January 29, 2026

RE: Worker Safety at Properties with Elevated Thallium or Beryllium in Soil or at Buildings

To Whom It May Concern:

In recent weeks, my team has been contacted for advice by several property owners impacted by the 2025 Los Angeles area fires. These individuals reached out under the ongoing Purdue University led Home Environmental Assessment and Recovery Testing (HEART) study in response to the Eaton Fire and Palisades Fire. Specifically, we were asked for advice about thallium and beryllium detections in residential soils and within buildings.

In recent weeks, I have visited fire-impacted properties with reported elevated thallium and beryllium levels in their soil. My team also reviewed university and private company laboratory testing reports for soils representing burned homes and standing homes. We have also reviewed indoor environmental testing results generated by universities and private companies.

- Thallium and beryllium are metals that can be present in soil due to local geology and can sometimes be found in some items on residential properties.[1] L.A. County found both on some properties post-fire.[2]
- Thallium and beryllium can be detected in soil or surface wipes by applying the CAM-17 metals test.[3] Like past post-fire soil testing efforts in California,[4] screening for all CAM-17 metals has been our recommendation since the 2025 fires occurred – and also a UCLA-LMU-Purdue CAP.LA residential soil testing recommendation.

In response to the wide range of inquiries we received and based on the information my team has reviewed, we are sharing the relevant worker safety expertise available within California state government. **Thallium and beryllium levels in some fire-impacted properties exceed health-based residential soil screening levels issued by California's DTSC, while other levels exceed DTSC hazardous waste limits.** Both fire impact areas have properties with health and hazardous waste level exceedances. Some exceedances are for soils when no other metals (i.e., lead) exceed their cleanup goal. On January 28, a CAP.LA residential soil testing presentation to study participants indicated about 100 properties of more than 1,400 tested so far had at least one soil sample exceeding either a thallium or beryllium DTSC health-based screening level (0.78 mg/kg and 16 mg/kg, respectively). During review of interior surface building testing reports, we have also seen detections of thallium and beryllium. Though, currently, we are unaware of any indoor surface standards for the workers (or the public) for these contaminants. At the present time, we cannot conclusively point to the exact source(s) of these metals.

In response to property owner questions from property owners and our investigation, I consulted with government public safety experts. Based on those interactions, the following recommendations and resources are provided:

[1] In the scientific literature, thallium and beryllium have been associated with lithium per Sun et al. 2025. Beryllium and thallium environmental behavior in lithium slag: Smelting process-dependent mineralogical fate and risk assessment across industrial settings. *Journal of Hazardous Materials.* DOI: https://doi.org/10.1016/j.jhazmat.2025.140605; Separately, after the 2019 Woolsey Fire, naturally occurring thallium as high as 0.92 mg/kg and beryllium as high as 0.76 mg/kg were found.

[2] ROUX, Inc. *Community Soil Sampling and Human Health Screening Report: Eaton Fire and Palisades Fire Regions.* September 5, 2025. Prepared for: County of Los Angeles, California.

[3] CAM-17 refers to 17 metal contaminants acknowledged by the California Administrative Manual (CAM), *California Code of Regulations Title 22, §66261.24.* The metals include arsenic (As), lead (Pb), mercury (Hg), cadmium (Cd), chromium (Cr), cobalt (Co), copper (Cu), beryllium (Be), barium (Ba), selenium (Se), nickel (Ni), molybdenum (Mo), thallium (Tl), vanadium (V), zinc (Zn).

[4] Thallium and beryllium are 2 of the 17 metals looked for in soils after past fire debris removal activities in California – until the 2025 Los Angeles Fires when soil sampling was not required.

♦ Hazard Assessment for Elevated Thallium or Beryllium Levels for Worker Safety ♦

For properties with either elevated thallium or beryllium levels in soil, a hazard assessment should be conducted by a qualified professional with appropriate expertise (e.g., a professional licensed engineer, certified industrial hygienist) as part of the site investigation. This should involve determining whether employee exposures may exceed allowable limits and if additional personal protective equipment, such as protective suits and respirators, that were worn by debris removal contractors during the cleanup, are necessary. The applicable regulation for thallium and beryllium is the *California Code of Regulations, Title 8, Section §5155*. An initial hazard assessment is recommended to determine whether additional worker safety measures are required, even when existing safety protocols are in place.

