



FOLSOM
DISTINCTIVE BY NATURE

Agenda

Utility Commission Regular Meeting

City Council Chambers | 50 Natoma Street, Folsom CA 95630

November 17, 2020

6:30 PM

REGULAR UTILITY COMMISSION AGENDA

Pursuant to Governor Newsom's Executive Order N-29-20, members of the Folsom City Utility Commission and staff may participate in this meeting via teleconference.

Due to the coronavirus (COVID-19) public health emergency, the City of Folsom is allowing for remote public input during City Utility Commission meetings. Members of the public are encouraged to participate by emailing comments to ucadmin@folsom.ca.us. Emailed comments must be received no later than thirty minutes before the meeting and will be read aloud at the meeting during the agenda item. Please make your comments brief. Written comments submitted and read into the public record must adhere to the principles of the three-minute speaking time permitted for in-person public comment at City Utility Commission meetings. Members of the public wishing to participate in this meeting via teleconference may email ucadmin@folsom.ca.us no later than thirty minutes before the meeting to obtain call-in information. Each meeting may have different call-in information. Verbal comments via teleconference must adhere to the principles of the three-minute speaking time permitted for in-person public comment at City Utility Commission meetings.

Members of the public may continue to participate in the meeting in person at Folsom City Hall, 50 Natoma Street, Folsom, CA while maintaining appropriate social distancing.

CALL TO ORDER

ROLL CALL - Utility Commission Members: D. Groat, R. Hess, D. Kozłowski, M. Moore, B. Mutchler, T. Rood, and T. Widby

REPORT ON POSTING OF AGENDA

Agendas for the Utility Commission are posted at the Folsom City Hall and City website. (Pursuant to California Government Code Section 54954.2, the agenda for this meeting was properly posted on or before 6:30 p.m. on November 13, 2020.)

BUSINESS FROM THE FLOOR

This item is intended for comments or suggestions from the public for presentation to the Utility Commission. Any matters discussed before the Utility Commission which are not on the agenda cannot be acted upon by the Commission.

MINUTES

1. Approval of the Minutes of the October 20, 2020 Regular Meeting

DIRECTOR REPORT

OLD BUSINESS

1. Pinhole Leaks Update

NEW BUSINESS

1. Wastewater Collections and COVID-19

Approved by:

Bob Mutchler, Chair

<u>Future Meetings</u>			
December 15, 2020	6:30 pm	Regular Meeting	City Hall
January 19, 2021	6:30 pm	Regular Meeting	City Hall

Copies of the written documentation relating to each item of business described above are on file in the Environmental and Water Resources Department, Folsom City Hall, 50 Natoma St., Folsom, California and are available for public inspection during regular office hours which are 8:00 a.m. to 5:00 p.m., Monday through Friday. We request advance notification to facilitate your requests. Copies of documents may be purchased for \$0.10 per page.

Pursuant to State law, this agenda was posted at least 72 hours prior to the meeting at the Folsom City offices, and City website. The City Hall phone number is 916-461-6000. To contact City Hall using a telecommunication device for the deaf (TDD), please call (800) 735-2929 and an operator will assist you.

In compliance with the Americans with Disabilities Act, if you need special assistance to participate in this meeting, please contact the Environmental and Water Resources Department at 916-461-6162. Notification 48 hours prior to the meeting will enable the City to make reasonable arrangements to ensure accessibility to this meeting.

Please mute or turn off cellular phones, tablets, and other electronic devices during the meeting.



FOLSOM
DISTINCTIVE BY NATURE

Utility Commission Regular Meeting Draft Minutes

City Council Chambers | 50 Natoma Street, Folsom CA 95630
October 20, 2020
6:30 PM

Pursuant to Governor Newsom's Executive Order N-29-20 and as noticed on the meeting agenda, members of the Utility Commission and staff may participate in this meeting via teleconference.

Call to Order

Chair Mutchler called the meeting to order at 6:30 p.m.

Roll Call

PRESENT: B. Mutchler, D. Kozlowski, T. Widby, D. Groat, M. Moore, T. Rood

ABSENT: R. Hess

STAFF PRESENT: Marcus Yasutake: Environmental and Water Resources Director
Emma Atkinson: Administrative Assistant, EWR

Business from the Floor

None

Minutes

Approval of the Minutes of the September 15, 2020 Regular Meeting.

Commissioner Rood motioned to accept the minutes.

Commissioner Widby seconded the motion.

