Department of Toxic Substances Control

Phase 1 Field Procedures for Disaster Response

Second Edition 2020

California Department of Toxic Substances Control
2020 Phase 1 Field Procedures: Assessment & Removal of Household Hazardous Waste, E-Waste & Asbestos

Section A – General Concept

General Approach to Clearing Fire-Impacted Properties

This document provides general guidelines to accomplish the Phase 1 removal of household hazardous waste (HHW), asbestos-containing material (ACM) (explained in Section B), and electronic waste (e-waste) (explained in Section C) quantities to minimize to the extent practicable, threats to human health, the environment, and damage of salvageable property. This is a living document that may be updated throughout the life of the project. Alterations to contents may be made and documented as determined by project needs. These procedures are intended to be utilized by the California Department of Toxic Substances Control's (DTSC) HazMat Teams.

Means and Methods

Parcel/Property Survey and HHW Collection Procedures

Each DTSC HazMat Team will consist of hazardous waste removal personnel, asbestos removal personnel, Certified Asbestos Consultants (CAC), DTSC Emergency Response personnel, and County representatives. All DTSC HazMat Team personnel are 40-Hour HAZWOPER trained in accordance with 29 CFR 1910.120 and Title 8 Section 5192. DTSC's Project Leader will provide individual team leads with survey assignments for each day. The tasking will include information accessible using the appropriate collection application on a portable electronic tablet. Information will be input into an electronic assessment form for each address respectively.

Upon arrival to a property, a visual assessment of the property will be conducted to ensure the site is safe for entry (i.e., accessibility issues, unstable structures, power lines, tree hazards, etc.). If there are "NO TRESPASSING" signs posted for the property, this information will be relayed immediately to the DTSC Team Leads for each crew and the respective local agency representative or their designee. Based on consultation between the DTSC Team Leads and local agency representatives, a decision will be made regarding entry to the property. Ideally for properties marked with "NO TRESPASSING" signs, coordination with the property owner would be preferred prior to entering said property. If the property cannot be accessed for other reasons (locked gate, bridge out, physical hazard, etc.), DTSC Team Leads will complete a comment in the appropriate collection application.

If there is access to the property and the site is safe to enter, the DTSC HazMat Team will complete a brief safety huddle to delineate responsibilities for those entering the property. DTSC's Contractor will conduct monitoring using the following instruments during all survey activities for personnel health and safety surveillance following their Health and Safety Plan (HASP):

1. Ludlum Model 3000, or equivalent radiological monitoring instrument;
2. MultiRae Pro/Plus five gas meter, or equivalent volatile organic compound (VOC) monitoring instrument, to record lower explosive limit (LEL), hydrogen sulfide (H2S), VOCs, oxygen (O2), and carbon monoxide (CO);
3. Lumex Model RA-915+ Mercury Vapor Analyzer will be available at the staging area and utilized when there is a suspected release;
4. Heat Stress Meter (Kestral 3000 or WBGT or equivalent monitor), as appropriate;
5. Particulate Monitor – TSI Dust Trak Model 8534 (Utilized if wildfire smoke is an issue. Refer to Figure 2: Protection from Wildfire Smoke.)

DTSC Team Leads will record pertinent property information, features and/or hazards in the collection application. DTSC HazMat Teams will check-in using an electronic assessment form when they arrive at a property each day to maintain situational awareness of where teams have visited over the course of a day. Prior to entering a property DTSC HazMat Teams will comply with the requirements of the HASP.

Action levels are listed in Table 1 below. In the event that action levels are exceeded, the DTSC Team Leads and HazMat Crew will leave the site, note the information in the collection application, and discuss the results with the DTSC Project Leader to determine next steps before activities can continue at that location.

DTSC Haz Mat Crew evaluating structure with radiological monitoring instrument and a MultiRae Pro/Plus five gas meter or its equivalent.

