WELCOME

DRINKING WATER AND PLUMBING AFTER THE CAMP FIRE

4 – 6 pm: Interactive demonstrations of drinking water sampling, testing, and plumbing

6 – 7pm: Break

7 – 8:30 pm: Purdue University Camp Fire Drinking Water Survey Results

Hosted by

Purdue University
Manhattan College
Paradise Rotary Foundation
Butte College

In collaboration with

Paradise Alliance Church, June 27, 2019, Paradise, California

Live stream 7-8:30PM at https://m.facebook.com/campfirezoneproject
A Community Meeting:  
Drinking Water and Plumbing  
After the Camp Fire

Presentation of the Purdue University and Manhattan College Survey Results

Presented by: Dr. Andrew Whelton and Dr. Caitlin Proctor

June 27, 2019, Paradise, CA
Thank You.

PARADISE ALLIANCE CHURCH
Presentation Overview

- Our team
- Introduction of the incident and response
- Plumbing issues
- Camp Fire drinking water survey results
Our Assistance to You with Partners

- **January 2019**, Contacted by PID for help
- **February 2019**, Visited PID & briefed state, local, & federal agencies for response & recovery recommendations, PlumbingSafety.org webpage established
- **March 2019**, PID public meeting: Issued the Camp Fire Water Task Force scientific opinion about water testing & response
- **March 2019**, Issued Camp Fire Water Task Force scientific opinion about plastic service line decontamination & waste handling
- **May 2019**, Began online drinking water survey
- **June 2019, Today**, Interactive demos & survey result presentation
- **June 2019**, Issued Camp Fire Water Task Force scientific opinion about plumbing testing
Executive Department
State of California

Proclamation of a State of Emergency

WHEREAS on November 8, 2018, the Camp Fire began burning in Butte County and continues to burn; and

WHEREAS this fire has destroyed homes and continues to threaten additional homes and other structures, necessitating the evacuation of thousands of residents; and

WHEREAS the fire has forced the closure of roadways and continues to threaten critical infrastructure; and

WHEREAS high temperatures, low humidity, and erratic winds have further increased the spread of this fire; and

WHEREAS the Federal Emergency Management Agency has approved a Fire Management Assistance Grant to assist with the mitigation, management, and control of the Camp Fire; and

WHEREAS the circumstances of this fire, by reason of its magnitude, are or are likely to be beyond the control of the services, personnel, equipment, and facilities of any single local government and require the combined forces of a mutual aid region or regions to combat; and

WHEREAS under the provisions of Government Code section 8558(b), I find that conditions of extreme peril to the safety of persons and property exist in Butte County due to this fire; and

WHEREAS under the provisions of Government Code section 8571, I find that such compliance with the various statutes and regulations specified in this order would prevent, hinder, or delay the mitigation of the effects of the Camp Fire.

NOW, THEREFORE, I, GAVIN NEWSOM, Acting Governor of the State of California, in accordance with the authority vested in me by the State Constitution and statutes, including the California Emergency Services Act, and in particular, Government Code section 8625, HEREBY PROCLAIM A STATE OF EMERGENCY to exist in Butte County due to the Camp Fire.

IT IS HEREBY ORDERED THAT:

1. All agencies of the state government utilizing and employing state personnel, equipment, and facilities for the performance of any and all activities consistent with the direction of the Office of Emergency Services and the State Emergency Plan. Also, all citizens are to heed the advice of emergency officials with regard to this emergency in order to protect their safety.

2. The Office of Emergency Services shall provide local government assistance to Butte County, if appropriate, under the authority of the California Disaster Assistance Act, Government Code section 8580 et seq., and California Code of Regulations, Title 19, section 2800 et seq.

November 8, 2018

The Incident

Community Public Meeting, June 27, 2019, Paradise, California

153,336 acres
~13,972 residences destroyed
14,793 structures destroyed
85 fatalities
3 firefighters injured
40,000 people were issued a boil water advisory and 2,438 private drinking water wells were impacted.