Motion carried with the following vote:

AYES: Commissioners Mutchler, Kozlowski, Groat, Moore,

ABSENT: Commissioner Hess

Director's Report

Director Yasutake reviewed rules relating to COVID-19 and attendance in person at Utility Commission meetings.

Old Business

Copper Pipe Pinhole Leaks:

Director Yasutake presented an update on the copper pipe pinhole leaks occurring in Folsom, matching that given a week ago to City Council. Director Yasutake responded to questions from the Commission and gave notice that there will be an additional

presentation to City Council next week to share information from the reports from Black and Veatch and Virginia Tech University, which includes water quality analysis and pipe forensics analysis.

New Business

Environmental and Water Resources Risk Assessment and Mitigation:

Director Yasutake presented information on potential risks to department operations, associated measures for mitigation, and responded to questions.

Adjournment

Meeting adjourned at 8:24pm

Respectfully Submitted:

Emma Atkinson, Administrative Assistant.

Approved:

Bob Mutchler, Utility Commission Chair.

DATE: November 9, 2020
TO: Utility Commissioners
FROM: Marcus Yasutake, Environmental and Water Resources Director
SUBJECT: **PRESENTATION ON COPPER PIPE PINHOLE LEAKS - UPDATE**

BACKGROUND

Environmental and Water Resources Director, Marcus Yasutake, will present updated information related to the copper pipe pinhole leaks occurring within residences and businesses. The discussion will include the water quality evaluation completed by Black & Veatch and the pipe forensics analysis completed by Virginia Tech University.

ACTION

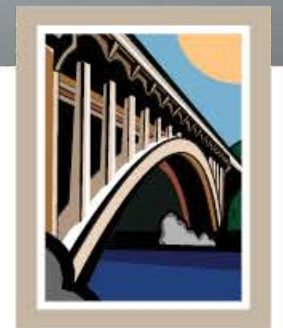
No action needed.



Utility Commission

Copper Pinhole Leaks – Consultant Report

November 17, 2020



CITY OF
FOLSOM

Consultant Analysis



CITY OF
FOLSOM

- Water Quality Analysis – Black & Veatch
 - Examined 10 years worth of City data
 - Chlorine, pH, sulfates, alkalinity, water hardness, metals
 - Regulatory compliance – State and Federal Drinking Water Standards
 - Specifically Lead and Copper Rule (LCR)
- Pipe Forensics Analysis – Virginia Tech
 - Pipe scale imagery
 - Associated elemental composition of the pipe scale
 - Percent composition of the scale