TABLE 1. ACTION LEVELS			
These Action Levels, if not defined by regulation, are some percent (usually 50%) of the applicable PEL/TLV/REL. That number must also be adjusted to account for instrument response factors.			
	TASKS	**AMBIENT AIR CONCENTRATION**	**ACTION**
☒ **EXPLOSIVE OR FLAMMABLE ATMOSPHERE**	All	<10% LEL	Work may continue. Consider toxicity potential.
		>10% LEL	Work must stop. Leave area immediately and evacuate to a safe upwind location. Consult with Industrial Hygienist (IH) and Project Leader.
☒ **OXYGEN**	All	<19.5% O_2	Leave area. Re-enter only with self-contained breathing apparatus.
		19.5 to 22% O_2	Work may continue.
		>22% O_2	Work must stop. Ventilate area before returning.
☒ **RADIATION**	All	<3 times background	Continue work.
		3 times background to <1 mR/hour	Radiation above background levels (normally 0.01-0.02 mR/hr) signifies possible radiation source(s) present. Continue investigation with caution. Perform thorough monitoring. Consult with an IH.
		>1 mrem/hour	Potential radiation hazard. Evacuate site. Continue investigation only upon the advice of an IH.
☒ **ORGANIC GASES AND VAPORS**	2, 3	Carbon Monoxide: 10 ppm	Leave the area. Call Incident Command.
		VOC: <1 ppm	Level C within footprint of destroyed structure.
		1 ppm to <5 ppm	Level C w/ APR/Multipurpose +P100 cartridge.
		>5 ppm to <500 ppm	Level B. Contact DTSC Project Leader for guidance and/or planning.
		VOCs >3000 ppm relative response units	Leave the area.
☒ **INORGANIC GASES, AND VAPORS**	2, 3	<u>Sustained in the Breathing Zone</u>:	
		Carbon Monoxide	Leave the area. Level B is indicated. Contact DTSC Project Leader.
		Alkaline Ash (as particulate): 1 mg/m^3	Level C w/ APR/Multipurpose +P100 cartridge.
		Mercury: 12,500 ng/ m^3	Level C w/ APR/Mercury Cartridge.
		Hydrogen Sulfide: ≥ 0.5 ppm	Leave the area. Level B is indicated. Contact DTSC Project Leader.
☒ **PARTICULATES**	All	AQI < 151 151 ≤ AQI ≤ 500 AQI > 500	Recommended Health & Safety measures are outlined in the *Protection from Wildfire Smoke Summary and Actions Fact Sheet* (see Figure 2).

After monitoring is complete, DTSC HazMat Teams will collect HHW, Asbestos, and E-Waste items at each property and bring the items to appropriately marked vehicles for transport to the staging area for processing. Cylinders that may contain product will be brought to staging for recycling. Liquids will be tested for pH and screened for oxidizers/peroxides and organics for compatibility before being segregated and placed into the support vehicles. Leaking containers or bags will be overpacked prior to transport. Materials collected will be secured in appropriate containers for transport to the staging area. Support vehicles will adhere to the restrictions of the US Department of Transportation (DOT) special permit assigned to the project confines.

All HHW, Asbestos, E-Waste items removed from the Staging Area will be manifested and disposed of at permitted treatment, storage, and disposal facility in good standing with local, state, and federal regulators.

DTSC HazMat Teams will document in the collection application the type and number of HHW and E-Waste items collected from each property. Types of HHW can include, but is not limited to:

a. Batteries – Auto, Truck, Heavy Equipment, Solar, Forklift, etc.
b. Propane Tanks (less than 30 gallons)/Other Compressed Gas Cylinders
c. Latex / Oil-Based Paint
d. Fuels
e. Household Cleaners
f. Fertilizers & Pesticides
g. Aerosols
h. Used oil
i. Solvents
j. Auto Fluids – antifreeze, brake fluid, power-steering fluid, transmission fluid, etc.
k. Pool Chemicals
l. Products labeled Caution, Warning, Danger, Poison, Toxic, Flammable or Corrosive are considered hazardous.

Burned batteries. (Butte Fire - Calaveras County - 2015)

Household Hazardous Waste – (Sonoma County Floods – Sonoma County – 2019)

Phase 1 assessment activities have been completed once all accessible HHW, E-Waste, and suspected ACM have been removed and/or documented as being left in place. The completed properties will be marked with appropriate signage provided by DTSC and/or the Local Requesting Agency. The signage shall be marked with the address of the property, including numbers and street address, plus the letters "DTSC" (See Figure 1). Operational maps will show these parcels as “Phase 1 Assessment Completed.” If some HHW is observed and documented at the property but cannot be recovered due to a physical safety obstacle (i.e. remnant structure, dangerous trees or limbs, etc.), these properties will be marked as Phase 2 Deferred. Phase 2 Deferred are those properties where HHW exists onsite, but due to safety considerations (such as partially standing structures, potential hazard trees, or large pieces of debris), DTSC HazMat Teams cannot safely remove the HHW.

