursday, September 20th. See *Communicating Problem Corrected – Advisory Lifted* section below.

To ensure the contamination has been remediated and will not re-occur over time, the City will conduct post advisory monitoring as outlined in the *Post Advisory VOC Monitoring* section below.

BACKGROUND

On October 8th and 9th, 2017, the Tubbs wildfire burned through large portions of the City of Santa Rosa destroying approximately 3,000 residential and commercial structures. The burned areas, including the Fountaingrove neighborhood, were mandatorily evacuated and residents were not allowed to return to their properties until the beginning of November.

On November 8th, Santa Rosa Water received a taste and odor complaint from one of the residents in the burned area of Fountaingrove. In response, Santa Rosa Water staff took water samples and found a VOC contamination, including benzene. Benzene was detected at levels above the allowable regulatory

limit. Working with the State Water Resources Control Board Division of Drinking Water (DDW), the City immediately isolated the area and issued an advisory water quality notice for the advisory area.

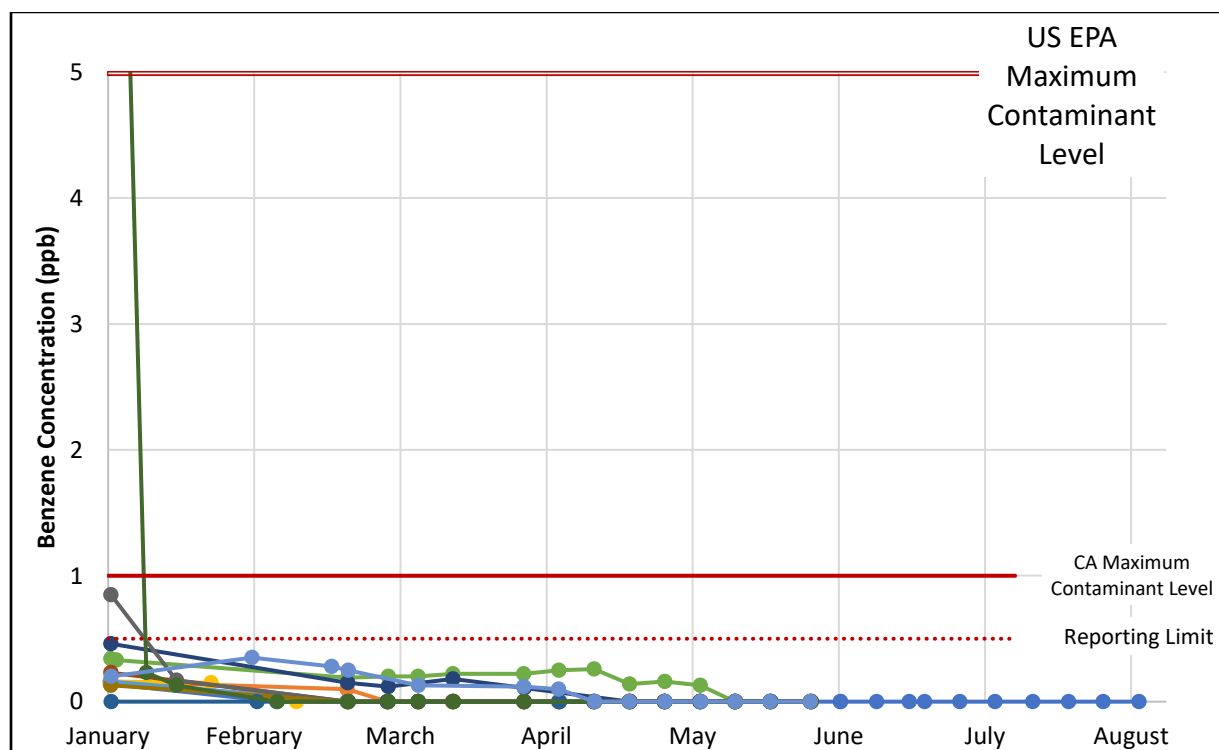
SOURCE OF CONTAMINATION

Santa Rosa Water staff, working in collaboration with the DDW, the United States Environmental Protection Agency (USEPA), Sonoma County Health Services, APEX Forensics, and a UC Berkeley professor, conducted an extensive investigation and determined the contamination was caused by the wildfires that burned through the affected area that produced ash, soot, and other debris and caused thermal degradation (i.e., melting, burning, and pyrolysis) of plastic pipes which contained contaminants. These contaminants were then back-siphoned into the distribution system where they adsorbed onto and/or absorbed into components of the water infrastructure, with highest concentrations of contamination being found in the water service lines, the line from the water main to the meter. Additional information and detail is contained in the City's Technical Memorandum No. 1 - *Post-Fire Water Quality Investigation: Analysis of Cause of Water Contamination* (TM1).