Lead and Copper Rule



CITY OF
FOLSOM

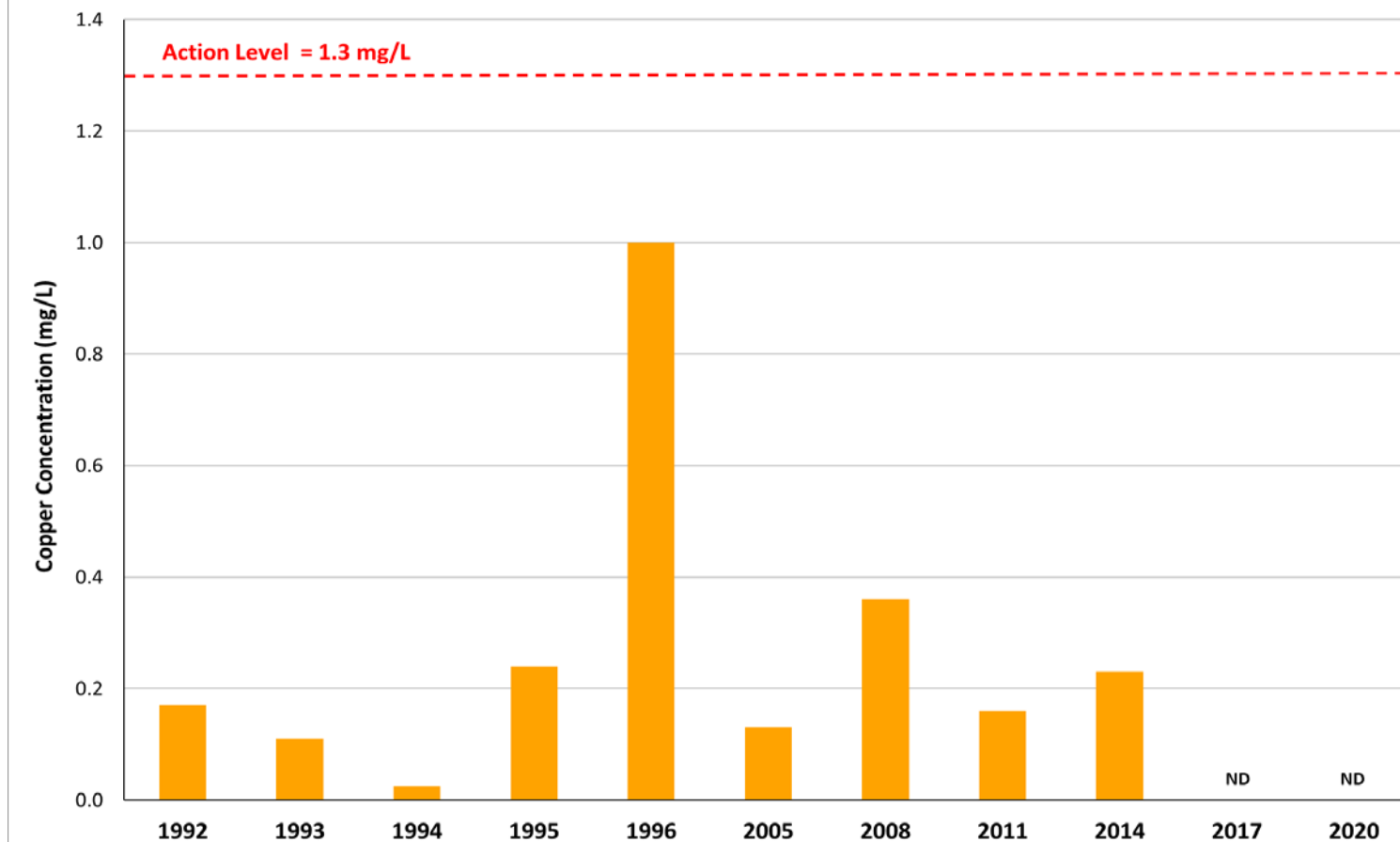
- 1986 Safe Drinking Water Act
 - Lead free plumbing – less than 8% lead content
- 1991 Lead and Copper Rule
 - Ensure lead and copper not leaching into drinking water
 - City required to sample 30 homes built before 1986
 - City selected over 50 homes to sample
- 2014
 - Rule updated to less than 0.2% lead content
- City qualified for triennial monitoring due to good results
 - Recent LCR sampling occurred in July 2020

