

	MODIFIED CALRECYCLE GUIDANCE FOR THE COUNTY OF SONOMA	
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Debris Removal Requirements

To ensure safety to the workers, public, and the environment, certain protocols must be followed after a (wildfire) disaster when removing structural ash and debris from a fire.

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Private Debris Cleanup Process Overview

Below is an overview of the debris removal operations and protocols. This information was adapted from various sources and includes “best practices.”

Cleanup Operations	Cleanup Protocols
Site Documentation	<ul style="list-style-type: none"> • Measure and record foundation and cleanup area. • Notify appropriate entities of cleanup, including local utilities, USA Underground, and Air Pollution Control District(s).
Work Plan	<ul style="list-style-type: none"> • Create a Work Plan that provides for site testing and analysis, use of personal protective equipment (PPE), hazardous waste and asbestos removal, debris removal, erosion control, soil grading, and confirmation sampling.
Application Process	<ul style="list-style-type: none"> • Owner or contractor will submit a debris removal application • Once the application is approved, the County will issue a permit.
Site Testing and Analysis	<ul style="list-style-type: none"> • The property owner will need to hire a certified Asbestos Consultant and Soil Consultant (professional civil engineer or geologist) to test the site.
Air Monitoring	<ul style="list-style-type: none"> • Fugitive Dust- Dust is a significant concern and there should be adequate dust control water applied to

	burn ash materials at all times, most importantly during contractor disturbance and loading.
Hazardous Waste and Asbestos Removal	<ul style="list-style-type: none"> • All remaining hazardous waste and household hazardous waste must be identified and legally disposed of. • Asbestos must be assessed by a Certified Asbestos Consultant and removed by a licensed Asbestos Abatement Contractor.
Debris Removal	<ul style="list-style-type: none"> • Remove ash and debris, metals, and concrete from the site and dispose of properly. • Recycle metals and concrete if possible.
Foundations	<ul style="list-style-type: none"> • Completely remove and dispose of foundation; or • Submit a letter from a Licensed Civil or Structural Engineer certifying the foundation is acceptable for rebuild. The letter shall state reasons for their decision.
Soil Grading	<ul style="list-style-type: none"> • Remove 3 to 6 inches of soil from the impacted area after the burn ash and debris is removed to a level of visually clean soil.
Confirmation Sampling	<ul style="list-style-type: none"> • A licensed Soil Consultant (civil engineer or geologist) will oversee the collection of soil samples from 0-3 inches for confirmation sampling and compare soil sample results against cleanup goals.
Appliance and Vehicle Recycling	<ul style="list-style-type: none"> • Appliances and vehicles must be handled properly to meet the requirements of metals recycling facilities.

Background Sampling

As no regional background data exists for this event, baseline sampling should be conducted under the supervision of a professionally licensed civil engineer, petroleum engineer, or geologist to determine background conditions in the vicinity of the cleanup. These results will establish site specific cleanup levels that may be in excess of published health screening levels for the site.

The establishment of background conditions must take into consideration site specific data relative to local geology, and the geologic chemical data in the

background data. Results within 20% of the background data set will be considered passing.

Site Specific Background Data Collection and Analyses

The following requirements apply:

- 1) Three locations shall be identified away from the impacted/cleanup area, such that minimal air blown ash or debris may disturb the desired samples. Locations should be staggered to represent the area.
- 2) In order to assure a “clean” or “native” sample, the first 3 inches of dirt shall be removed from the ground surface.
- 3) Samples shall be collected from 3 to 9 inches and placed in appropriate containers for transport to an analytical laboratory
- 4) Samples shall be analyzed for metals under either EPA 6010 or Method 6020 and Mercury by EPA Method 7471A. Confirmation samples taken later must use the same analytical method as used for determining background.
- 5) Analytical results will be reviewed and compiled by the licensed professional, and a determination made if the results are representative of background for the subject site.

Confirmation Sampling

Confirmation sampling should be conducted by a licensed professional after fire-related debris has been removed from a property. Representative soil samples should be collected and analyzed to determine compliance with cleanup goals. The total number of samples to be collected is based on estimated square footage of ash footprint as follows:

Estimated Square Footage of Ash Footprint (Decision Unit)	Number of 5- Point Aliquots
0-100 square feet	1
101-1,000 square feet	2
1,001- 1,500	3
1,501-2,000	4

2,0001-5,000	5
>5,000 square feet	Must consult with local environmental health officials.