WATER QUALITY DATA

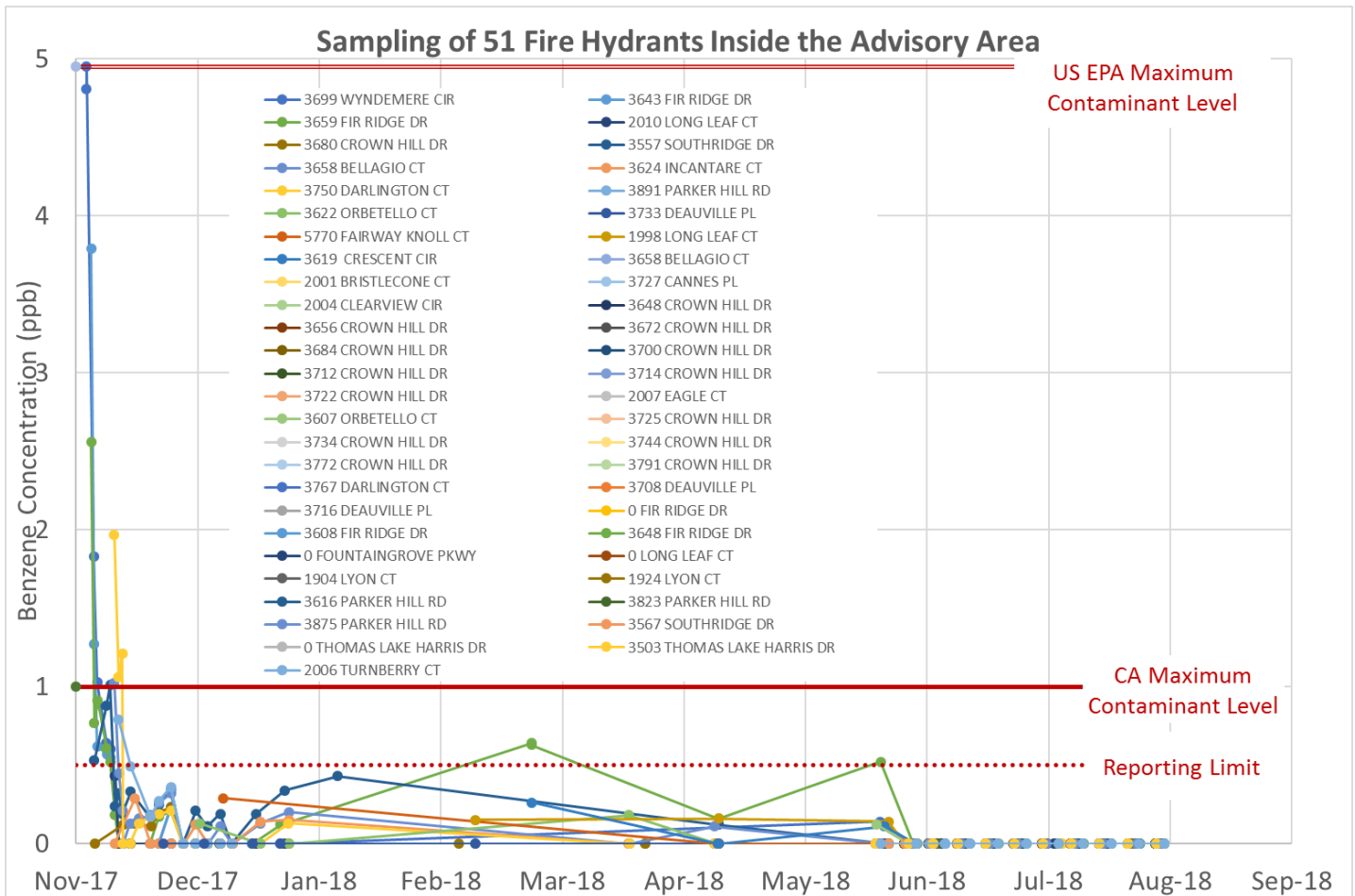
The City has been providing and reviewing updated sampling results with both the DDW and EPA on a weekly basis. The investigation has found the highest levels of contamination in the water service lines. Once this was determined, in mid-January, Santa Rosa water staff isolated water service lines and in some cases entire courts from the water that was being provided to the 13 remaining homes in the advisory area. Once isolated, the weekly sampling of the 13 remaining homes showed the water was below the MCL for benzene and since mid-May the weekly sampling data shows no detectable amounts of benzene. The below graph provides the weekly sampling data:

Weekly Sampling of Surviving Homes Inside the Advisory Area

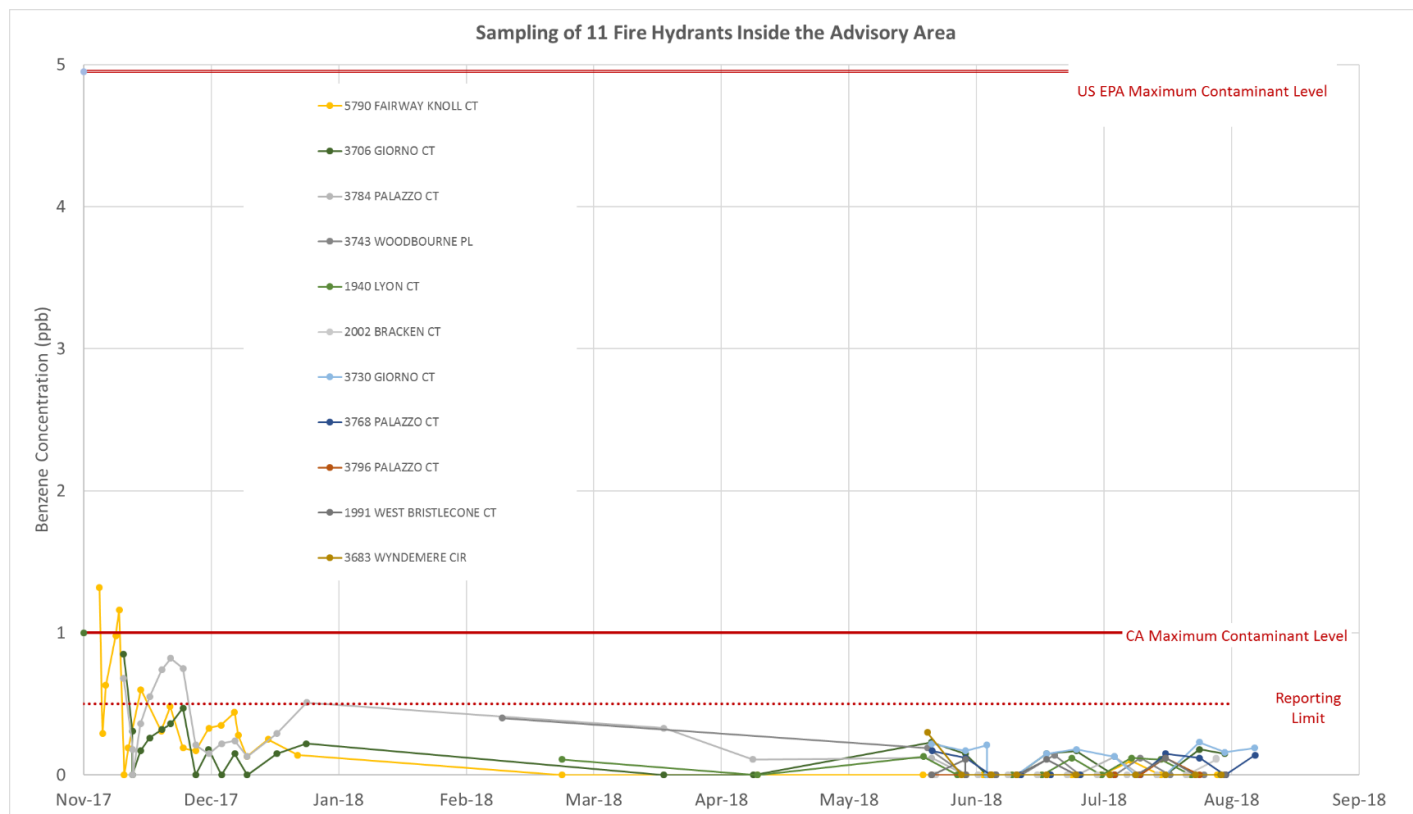


The City has been taking weekly, post flush samples of the 65 hydrants in the advisory area since June 2018 and the weekly sampling data shows that the water from all the hydrants is below the MCL for benzene and the overwhelming majority of the hydrants (51) have no