<table>
<thead>
<tr>
<th>Public Water Systems (% Homes Gone)</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paradise Irrigation District (PID)</td>
<td>26,032</td>
</tr>
<tr>
<td>Del Oro Water Company (DOWC) – 5 Systems</td>
<td>14,008</td>
</tr>
<tr>
<td>Foothill Solar Community</td>
<td>180</td>
</tr>
<tr>
<td>Forest Ranch Mobile Home Park</td>
<td>25</td>
</tr>
<tr>
<td>Forest Ranch Mutual Water Company</td>
<td>92</td>
</tr>
<tr>
<td>Gran Mutual Water Company</td>
<td>202</td>
</tr>
<tr>
<td>Humboldt Woodlands Mutual Water Company</td>
<td>75</td>
</tr>
<tr>
<td>Meadowbrook Oaks Mobile Home Park</td>
<td>50</td>
</tr>
<tr>
<td>Mountain Village Homeowners Association</td>
<td>40</td>
</tr>
</tbody>
</table>
Multiple water distribution systems have chemical contamination, private wells are being tested

1. In addition to benzene, sometimes other volatile organic chemicals (VOCs) have been found in the drinking water

2. In the absence of benzene, other VOCs sometimes exceeded their long-term drinking water exposure limits

3. 2 VOCs have exceeded short-term drinking water exposure limits

4. The VOC source(s) remain unclear. It could be plastic degradation, drawing in contaminated air/materials, both, and/or other possibilities.

5. Plastics are susceptible to VOC permeation and leaching.
## Utility Test Results

Long-term limit for an adult for 70 years
Short-term limit for a 1 year old child for 1 day

<table>
<thead>
<tr>
<th>Chemical that Exceeded a Drinking Water Limit</th>
<th>Camp Fire (6 months after the fire)</th>
<th>Tubbs Fire (11 months after the fire)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PID Del Oro</td>
<td>Santa Rosa</td>
</tr>
<tr>
<td></td>
<td>Max, ppb Max, ppb Exceedance</td>
<td>Max, ppb Exceeded Long-Term Limit? Exceeded Short-Term Limit?</td>
</tr>
<tr>
<td>Benzene</td>
<td>&gt;2,217 NA 46 Yes Yes</td>
<td>40,000 Yes Yes</td>
</tr>
<tr>
<td>Methylene chloride</td>
<td>15 NA Yes No 41 Yes No</td>
<td>41 Yes No</td>
</tr>
<tr>
<td>Naphthalene</td>
<td>693 NA Yes Yes 6,800 Yes Yes</td>
<td></td>
</tr>
<tr>
<td>Styrene</td>
<td>378 NA Yes No 460 Yes No</td>
<td>460 Yes No</td>
</tr>
<tr>
<td>Tert-butyl alcohol</td>
<td>13 NA Yes - 29 Yes -</td>
<td>29 Yes -</td>
</tr>
<tr>
<td>Toluene</td>
<td>676 NA Yes No 1,130 Yes No</td>
<td>1,130 Yes No</td>
</tr>
<tr>
<td>Vinyl chloride</td>
<td>1 NA Yes No 16 Yes No</td>
<td>16 Yes No</td>
</tr>
</tbody>
</table>

*Benzene seems to be the most commonly found*

NA = Results were not available
Community Public Meeting, June 27, 2019, Paradise, California

- Water Main (metal or plastic)
- Corporation Stop
- Fire Hydrant
- Property Service Line (metal or plastic)
- Utility Service Line (metal or plastic)
- Utility Meter

PROPERTY OWNER RESPONSIBILITY

- [2,438 private wells impacted in Butte County, CA]
Objects: Fixtures, pipes, tanks, fittings, valves, gaskets, faucet connectors, water lines, tubing
Materials: Sediment, corrosion scale, biofilm, plastics vs. metals

Hot vs. Cold Water Pipes

Metals and Plastics

Fixtures and Aerators

Corrosion Products

Cold water & hot water DO NOT travel in the same pipes
Why are there plumbing concerns?

ATSDR’s Human Health Concerns
VOC drinking water exposure routes: Inhalation, skin contact, ingestion

Health effects:
Acute
Chronic: Systemic, immunological, neurological, reproductive, developmental, genotoxic, and carcinogenic effects

Most vulnerable populations

California Waterboard & California Department of Public Health Camp Fire Drinking Water Smell Study, March 2019
“Several of the testers noted throat irritation and constriction after smelling the test sample(s) [from PID].”