All confirmation samples should be collected from a depth of 0-3 inches using a dedicated 4-ounce plastic scoop and be placed in 8-ounce jars. Samples should be taken to an approved laboratory for analysis of Title 22 Metals including antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, molybdenum, nickel, selenium, silver, thallium, vanadium, and zinc.

Soil Testing and Screening Criteria for Work Plans and subsequent Report of Findings

Initial Health Screening Criteria for Soil		
Analyte	Health Screening Level mg/Kg	Cleanup Level
Antimony	30	Health Screen
Arsenic	0.07	Health Screen
Barium	5,200	Health Screen
Beryllium	15	Health Screen
Cadmium	1.7	Health Screen
Chromium	36,000	Health Screen
Cobalt	23	Health Screen
Copper	3,000	Health Screen
Lead	80	Health Screen
Mercury	5.1	Health Screen
Molybdenum	380	Health Screen
Nickel	490	Health Screen
Selenium	380	Health Screen
Silver	380	Health Screen
Thallium	5	Health Screen
Vanadium	390	Health Screen
Zinc	23,000	Health Screen

These Initial Screening Criteria have been establish based on CalRecycle guidelines for soil confirmation sampling after completion of visible cleanup of properties. These are initial health screening criteria in the absence of specific background data. Screening levels provided here **should be raised** (to become more lenient)

if ambient concentrations of metals are found to be prevalent in background data sets established by the licensed professional conducting the background study.

Samples should be sent to an approved laboratory for analysis of Title 22 Metals including antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, molybdenum, nickel, selenium, silver, thallium, vanadium, and zinc by either EPA Method 6010 or 6020, and mercury by EPA Method 7471A. Although either EPA Method 6010 or 6020 may be used, **the same lab method** should be used for baseline and confirmation samples.

Additional Advisory:

In cases where a subject site has been cleaned up to background levels that exceed initial screening levels, property owners should be advised of the exceedance.

Reporting:

In order to facilitate the expedient review of cleanup documentation, results of testing and analyses shall be outlined in tables for each site compared against the identified screening level. Certified analytical reports shall be attached including all QA/QC documentation from the lab. As the results presented will include interpretation, all reports must be certified and stamped by the licensed professional (civil engineer, petroleum engineer, or geologist) who is taking responsible charge for the work.

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Requirements

Cleanups shall meet the following standards.

1. Remove vehicles for recycling. Collect, stockpile, and remove metals, appliances, and similar items for recycling.
2. Trees that pose a hazard to the home site or to workers during debris removal activities, or that will pose a hazard during reconstruction activities, shall be removed. Trees may be cut and set aside for firewood or taken off site and recycled per owner's instruction.

3. Hazardous materials encountered which were missed in the previous sweep of the property, shall be set aside for later collection.
4. Remove all structural ash and debris from the impacted property.
5. Remove structural foundation and associated concrete. Driveways may stay in place, when appropriate, to aid in erosion control during the rebuilding phase. They can then remove and replace, as necessary, as one of the last steps to reconstruction.
6. Dust control and erosion protection measures shall be incorporated as follows:
 - a. Ash and debris shall be thoroughly wetted prior to removal. Hoses with fine spray nozzles shall be used to apply water to the work site prior to and during active debris removal. The materials shall also be wetted while being loaded into trucks to prevent visible dust from crossing property lines. Care shall be taken to avoid excessive use of water in order to prevent runoff. Any runoff produced shall be contained onsite.
 - b. Silt fences, fiber rolls, erosion control blankets, and other best management practices shall be used to prevent ash or soil from washing into the street, drainage courses and culverts, or into neighboring properties.
 - c. Stockpiled materials that are not immediately loaded for transport shall be handled and stored on site in such a manner as to avoid offsite migration. This may include wetting and covering the waste until it is loaded and transported.
7. Structural ash and debris shall be transported to and disposed of at an approved landfill.
 - a. Ash and debris shall be wetted, wrapped with plastic sheeting, taped closed, and covered with a tarp to eliminate the release of dust during transport (burrito wrapping).
 - b. Mixed burned debris and ash shall be transported to an approved landfill in California or Nevada. Property owners or contractors shall make contact with the landfill operator prior to hauling the waste to ensure its acceptance. Note that waste characterization testing may be required by the landfill that is the final point of disposal.
 - c. A receipt for waste disposal shall be obtained from the landfill operator and a copy provided to the County as part of certification of the work.