DTSC HazMat Teams will provide assistance to remove HHW during the Phase 2 Debris Removal Operations if the California Office of Emergency Services original Mission Assignment includes this provision. During the Phase 2 Debris Removal Operations, any HHW identified will be segregated and staged at the property for pickup during “milk runs” conducted by DTSC HazMat Teams. Empty HHW containers will not be collected, but rather marked with a white “X” and staged for Phase 2 Debris Removal Operations. HHW containers and cans containing residual materials or greater will be collected and brought back to the staging area. Empty propane tanks, fire extinguishers, and empty compressed gas cylinders will be de-valved (using non-sparking tools), marked with a white “X,” and staged and laid to the entry side of the property’s burned footprint. Each DTSC HazMat Team will determine whether cylinders will remain onsite or be brought back to the staging area. DTSC HazMat Teams will also document the number of compressed gas cylinders that were removed. Additional details for addressing HHW containers are also listed in the Waste Removal section on page 6.

If assessment teams identify high hazard items that need removal, but do not possess the resources to address immediately, they will mark the items with high visibility orange paint and schedule a revisit at a later date. The DTSC HazMat Team will submit the electronic assessment form, marking the site for revisit required, and selecting one or more reasons for revisit. When the revisit work is complete and the final site conditions are verified, the DTSC HazMat Team completes the electronic assessment form to finalize the Phase 1 assessment. Scenarios that may require additional resources include but are not limited to: ammunition greater than .50 caliber, cylinders deemed unsafe to transport, large storage tanks requiring a liquid transfer, containers with unknown contents, bulging drums, and large items requiring heavy machinery.

Pre-Site Entry Observations

Upon arrival at each new property, the DTSC HazMat Team will verify intended location, visually assess property terrain, downed power lines, paths for entry and egress, septic sewer openings/manways, marked or dangerous trees, chimneys, and unstable structures. Record the presence of any downed, damaged, or leaking transformers. If there is a chimney remaining on-site, DTSC HazMat Teams should note it in their electronic assessment form.

Pre-Structure Entry

Visually identify the property layout: garage, kitchen, bathroom, outer buildings. A quick perimeter check may lead to a safer way onto the property. Visually inspect flooring and subfloors and watch for unstable surfaces and the presence of basements, cellars, or crawlspaces, etc., that may present a subterranean fall hazard.

DTSC HAZMAT TEAMS WILL NOT ENTER STRUCTURES DEEMED TO BE UNSAFE DURING THE PRE-STRUCTURE ENTRY OBSERVATIONS. DTSC HAZMAT TEAMS WILL NOT OPEN DOORS TO ENTER PARTIALLY INTACT STRUCTURES.

Note conditions on the electronic assessment form. Note "Phase 2 Deferred" and document the reason in the electronic assessment form.

Structure Entry

Enter the property from the upwind and uphill side when possible. Always be aware of your team members and use the buddy system. Enter areas only deemed to be structurally sound, free of possible collapse, free of downed power lines, and be aware of any tree hazards in the work area. All activities will be performed to minimize dust agitation to the extent possible. Choose a path to minimize stepping on or over downed structural components or building remains. Puncture hazards from nails and other objects continue to be the # 1 injury risk. Use of probing tools (sticks, poles, rods, shovel handles, etc.) to identify ground surface, septic tanks, and safe areas is highly recommended. Subsurface structures such as basements, septic systems, underground shelters, and mine shafts have created fall hazards. Stay alert and watch your buddy.

Septic Tanks

Workers have broken through and partially fallen into septic systems in the past. The typical system encountered is not visible to the worker and potentially covered by debris. There may be a slight visible depression, high temperature deterioration or disintegration of the cap cover, or an open hole where the septic cap melted. The current approach is to slowly, and with a probe of some type, prod and heavily poke any suspect ground before stepping in the area.

If someone falls into a septic tank, immediately stop work and begin rescue operations by obtaining the contractor's rope and ladder provided for septic tank rescue. If the person is in need of immediate help, provide support and send someone else for rescue equipment. Do not leave them unattended. Upon extrication, assess the need for medical attention, decontamination, etc., follow any guidance in the HASP and/or the Incident Action Plan (IAP), and call 911 as appropriate.