What can be contaminated?
Faucet connectors, Refrigerator lines
Shower wands, Shower hoses,
Icemaker lines, Water heaters,
Fixtures, Pipes, and more...
Where can VOCs go in plumbing?
On Sunday June 16, Plumbing and Water Experts from 5 Universities Provided Plumbing Testing Advice to the California Waterboard

<table>
<thead>
<tr>
<th>Topic</th>
<th>California Waterboard Guidance to the Public</th>
<th>Guidance from Plumbing and Water Experts from 5 Universities - June 16, 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Before June 14, 2019</td>
<td>After June 14, 2019</td>
</tr>
<tr>
<td>Exposure Pathways Included</td>
<td>Ingestion only</td>
<td>Ingestion only</td>
</tr>
<tr>
<td>Number of Indoor Locations</td>
<td>1, kitchen sink cold water</td>
<td>1, kitchen sink cold water</td>
</tr>
<tr>
<td>Systems to Test</td>
<td>Cold water only</td>
<td>Cold water only</td>
</tr>
<tr>
<td>Stagnation Period Required</td>
<td>None</td>
<td>At least 8 hour</td>
</tr>
<tr>
<td>VOCs to Look For</td>
<td>Benzene only</td>
<td>Benzene only</td>
</tr>
</tbody>
</table>

On June 16, we urged the State revise their guidance because it’s not adequately health protective or been proven to work.
VOC contamination after a wildfire *is* unique, but large-scale water contamination *is not.*

<table>
<thead>
<tr>
<th>Location</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glendive, Montana</td>
<td>5,500</td>
</tr>
<tr>
<td>Butte County, California</td>
<td>40,000+</td>
</tr>
<tr>
<td>Toledo, Ohio</td>
<td>500,000</td>
</tr>
<tr>
<td>Longueuil, Canada</td>
<td>230,000</td>
</tr>
<tr>
<td>Charleston, West Virginia</td>
<td>340,000+</td>
</tr>
<tr>
<td>Santa Rosa, California</td>
<td>6,000</td>
</tr>
<tr>
<td>Washington, D.C.</td>
<td>100</td>
</tr>
<tr>
<td>and more...</td>
<td></td>
</tr>
</tbody>
</table>
We will post a copy of these presentations at www.PlumbingSafety.org

Dr. Proctor will now present the survey results.

We will field questions after her presentation.

Follow-up questions can be directed to awhelton@purdue.edu
The Camp Fire Community Assessment – Drinking Water Survey

Funded by Purdue University and Manhattan College
Approved by the Purdue University Institutional Review Board – Proposal #: 1904022050
Purpose of the Survey

To provide the community and officials insight into how the fire has impacted the attitudes and experiences related to DRINKING WATER of people living in or who own standing homes.
Approach

Online survey conducted because many people were displaced (not physically at home)

The survey was open for 2 weeks, May 1 to May 14, 2019

Many community members contributed to alpha and beta testing before the survey was publicly available
Limitations and Strengths

Results are a snapshot in time

The survey was advertised to some individuals who had expressed concern about water contamination

Respondents are self selected
Acronyms and Definitions

Paradise Irrigation District (PID)
Del Oro Water Company (DOWC)
Butte County Health Department (BCHD)
Do Not Know (DNK)

Water Main
Water Meter
Service Lines
Survey Results

- Who Responded
- Perceptions and Experiences
- Impacts and Actions
- Moving Forward
- Outcomes and Recommendations
Who Responded
Who Responded

Survey Validation
90 questions
Average time to complete
  was 33 minutes*
1 survey = 1 standing home
325 surveys started
241 completed (>95%)
233 validated and used
At least 605 people represented

Respondents
70% Female, 25% Male, 5% PNTA
Average age 57
  Range 23-93 years old
59% had at least 1 person employed

*Outliers excluded
<table>
<thead>
<tr>
<th>Type of Home</th>
<th>Relationship to Home</th>
</tr>
</thead>
<tbody>
<tr>
<td>85.8% House</td>
<td>87.6% Own</td>
</tr>
<tr>
<td>9.0% Manufactured Home</td>
<td>6.4% Rent</td>
</tr>
<tr>
<td>1.3% Apartment</td>
<td>6.0% Occupy</td>
</tr>
<tr>
<td>1.3% RV</td>
<td></td>
</tr>
<tr>
<td>0.9% Condo</td>
<td></td>
</tr>
<tr>
<td>0.9% Townhouse</td>
<td></td>
</tr>
<tr>
<td>0.9% Other</td>
<td></td>
</tr>
</tbody>
</table>
Who Responded

Water Source Before Fire
68.2% PID
24.5% DOWC
7.3% Private Well

Location of Home

- 22.7% Magalia
- 0.9% Concow
- 70.8% Paradise
- 0.4% Butte Creek Canyon
- 2.6% Outside Town Limits
- 2.6% Yankee Hill
When did respondents move back?