8. Transport and disposal of recyclable materials - concrete, metal, etc., shall be handled as follows:
 - a. Trees and wood waste, metal, vehicles, appliances, and aggregate material (concrete, etc.) may be recycled locally.
 - b. These materials must be cleaned sufficiently of ash and debris at the site to allow safe transportation. Landfill staff may reject loads that appear to be contaminated.
 - c. If recyclable materials cannot be cleaned of ash and debris, they must be handled and disposed of as mixed burned debris.
9. Soil shall be sampled and analyzed to verify that cleanup standards have been met.
 - a. Following removal of all debris and impacted solid from the site, soil samples shall be collected from the impacted structure area. Sample collection shall be performed under the supervision of a California licensed Professional Civil Engineer, Petroleum Engineer, or Geologist. A report of analytical results shall be prepared by this engineering contractor and a copy provided to the County as part of certification of the work.
 - b. Confirmation samples will be collected from the impacted structure area (burn footprint) in native soil, to effectively represent the cleanup area. The selection of sample locations shall be based on a 10 by 10-foot grid overlay of the impacted area with the number of samples to be collected based on the square footage.

Property owners shall ensure that contractors are licensed for the work they will perform. The guidance below is provided to ensure that all mixed burned debris and ash generated by the disaster will be transported, handled, and managed in a manner that will protect public health and the environment. Proper personal protective equipment, including respiratory protection, should be used by anyone who handles ash or burned debris or who may come into contact with these materials during transport or management.

Storage of Waste Onsite

Mixed burned debris stored onsite prior to transport for disposal shall be managed to prevent offsite migration of ash and dust. This may include wetting and covering the waste. Bins containing debris and/or refuse shall be kept covered and wetted down as necessary. The property owner or contractor shall ensure that ash and dust are contained to the greatest extent possible.

Property owners or contractors should segregate recyclable materials from mixed burned debris and taken to a facility that can accept trees and wood waste, metal, vehicles, appliances, and aggregate material (concrete, etc.). These materials must be cleaned sufficiently of ash and debris at the site to allow safe transportation, as landfill staff may reject loads that appear to be contaminated. If recyclable materials cannot be cleaned of ash and debris, they must be handled and disposed of as mixed burned debris.

Best management practices shall be used to prevent tracking ash and debris into the roadway.

Personal Protective Equipment

Property owners and their contractors should use Personal Protective Equipment (PPE) when handling burned debris and ash. This includes but is not limited to the following:

- Respiratory protection - such as a N-95 or P-100 particulate mask or NIOSH approved respirator
- Eye protection - safety goggles or safety glasses
- Hand protection - heavy work gloves
- Head protection - hard hat, if necessary
- Foot protection - shoes or boots with heavy lug soles
- Clothing - long pants and long sleeved shirts, Tyvek or similar protective, disposable clothing
- Hearing protection - if working in an area with excessive noise from equipment such as chain saw, backhoes, tractors, or other heavy equipment

General Guidance for Handling or Removal of Ash

- Wear gloves, long sleeved shirts, and long pants and avoid skin contact.
- If you do get ash on your skin, wash it off as soon as possible.
- If you have a vegetable garden or fruit trees, wash the fruit or vegetables thoroughly before eating them.
- Avoid getting ash into the air as much as possible. Do not use leaf blowers or take other actions that will put ash into the air.
- Shop vacuums and other common vacuum cleaners do not filter out small particles, but rather blow such particles out the exhaust into the air where they can be breathed. The use of shop vacuums and other non-HEPA filter

vacuums is not recommended. HEPA filter vacuums could be used, if available.

- Well-fitting dust masks may provide some protection during cleanup. A mask rated N-95 or P-100 will be more effective than simpler dust or surgical masks in blocking particles from ash. In general, many ash particles are larger than those found in smoke; thus, wearing a dust mask can significantly reduce (but not completely eliminate) the amount of particles inhaled.
- Persons with heart or lung disease should consult their physician before using a masks during post-fire cleanup.
- If ash is wet down, use as little water as possible.