Waste Removal

DTSC HazMat Teams will inventory the HHW items listed below and conduct the following activities: visually identify any container and condition (e.g., leaking, damaged, bulging, etc.); ensure grasp points are free of nails and jagged edges prior to moving; handle waste to avoid potential puncture wounds or splash hazard; and determine if containers are empty. Lastly all HHW assessed and removed from the property will be documented in the electronic assessment form. Additionally, all HHW items assessed, but could not be safely removed, will also be documented in the electronic assessment form.

- Non-Empty containers that appear to contain water (i.e., rain barrels, open top drums, etc.) will be screened to verify non-hazardous material that can be left in place. If there is any doubt that the container may contain any hazardous contents, the container will be brought back to the staging area for further field screening and processing.
- Non-empty containers that are sealed and truly contain unknown substances will be opened in the field by DTSC HazMat Teams. If the contents are deemed to be hazardous, they will be safely secured and transported offsite for proper disposal. The level of protection when opening unknown containers will be evaluated on a case-by-case basis.

- Empty containers shall be left in place and marked with a white "X" to demonstrate the absence of chemical hazards.
- Empty propane tanks and cylinders with burst pressure-relief discs or which are visibly empty shall be de-valved using non-sparking tools, laid to the entry side of the property's burned footprint, and marked with a white "X" designating them as empty for recycle.
- Empty high-pressure cylinders with fusible plugs will be assumed to contain Acetylene and picked up for transport to the staging area for further evaluation, as the packing may contain ACM. Acetylene tanks should be kept in an up-right orientation and checked for asbestos.
- Mixed batteries, pool chemicals, and fluorescent light ballasts will be collected, counted, and transported to the staging area.
- Cylinders with unknown contents, but appear to be safe to transport, shall be secured safely for transport back to the staging area and documented in the electronic assessment form.
- Kerosene tanks still containing fuel will be transferred, and the transfer in place will be logged in the collection application. The teams will mark with white “MT” after the tank is empty and will leave the tank in place.
- Ammunition of .50 caliber or less, including both unfired and spent casings, will be collected. Assessment teams should note that ammunition was removed from the site in the electronic assessment form. DTSC Team Lead will note the discovery of .50 caliber ammunition in an electronic assessment form and contact local law enforcement agencies requesting assistance from a bomb squad.
- If explosives are discovered during the initial assessment, DTSC HazMat Teams will cease operations and contact the DTSC Team Lead or their designee. The DTSC Team Lead will note the discovery and contact local law enforcement agencies, requesting assistance from a bomb squad.
- If radioactive materials are discovered during the initial assessment, the materials will be secured in containers minimizing the exposure to the DTSC HazMat Team and members of the public. The radioactive materials will be noted in the electronic assessment form and the Contractor will contact the appropriate resources to schedule a date and time to properly remove and dispose of the material. Personal effects, firearms, locked safes and other homeowner items will not be collected by the DTSC HazMat Team.

Miscellaneous Tanks De-headed and Marked with a White "X". (Butte Fire - Calaveras County - 2015)

Section B – Asbestos Specific Procedures

Authority

Building debris on the ground from structures destroyed by natural forces (as opposed to structures demolished in whole or in part by human activity) are not subject to the Asbestos National Emissions Standards for Hazardous Air Pollutants (NESHAP) requirements, as they relate to the demolition and renovation, transport or disposal requirements. For such situations, DTSC and its contractors may immediately begin cleanup and proper disposal of the resulting hazardous wastes. Other regulations still apply, including those affecting disposal sites and health and safety.

Project Planning

DTSC HazMat Teams will address easily identifiable, easily removable suspect ACM that can be removed without machinery. Any suspect ACM, whose removal time exceeds the pre-established timeframe, will be identified with pink paint and documented for Phase 2 Debris Removal Operations.

Asbestos Survey Procedures

1. A Cal/OSHA Certified Asbestos Consultant (CAC) will be co-located with the DTSC HazMat Team to assess each residential and/or commercial property for easily identifiable and removable pieces of ACM.
2. Verify the documented age of the building in the collection application.
3. Visually determine what materials are still intact, homogeneous, and are suspect ACM. Suspect ACM can include, but is not limited to, the following: floor tiles, sheet flooring,

window masking, acetylene cylinders (some cylinders contain asbestos and should be assessed), transite siding, transite pipe, transite roofing, vermiculite, chimney flues, etc.