LCR Results

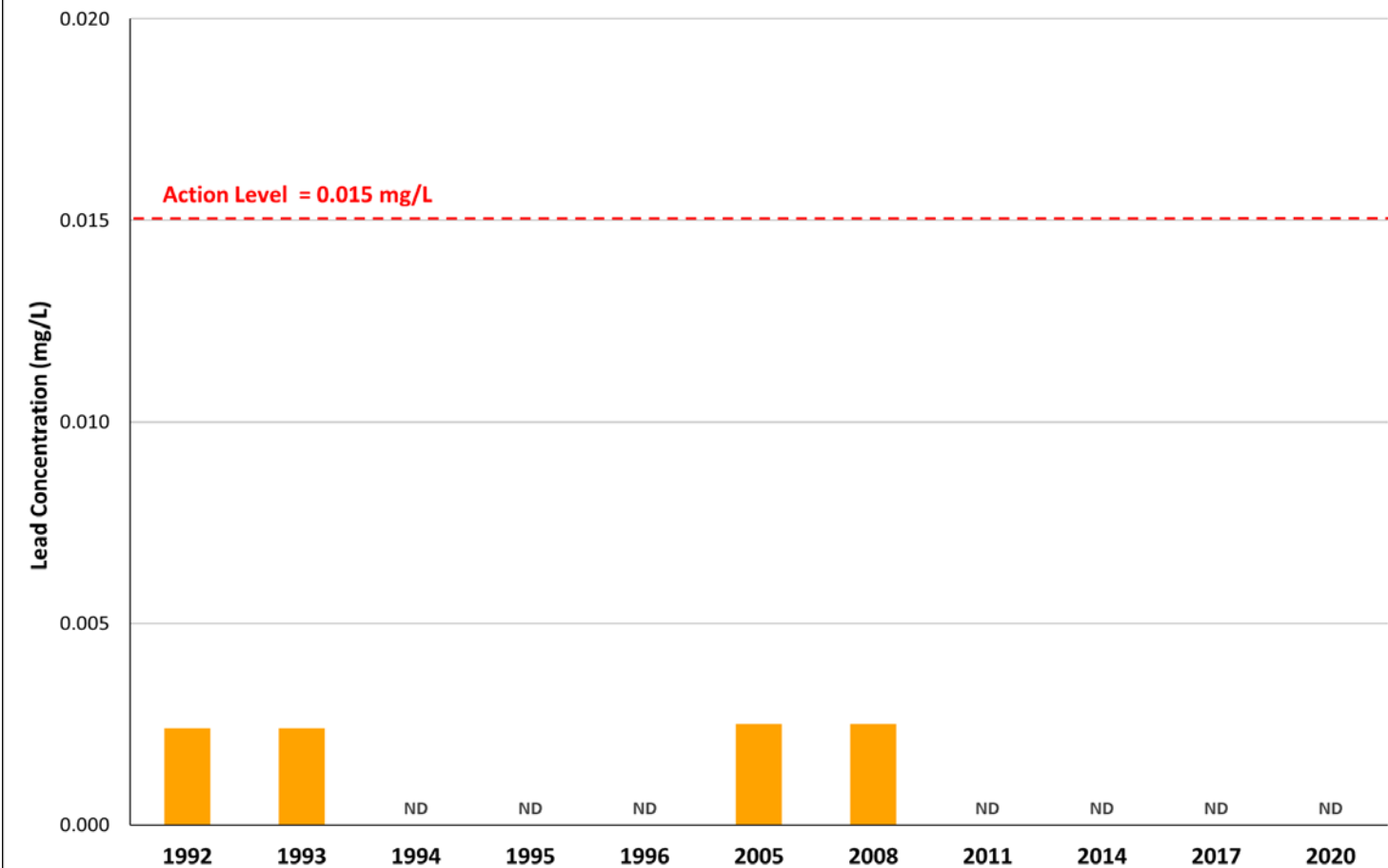


CITY OF
FOLSOM

Lead and Copper Rule Compliance Monitoring
90th Percentile Copper Levels



Lead and Copper Rule Compliance Monitoring
90th Percentile Lead Levels



City is in compliance and below the maximum contaminant limits (MCL) under the LCR

Water Quality Analysis – Key Parameters



CITY OF
FOLSOM

ANALYTE	UNITS	MIN	5 TH PERCENTILE	AVERAGE	95 TH PERCENTILE	MAX	SECONDARY MCL
pH ¹	Standard units	6.1	7.1	8.2	9.2	10.45	6.5-8.5
Alkalinity ²	mg/L as CaCO ₃	18	18	25	34	35	–
Hardness ²	mg/L as CaCO ₃	12	17	23	31	33	–
Total Dissolved Solids (TDS) ²	mg/L	24	34	47	59	70	500
Calcium ²	mg/L	3.5	4.6	6.3	8.3	9.3	–
Magnesium ²	mg/L	1.1	1.1	2.0	3.0	4.8	–
Chloride ²	mg/L	3.3	3.5	5.3	9.2	9.9	250
Sulfate ²	mg/L	0.5	1.1	2.3	3.5	11	250
Chlorine Residual ⁴	mg/L Cl ₂	0.1	0.8	1.1	1.5	2.0	MRDL: 4.0
Total Organic Carbon, TOC ²	mg/L	0.6	0.7	1.0	1.5	1.8	–
Calculated Corrosion Indicators							
Langelier Saturation Index, LSI ³		-2.3	-2.1	-1.2	-0.3	-0.2	Noncorrosive

Secondary MCL: Secondary Maximum Contaminant Level

MRDL: Maximum Residual Disinfectant Level

¹ Data collected from online analyzers from 2016-2020

² Data collected from select grab samples from 2010-2020

³ Data collected from select grab samples from 2016-2020

⁴ Data collected from daily log sheets 2010-2020 at Tower Reservoir (located near entry point in the distribution system)

Water Quality Analysis - Findings



CITY OF
FOLSOM

- pH typically in the 8-9 range with a low of 6 and a high of 10.4
- Source water is very pure:
 - Low alkalinity
 - Low hardness
 - Low calcium
 - Low total dissolved solids
- Chlorine residuals leaving treatment plant sufficient to maintain residual in the distribution system
- Limited buffering capacity of City's finished water due to source water purity
- Langelier Saturation Index (LSI) – corrosion indicator for water and appropriate to use for pH adjustments

Buffer Capacity



CITY OF
FOLSOM

- Buffering capacity describes the water's ability to resist changes in pH
- Due to the City's water purity, only a small dosage of lime is needed to increase the pH of the City's water
- Treatment pH adjustment
 - Based on LSI (average is -1.2 for City's finished water)
 - Adjust lime dosage to keep LSI from decreasing
 - Successful in meeting LCR