63 of the 233 homes were unoccupied

Evacuations lifted

Within occupied homes, nearly all adults (95.4%) and children (95.8%) have returned
Some stated that they planned to return (12.4%), others stated that they are undecided (6.9%), and a few stated that they will never be returning (3.0%).

OTHERS are waiting for safe water and/or cleaning and rebuilding.
Perceptions and Experiences
Have you heard that drinking water in places affected by the Camp Fire may have been chemically contaminated?”

Yes, 97.9%
How do you perceive organizations providing information?

Drinking water providers were perceived the most positively followed by the county.
Prior to the survey were you aware that...

The PID advised their customers to "...not rely on a home filtering method without continued water testing and maintenance." Issued Feb 25, 2019

Yes, 82.4%
Prior to the survey were you aware that...

The Butte County Health Department issued the following statement: “Information from water authorities indicates the possibility that contamination may be present in home plumbing systems, and therefore, residents should not rely on home water filtration systems as they may not be adequate to provide needed protection. Due to the possibility of contamination, residents should not use tap water for drinking, cooking, food preparation, brushing teeth or similar activities.” Issued March 19, 2019

Yes, 85.8%
Prior to the survey were you aware that...

The State Water Resource Control Board recommended that Butte County consider "...that all lots with fire damage and structures that burned should have their water service line from the structure to the meter replaced upon rebuilding. This includes temporary residences such as trailers, 5th wheels, or recreational vehicles (RVs).”

Issued February 8, 2019

No, 61.8%
Since the Camp Fire, did anyone in your household have any anxiety, stress, or depression that he/she felt was SPECIFICALLY related to the Camp Fire drinking water contamination topic? (n = 233)

Many households reported that *at least 1 person* experienced anxiety, stress, or depression related to the Camp Fire drinking water contamination topic.
Since the Camp Fire, did anyone in your household have any illness that he/she felt was related to the drinking water? (n = 233)

4.7% reported experiencing an illness in the household

18.5% did not know if an illness that did occur was due to drinking water

Most Common Symptoms
- Headache
- Cough
- Skin Irritation

Most Common Forms of Care
- Primary Care Physician
- No Action
How many **days of work have been missed** by all employed persons in the household? (n = 233)

48.5% missed at least 1 day of work due to ANY standing home issue after the Camp Fire (average = 27 days of work missed)

20.6% of standing homes had someone miss work because of a **DRINKING WATER ISSUE** (average = 4 days of work missed)
Do you believe the Camp Fire caused chemical contamination of the home's COLD WATER? (n = 233)

PID customers were more likely to report water as contaminated.

Many do not know if the water entering the home is contaminated.
Impacts and Actions
Since the Camp Fire, has anyone **CHEMICALLY** tested the drinking water inside the standing home?  \((n = 233)\)

<table>
<thead>
<tr>
<th>PID</th>
<th>DOWC</th>
<th>Private Well</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homes that did in-home testing</td>
<td>40.3%</td>
<td>15.8%</td>
</tr>
<tr>
<td>Belief in cold water chemical contamination?</td>
<td>YES</td>
<td>NO</td>
</tr>
</tbody>
</table>
11% to 88% of households chose to **STOP** certain water use activities

<table>
<thead>
<tr>
<th>Activity</th>
<th>COLD Water Use</th>
<th>HOT Water Use</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PID</td>
<td>DOWC</td>
</tr>
<tr>
<td></td>
<td>n = 159</td>
<td>n = 57</td>
</tr>
<tr>
<td>Drinking</td>
<td>81%</td>
<td>42.0%</td>
</tr>
<tr>
<td>Handwashing</td>
<td>49%</td>
<td>11.8%</td>
</tr>
<tr>
<td>Teeth Brushing</td>
<td>78%</td>
<td>29.6%</td>
</tr>
<tr>
<td>Washing Clothes</td>
<td>43%</td>
<td>11.3%</td>
</tr>
<tr>
<td>Bathing</td>
<td>77%</td>
<td>25.6%</td>
</tr>
<tr>
<td>Showering</td>
<td>59%</td>
<td>25.6%</td>
</tr>
</tbody>
</table>

PID customers had greatest reduction in water use activities

75.4% of homes that continued drinking water used filtration
AFTER the Camp Fire, where has the household obtained DRINKING water?