detectable amounts of benzene. Eleven of the hydrants have minimal levels of benzene, on an infrequent basis, below 0.5 ppb and three of the hydrants have minimal levels of benzene at or just below 0.5 ppb. The below graphs provide the weekly sampling data:

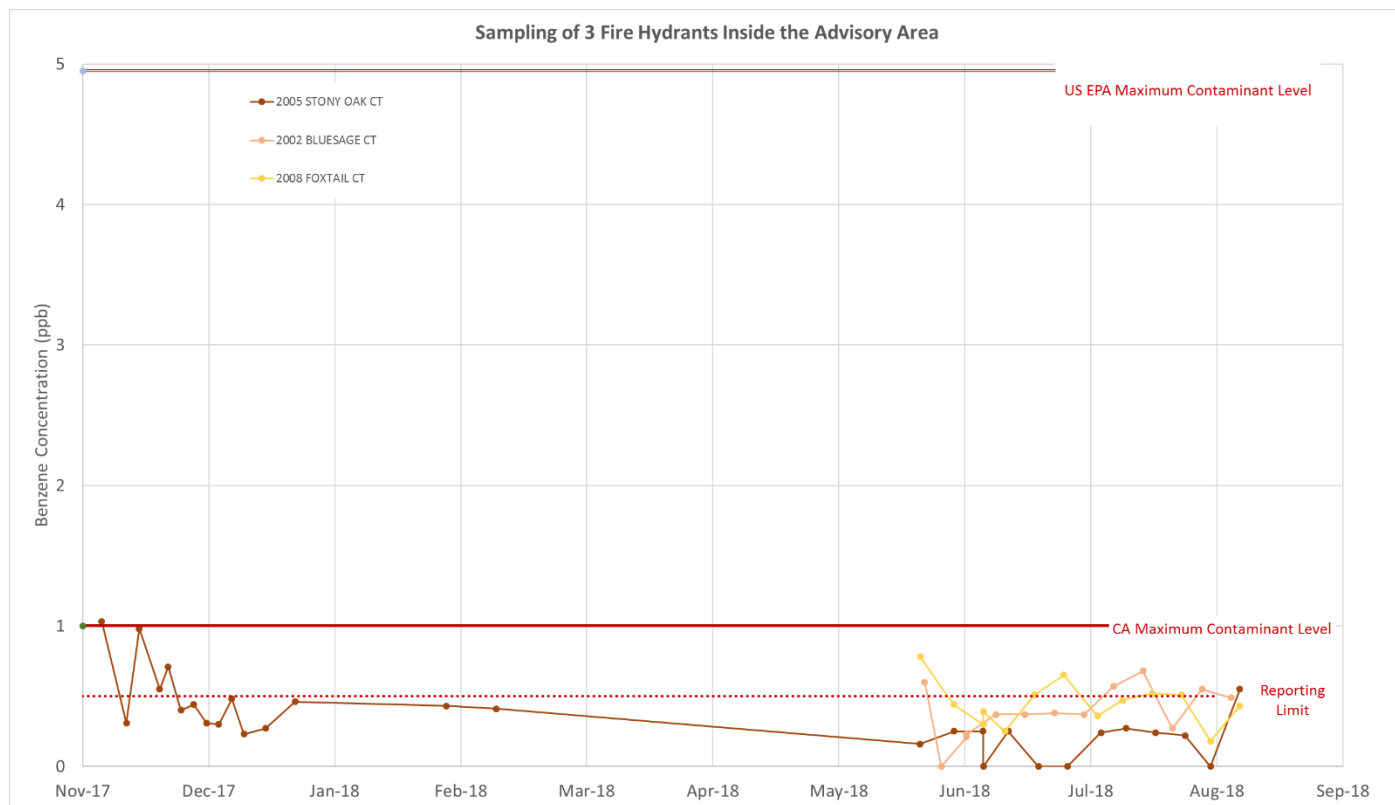
Weekly Sampling of 51 Hydrants with No Detects of Benzene in the Advisory Area