Langelier Saturation Index



CITY OF
FOLSOM

- LSI is a corrosion indicator used to adjust finished water quality parameters
- Determined using a calculation that includes pH, alkalinity, calcium, total dissolved solids (TDS), and temperature
- Due to the purity of the City's source water, the alkalinity, calcium and TDS are very low, which results in a negative LSI
- Negative LSI indicates water is deficient in minerals
- Positive LSI indicates water is over saturated with minerals
- Neutral LSI is in the range of 0.5 to -0.5
- City LSI average is -1.2

pH Analysis



CITY OF
FOLSOM

- Seasonal fluctuations observed (pH lower in summer) in source water
- System pH can become variable
 - Water temperature
 - Interaction with pipe surfaces
 - Residual lime in distribution system reservoirs
- Finished water pH fluctuations begin in 2017
 - 2016 permit amendment for pH adjustment based on LSI
- Finished water pH typically around 8.5
- Due to LSI and low buffering capacity, pH became more variable

Pipe Scale Analysis



CITY OF
FOLSOM

- 8 pipe samples delivered to Virginia Tech
- Physical tests conducted
 - Inductively coupled plasma mass spectrometry (ICP-MS)
 - Electron scanning microscopy with X-Ray energy dispersive system (EMS-EDS)
- Tests show elemental composition of pits and percent composition by weight
- Sulfide “spot test” ruled out sulfide reducing bacteria
- Tests indicate that the copper pipe is not defectively thin

Copper Pitting



CITY OF
FOLSOM

- Pitting corrosion localized at specific sites
- Pitting involves removal of copper ions from the specific site
- Scale is blue/green in color
- Pit becomes more acidic when ions are removed
- Pit tries to draw in chloride and sulfate ions to balance electrons
- Process makes the pit salty (increases corrosivity)

Consultant Conclusions



CITY OF
FOLSOM

- City's treated water meets State and Federal Regulations
- LCR compliance for optimal corrosion control
- Pits are likely copper oxide
- Copper is main element found with trace amounts of other elements, including aluminum
 - Aluminum concentrations of 0.5 % or more by weight can catalyze copper pitting in very clean water
- Aluminum below National Secondary Drinking Water Regulation of 0.20 ppm (water samples show "non-detect" leaving treatment plant)
- No evidence of microbial activity
- Sulfide reducing bacteria ruled out

Consultant Conclusions



CITY OF
FOLSOM

- Water with low alkalinity, low calcium, pH above 9 and free chlorine could contribute to pitting:
 - With impurities in the pipe
 - With sediment in the pipe

“Impurities in copper pipes are natural and could be from manufacturing like microscopic burrs, ions other than copper included in the metal, or remnants of cleaning solutions. Storage, transportation, installation, and soldering could all introduce additional impurities, but research studies have shown that while impurities can provide a site to start pitting, their presence is not necessary for pitting to occur in all situations.”

Consultant Recommendations



CITY OF
FOLSOM

- Add orthophosphate to the treatment process
 - Has been shown to inhibit pit initiation
 - Can help slow or even mitigate pit propagation
- Strive to maintain target pH of 8.5
- Start with small increments of orthophosphate
 - 0.1 parts per million (ppm) in the first week (10/8)
 - 0.2 ppm the second week (10/15)
 - 0.3 ppm the third week
- Samples from households in each pressure zone
- Maintenance dose based on results of sampling
- Continue to sample/monitor for Aluminum

Report a Leak, Learn More



CITY OF
FOLSOM

- For questions or to report a pinhole leak:
 - Call 916-461-6190, or
 - Email waterquality@folsom.ca.us
- Pinhole Leak Webpage:
 - www.folsom.ca.us/pinholeleaks
- Community outreach:
 - News media
 - NextDoor
 - Facebook
 - Twitter
 - E-newsletter
 - City website
 - **Direct mailer survey**



CITY OF
FOLSOM

QUESTIONS?

DATE: November 9, 2020
TO: Utility Commissioners
FROM: Marcus Yasutake, Environmental and Water Resources Director
SUBJECT: **WASTEWATER COLLECTIONS AND COVID-19**

BACKGROUND

Environmental and Water Resources Director, Marcus Yasutake, will discuss COVID-19 and efforts undertaken by Regional San for COVID-19 testing at the wastewater treatment plant.

ACTION

No action needed.