4. Review any existing information about the structure, such as determining where kitchens, heaters, water heaters, and fireplaces were located in the structure to find suspect ACM, as well as foundations and any existing perimeter walls where cement board could have been used as siding and flooring for vapor barrier and tile.
5. Use equipment that will allow visual examination of all accessible spaces.
6. Perform a comprehensive investigation of areas to identify materials assumed to contain asbestos based on visual observation, touching of the material, and inspector's experience.
7. Always describe uninspected areas and explain why they were not surveyed (e.g., confined space, buried materials, restrictions specified by the safety plans, etc.).
8. Identify and describe all homogeneous areas of suspect ACM, except where limitations of the asbestos survey prevented such identification, and include whether each homogeneous material is surfacing material, thermal system insulation, or miscellaneous material.
9. Mark with pink spray paint a representative sample of all remaining suspected and/or assumed ACM that are easily identifiable.
10. Document the exact location of any asbestos material(s) on site. This can include pictures of the materials presumed to contain asbestos.
11. Document materials presumed to be ACM in the collection application in an electronic assessment form.
12. The CAC and the DTSC Team Lead will meet and confer to determine if the asbestos material identified can be removed within the pre-established timeframe. If limited quantity and easily identifiable ACM can be removed, then follow the procedures outlined below.
    a. A Cal/OSHA Certified Asbestos Removal Contractor will be responsible for overseeing the safe removal of ACM identified on-site by the CAC.
    b. All on-site personnel working to remove ACM must have received the necessary health and safety training for conducting asbestos removal activities pursuant to OSHA 1910.100, and CCR Title 8, Section 5192, and will be required to wear Level C Personal Protective Equipment (PPE) when working in the exclusion zone.
    c. All gross ACM that can easily be removed from the site will be adequately wetted prior to being bagged or bulked for removal. The easily identifiable gross ACM can be double-bagged and appropriately labeled as ACM. At a minimum, the plastic bags must be of at least 6-mil thickness.
    d. The ACM debris shall be taken with the DTSC HazMat Team to be delivered back to the staging area for temporary staging before proper disposal.

Best Management Practices (BMPs)

BMPs should be followed during the cleanup of ACM, and during all ACM cleanup related activities, including air monitoring and sampling as appropriate. Use of BMPs will ensure the proper management and cleanup of hazardous materials, including ACM, in a manner that ensures the protection of public health and the environment, as well as the protection of on-site personnel.

At a minimum, the cleanup teams shall instill the following BMPs for undertaking bulk asbestos cleanup activities:

- For the purposes of removing the ACM, a California OSHA-registered Asbestos Removal Contractor will be responsible for the safe cleanup of ACM identified on-site by the CAC. The CAC will work together with the Asbestos Removal Contractor to locate easily identifiable suspected ACM on each property.
- All on-site personnel working to remove gross ACM must have received the necessary health and safety training for conducting asbestos removal activities pursuant to OSHA 1910.100 and CCR Title 8, Section 5192, and will be required to wear Level C PPE when working in the exclusion zone.
- All on-site response personnel must be 40-hour HAZWOPER trained under 29 CFR 1910.120, and CCR Title 8, Section 5192.
- As necessary, a CAC will identify all gross ACM that can be easily removed from the ground prior to debris removal activities.
- All gross ACM that can be safely and easily removed from the site will be adequately wetted prior to being bagged or burrito-wrapped to meet the NESHAP leak-tight requirement for cleanup. The easily identifiable gross ACM can be double-bagged and appropriately labeled as "Asbestos-Containing Materials" in bags, at a minimum, 6-mil thickness, and the contents must remain wet.
- If bulk loading of ACM is performed, the container used for transport shall be double-lined with 10-mil poly sheeting in such a way that once loaded, both layers can be sealed independently. The containers will be labeled accordingly and closed at night.
- All waste material that is not loaded out at the end of each work shift should be stockpiled, sufficiently wetted and/or covered to prevent the offsite migration of contaminants.
- All bins remaining onsite at the end of each work shift shall be properly placarded.
- All hazardous waste haulers who observe loading operations outside of the vehicle cab, and/or covering (tarping) the trailer or container must comply with their company policies and HASP for this incident. Workers should be wearing the appropriate PPE stipulated for the job.
- All ACM and debris removed from the parcels, properties, sites or areas must be manifested at the staging yard, prior to transportation to a permitted asbestos disposal facility.