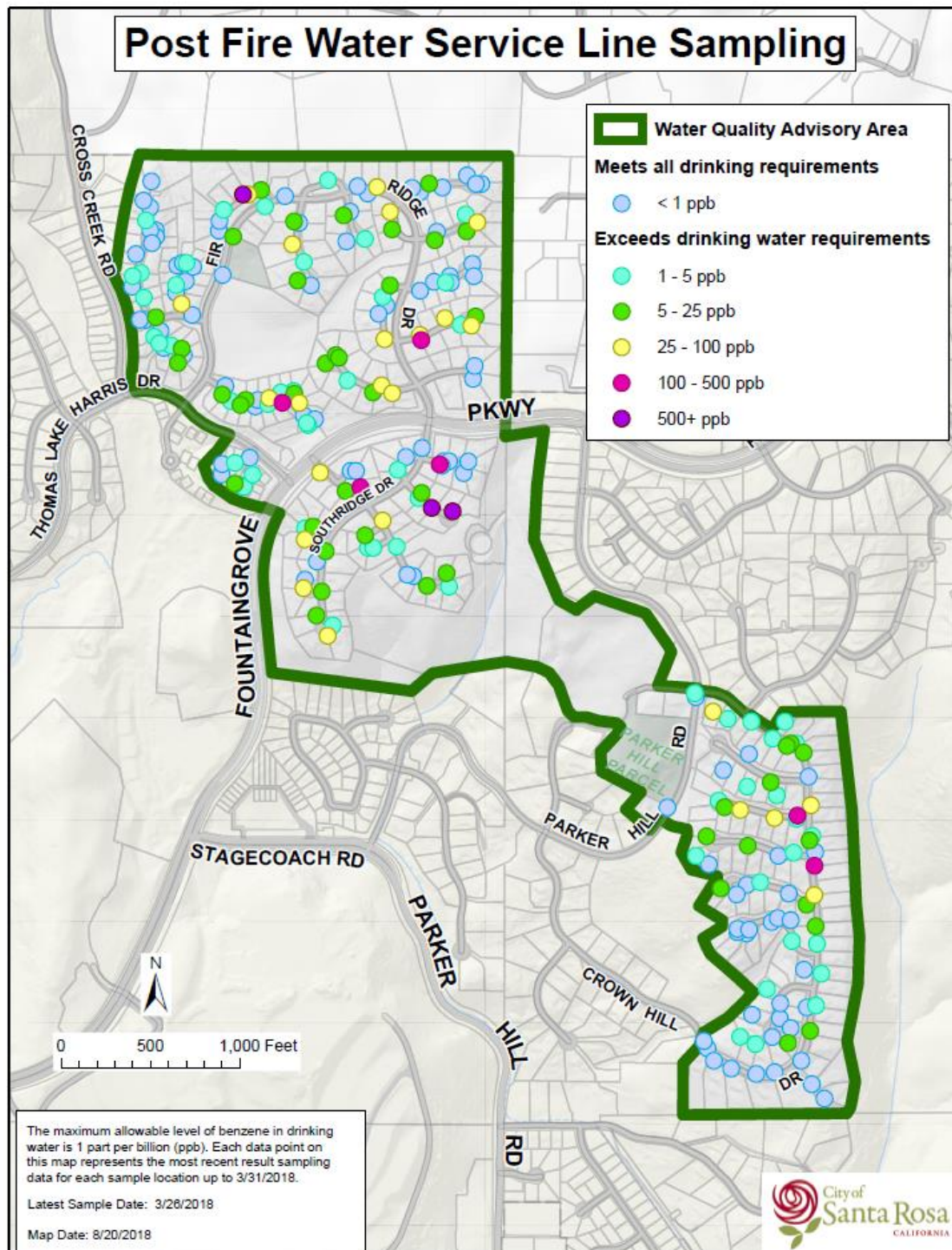
Weekly Sampling of 11 Hydrants with Minimal Detects of Benzene in the Advisory Area