36.1% obtained water from a distribution center in town

Less than 6% obtained water from a
- Gas Station/Convenience Store
- Outdoor Tank
- Home Filter
- Rainwater System
- Onsite Well
Since the Camp Fire, has the household received FREE or PURCHASED bottled water for drinking? \( (n = 233) \)

- **Received FREE bottled water**
  - PID: 60%
  - DOWC: 40%
  - Private Well: 80%

- **PURCHASED bottled water**
  - PID: 40%
  - DOWC: 60%
  - Private Well: 20%

**Average** weekly bottled water use per home was **13.6 gal**

**Average** total spent on bottled water to date was about **$260**

Income level **DID NOT** influence the amount of bottled water a household received or purchased.
Outdoor water tanks were installed at some standing homes after the fire to provide drinking water.

Average cost to install a water tank was about $2,450. Average delivery frequency was about every 17 days. Average cost of a tank delivery was about $200.

7.5% of responding PID customers used a water tank to provide water to the home plumbing pipes for all activities.

For 41.7% of homes that invested in tanks, the insurance company paid all or some of the costs of purchasing and/or installing a water tank and routine delivery to the water tank.
Did you install a whole house or under sink filtration system after the Camp Fire?

<table>
<thead>
<tr>
<th></th>
<th>PID</th>
<th>DOWC</th>
<th>Private Well</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whole House Filter</td>
<td>n = 159</td>
<td>n = 57</td>
<td>n = 17</td>
</tr>
<tr>
<td>Under Sink Filter</td>
<td>37.7%</td>
<td>5.3%</td>
<td>17.6%</td>
</tr>
<tr>
<td></td>
<td>17.0%</td>
<td>1.8%</td>
<td>0%</td>
</tr>
</tbody>
</table>

68 of 233 standing homes had treatment installed:
- 66 whole house filters cost about $152,000 - $284,000 ($2,300 - $4,300 each)
- 28 under sink filters at a cost of about $34,000 - $76,000 ($1,200 - $2,700 each)

Total Cost: $186,000 - $360,000

Income level **DID NOT** influence the decision to conduct water testing or install a treatment device.
Moving Forward
OPINION: Who do you think is most responsible for TESTING THE WATER INSIDE the standing home after the Camp Fire to determine if the plumbing is safe?

Below 5% selected:
- Local/County Authority
- State Agency
- Federal Agency
OPINION: Who do you think is most responsible for determining which water tests are needed after the Camp Fire for testing a standing home's plumbing to determine if it is safe?

Below 5% selected:
- Local/County Authority
- State Agency
- Federal Agency
How was water sampling conducted after the fire?

- **34.3%** conducted in-home water testing

  Water samples were collected by:
  - Someone living in the home (41.3%)
    - Water treatment device company representative (33.8%) [all in PID area]
    - A commercial laboratory (20.0%)
    - Other individuals (15.0%)
  - When water samples were collected from someone living in the home, testing information (**how to collect samples and what contaminants to test for**) usually came from **water testing laboratories**
OPINION: Who do you think is most responsible for REPAIRING PLUMBING INSIDE a standing home after the Camp Fire if the plumbing is found to be chemically contaminated - not safe?

Below 5% selected:
- Local/County Authority
- State Agency
- Federal Agency
Is there **PHYSICAL** damage to the standing home’s …?

Most standing homes (49.1% - 91.2%) reported NO physical damage occurred to the outdoor plumbing system.
Is there **CHEMICAL contamination** of the standing home’s ...?

A majority (59.6% - 89.3%) do not know if their meter or service line is chemically contaminated.
Is damage to the plumbing system INSIDE (or OUTSIDE) the standing home covered under the standing home's insurance? (n = 233)

A majority believe that the insurance company should be responsible for repairing plumbing inside the home (64.8%), but most do not know if the insurance company will cover it (60.1%).
Outcomes and Recommendations
Outcomes

A sizeable number of respondents reported experiencing anxiety, stress, and depression related to the topic of drinking water contamination.