♦ Consultation with Cal/OSHA for Worker Safety ♦

Property owners and employers should contact the California Occupational Safety and Health Administration (Cal/OSHA) Consultation Service for property-specific guidance, as recommendations may vary depending on the property status (e.g., debris recovery, smoke/fire remediation, reconstruction). The Cal/OSHA San Fernando Valley office in Van Nuys has primarily been supporting worker safety enforcement in the Palisades and Altadena areas.

Cal/OSHA Consultation Service Area Office: San Fernando Valley
Manager: Carla Slepak
Email: SFVConsultation@dir.ca.gov ; Phone: (818) 901-5754
Website: https://www.dir.ca.gov/dosh/consultation.html

♦ Considerations for Standing Homes for Worker Safety ♦

Inside standing homes, thallium and beryllium are not typically co-located with residential lead contamination, and their presence may not generally alter the scope of lead abatement activities. However, the *California Code of Regulations, Title 8, Section §5155* may still require protective measures for workers under certain conditions, even when lead abatement is not performed. Again, a consultation with Cal/OSHA should be helpful.

♦ Contaminant Soil and Property Level Soil Testing and Remediation Support ♦

In 2025, the City of Los Angeles listed several "Environmental Consultants" that may be able to assist property owners to navigate post-fire soil testing and remediation. Post-fire soil testing practices previously used by the State of California, important site safety, transportation safety, and disposal requirements are known to professional firms. Historical best practice for fire-contaminated soil has often involved physical removal and replacement.[5] Bioremediation of soils has not been recognized as an accepted practice for rapid post-fire recovery.

Workers and employers should contact Cal/OSHA directly for advice. The California Department of Public Health (CDPH) may also have insights that can assist workers, employers, and property owners on these topics. The professionals at CDPH have been exceptional based on my prior engagement with them on worker and public safety topics for wildfires and pipeline repair construction sites. My contact information is awhelton@purdue.edu.

Sincerely,

Andrew J. Whelton, Ph.D.

[5] As we have previously advised, property owners should reach out to professional engineering firms with appropriate expertise for help screening soil and remediating their property. Participation in university and other externally funded soil testing efforts where CAM-17 metals are screened can help property owners determine identify if additional soil testing may be recommended. Though, to our knowledge, none of the university led efforts are applying the same breadth and depth of testing that property owners received after prior California wildfires. Historically in California, a public-private partnership with engineering firms and government agencies manages restoring properties to pre-fire conditions. The high level of knowledge and soil support provided by engineering firms in California has been the standard for more than a decade.

NOTE: This public service was conducted as part of the Purdue University Home Environmental Assessment and Recovery Testing (HEART) study. We have received $7,000 of the $175,000 committed to this project since January 2025 and provided about $100,000 of volunteer effort. We continue to provide support to households, business owners, and workers impacted by the 2025 Los Angeles Fires. Additional information can be found here. For context, since 2017 my multi-organizational team and I have been assisting communities respond to and recover from fires in and outside the United States. In response to the 2025 Los Angeles Fires, we have been working with and assisting California property owners, businesses, government officials, as well as academics on topics such as the safety of infrastructure, drinking water, soil, indoor environment, fruit and gardens, insurance, and mental health with several other partners. Results of some of our completed and ongoing work can be found here. In addition to our government agency collaborators our college and university collaborators have included: Butte College Cal Poly Pomona, California Institute of Technology (Cal Tech), California State University, Northridge, Chapman University, Chico State University, Colorado State University, Maui College, Oregon State University, Tufts University, University of California Los Angeles (UCLA), University of Colorado, University of California Berkeley, University of Southern California (USC), University of Hawai'i, University of Kentucky. Further, we have worked to help community groups such as Eaton Fire Residents United, Pali Strong, Camp Fire Zone Project, other groups, as well as individual households and business owners in and outside California.