Weekly Sampling of 3 Hydrants with Detects at Benzene Reporting Limit in the Advisory Area



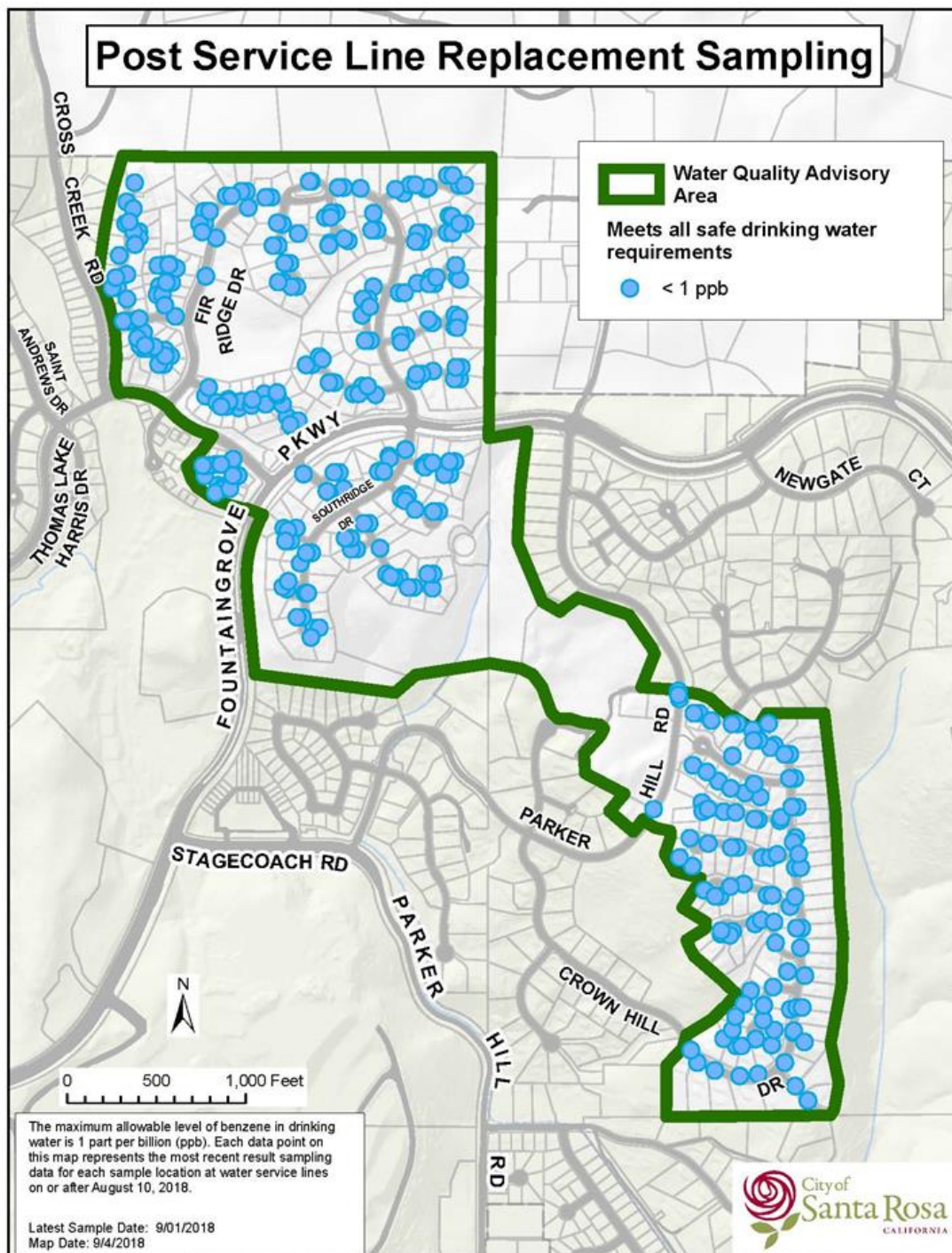
The City sampled every service line in the advisory area and the data showed benzene contamination ranging from Non-Detect to 918 ppb. The map below provides the initial sampling data of each service line:



The City has replaced all water service lines to the 352 properties in the Advisory Area with 1" poly coated copper and will be sample each service to confirm the contamination has been remediated. The

map below provides sample data for the service lines that have been sampled through August 20, 2018. All service lines will be sampled by September 5, 2018.

The City has replaced the water mains on Stony Oak Ct, Bluesage Ct, and Foxtail Ct.



CONTAMINATION RESOLUTION AND LIFTING THE ADVISORY

The City has replaced all water service lines to the 352 properties in the advisory area with 1" poly coated copper, replaced all blow-offs in the advisory area, replaced eight hydrants and three sections of water main, where contamination has been found.

To confirm the contamination has been remediated and the water quality meets all State and Federal regulations, the City will do the following:

1. Sample all service lines for Volatile Organic Compounds (VOCs) after they have been replaced. Service lines will be replaced, flushed and will sit for seven days before being sampled. Samples will be first draw samples.
2. Re-sample 10% of the service lines to confirm results. Service lines will sit for seven days before being sampled and samples will be first draw samples.
3. Once all service line and blow off replacement is complete, conduct weekly sampling of hydrants for 4 weeks. Samples will be post flush samples.
4. All results meet State and Federal regulations, lift advisory.

COMMUNICATING PROBLEM CORRECTED – ADVISORY LIFTED

To ensure the community is fully informed, the City will share the water quality data and this plan with the public at a Special City Council meeting on Friday, September 7th and at a community meeting on September 19th at the City's Utilities Field Office, located at 35 Stony Point Road, to gather feedback and answer questions. At a Board of Public Utilities meeting on Thursday, September 20th, the City will share post construction water quality data and inform the community that the advisory will be lifted.

The City will issue press releases providing information on the meetings and the plan for lifting the advisory, as well as through our e-newsletter, will post on the City's dedicated water quality advisory website – srcity.org/WQAdvisory, and on the City's social media sites. The City will provide a Problem Corrected Notice to each of the homes in the advisory area as a door hanger and will send the notice to each of the properties in the advisory area. Per the DDW Unsafe Water Notification Guidance (April 2018), the City will notify the following agencies that the problem has been corrected: DDW, State Water Board Office of Public Affairs and Duty Officer, California Department of Public Health Duty Officer, Sonoma County Health, and Sonoma County Environmental Health Department. The City will also provide information to US EPA Region 9.

POST ADVISORY VOC MONITORING

After the Advisory has been lifted, to ensure the contamination has been remediated and will not re-occur over time, Santa Rosa Water will implement the following sampling protocol for VOCs:

- The first two months following lifting of the advisory - sample all 65 hydrants and three sample stations in the advisory area for VOCs every two weeks.
- Months three through six following lifting of the advisory - sample all 65 hydrants and three sample stations in the advisory area for VOCs once per month
- Month six through twelve following the lifting of the advisory - sample all 65 hydrants and three sample stations in the advisory area for VOCs once per quarter
- One year following the lifting the of the advisory – return to regulatory requirement of quarterly sampling of VOCs, which will include a sample from two sample stations in the advisory area.

The City will provide and review sample results with the DDW on a routine basis based on the sampling frequency outlined above.

POST ADVISORY FLUSHING

To ensure the contamination has been remediated and will not re-occur over time, as well as water quality and chlorine residual is maintained, Santa Rosa Water will implement the following flushing protocol:

- All flushing will be done in accordance with the Best Management Practices (BMP) for Flushing Mains thru Blow-offs or Hydrants Inside the Fire Impacted Areas
- All flushing activity shall be documented, including metered water loss.
- Water volumes flushed shall be in accordance of the BMP and consist of twice the volume of water replacement per segment flushed.
- Flushing frequency shall be done in a manner that maintains adequate chlorine residuals for water quality.