Residents indicated that it is unknown if water or plumbing system for the home is contaminated.

Organizations that provided information were generally not perceived as clear, helpful, or trustworthy.

Residents have faced high financial and logistical costs to cope with drinking water and plumbing contamination.

A large number of people have invested into in-home water treatment and storage technologies – potentially estimated at $7 million dollars.
<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Recommended Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>anxiety, stress, and depression</td>
<td>Addressing drinking water concerns should <strong>reduce these symptoms</strong></td>
</tr>
<tr>
<td>unknown if water and plumbing systems are contaminated</td>
<td><em>The state should develop and field validate evidence based plumbing testing procedures that can identify contaminated plumbing; Also identify who will conduct testing and who will pay for it</em></td>
</tr>
<tr>
<td>not perceived as clear, helpful, or trustworthy</td>
<td>Organizations should <strong>provide greater transparency</strong> with decisions and data so that the public can access it</td>
</tr>
<tr>
<td>high financial and logistical cost</td>
<td>Insurance companies should <strong>clarify coverage plans.</strong> State should consider insurance gaps.</td>
</tr>
<tr>
<td>Invested estimated $7M in home water treatment and storage technologies</td>
<td>Due to public health implications, <strong>formal independent oversight is needed</strong> for technology selection, maintenance, and operation</td>
</tr>
</tbody>
</table>
Thank you for your time!

When the complete data is available we will post it on PlumbingSafety.org

We are happy to answer questions.
whelton@purdue.edu
Comments from survey takers:

“Going to Chico for showers is a real pain!”
Comments from survey takers:

“I work in Magalia and will live in Paradise. I have been in a trailer on our friend's property in Chico for 6 months. This does not work for my family”

PlumbingSafety.org • awhelton@purdue.edu
Comments from survey takers:

“I’m completely stressed and worried about what our inside plumbing and water heater might contain therefore for now we will continue to live in Chico until I’m assured water is complete safe!”
Comments from survey takers:

“The reason I graded the organizations as C's for communications about the water, is because there are so many unanswered questions (especially the timeline for repairs) delaying our rebuilding decisions.”

PlumbingSafety.org • awhelton@purdue.edu
Comments from survey takers:

“The process of trying to move back home has become quite complex and overwhelming a mystery if you will. We don’t know when to test our plumbing, if it’ll be reliable, or what to do if the tests are positive or negative.”
Comments from survey takers:

“I'm still stressed and fearful of having my family, especially my 7, 6, 5 and 4 year old grandsons come and stay at our house and play in the newly cleaned and filled pool.”
Comments from survey takers:

“Lots of folks up here in Yankee Hill are wondering about their water wells. We need help testing them.... We just don't know about our water--that's the problem, and we don't have the funds to test it.”
Comments from survey takers:

“There are too many competing agencies and too much worry about liability. We have to live in our home which survived the fire. We need to know actual information, not what could happen.”

PlumbingSafety.org • awhelton@purdue.edu
Comments from survey takers:

“This is a TRUST ISSUE. Right now, not sure who to trust. VERY SAD.”
Comments from survey takers:

“I would feel safer if someone could provide me a tank and pump. With clean water. I hate feeling like a test subject.”
Comments from survey takers:

“As long as we can get by with bottled water, we want to be at home.”
Comments from survey takers:

“I returned to my home as soon as the evacuation was lifted. I didn't care what the circumstances were, I was going to return regardless.”
Comments from survey takers:

“I have purchased my home after the fire. I took a risk to invest here in Magalia, CA”
Comments from survey takers:

“We tested positive for Benzene from the kitchen sink.”
Comments from survey takers:

“Going to Chico for showers is a real pain!”
Comments from survey takers:

“I do feel strongly that frequent water testing in all standing homes should be conducted at no cost to homeowners.”

PlumbingSafety.org • awhelton@purdue.edu
Comments from survey takers:

“Our insurance company covered what was damaged due to the fire and that's it, this is all standing homes we got no help, none.”
Comments from survey takers:

“There have been a few of us that have gotten ill.”