Transite Pipe (Asbestos-Containing Material). (Thomas Fire - Ventura County - 2017)

Transite Roofing (Asbestos-Containing Material). (McCourtney/Lobo Fire – Nevada County – 2017)

Section C – Electronic and Universal Waste Collection

Electronic waste (e-waste) that is heat impacted, easily identifiable, and easily accessible will be collected. DTSC HazMat Teams should note that e-waste was recovered from the site in the electronic assessment form and field logbook. DTSC HazMat Teams will bring e-waste to the Staging Area where it will be segregated from HHW and ACM for transport to an approved treatment, storage, and disposal facility.

Examples of e-waste include, but are not limited to:

- Computers, laptops, monitors, routers, and peripherals
- Microwaves
- Televisions (liquid crystal displays, cathode ray tubes, and plasma displays)
- Copiers
- Fax machines
- Stereo components
- Microwaves
- Satellite/Cable Dish components
- Telephones, cell phones, and answering machines
- Videocassette recorders
- Calculators
- Solar panel on outdoor lights

Large quantities of completely burned e-waste will be evaluated by DTSC Team Lead to determine if removal is necessary.

Damaged roof-mounted solar panels found within the burn perimeter of a structure will generally be considered not recoverable and will not be collected. Damaged solar panels, outside the burn perimeter of structure, that can release hazardous constituents, will be addressed on a case-by-case basis based on size, accessibility, and the ability to remove expeditiously.

Completely burned e-waste will be considered debris and will not be removed by DTSC HazMat Teams.

Intact, undamaged electronic devices and solar panels are not considered waste and will therefore not be collected.

Fire-Impacted E-Waste – (Carr Fire – Shasta County – 2018)

Section D – Additional Guidance

Upset Property Owners/Residents

It is likely that crews will encounter property owners or other individuals who are upset by the presence of the DTSC HazMat Team. The DTSC representative or Local Government Representative should make every effort to explain to the individual our role in the recovery process and the fact that the Governor's Emergency Declaration and the County Health Officer's Order allows the DTSC HazMat Team to enter private property without an access agreement or Right of Entry form. If the property owner is still upset, preventing access, or threatening in any manner, simply move on to the next property and the DTSC Team Lead will document the issue. If any member of the DTSC HazMat Team feels threatened by the individual, call 911!

Questions from Property Owners/Residents

DTSC HazMat Teams are certain to encounter individuals who have questions about the Phase 1 assessment activities. DTSC and/or local agency personnel will make every effort to explain the purpose of the Phase 1 Assessment-related activities. If property owners still have questions, these individuals should be directed to the local environmental health department, Certified Unified Program Agency (CUPA), or if applicable, Local Assistance Center. DTSC personnel should, to the best of their abilities, answer questions directly related to the Phase 1 Assessment activities.

Media Inquiries

Any media inquiries should be directed to the Emergency Response Unit Supervisor and/or Branch Chief and DTSC's Public Information Officer.

Special Acknowledgment

This document was prepared in conjunction with staff from DTSC’s Emergency Response Unit and US EPA’s Emergency Response Program.

Figure 1: Sample Property Marking Sign

This property's Household Hazardous Waste removal has been designated

✓ **COMPLETE**

by the California

Department of Toxic Substances Control

Department of Toxic Substances Control

For questions regarding the cleanup, contact the

Impacted County's Local Assistance Center

at Area Code + Phone Number

Ash remains a health hazard.

Please review health advisories before entering burned area

Figure 2: Protection From Wildfire Smoke

DTSC Department of Toxic Substances Control

Protection from Wildfire Smoke

Summary and Actions Fact Sheet

Wildfire smoke may impede an employee's ability to function in the field. The purpose of the new California regulation (T8 CCR 5141.1) is to provide protection for employees that may be exposed to wildfire smoke and fall out in an area with an Air Quality Index (AQI) greater than 151.

This fact sheet applies to all DTSC employees that work outside or in unfiltered buildings for more than one hour per shift during a wildfire smoke event.

DTSC supervisors must inform their employees of the current AQI for PM2.5 and protective measures to take to reduce their wildfire smoke exposures.

Wildfire Smoke Requirements

1. Check AQI prior to site visit
2. Bring DTSC respirator & P100 cartridges to the site
3. Measure PM2.5, if necessary
4. Follow AQI Action Levels
5. Continue to communicate wildfire smoke hazards

Controls

DTSC does not control field worksites. DTSC will control exposures by relocating work, changing the schedule, providing additional breaks, or offering respiratory protection.

Communication

Supervisors shall communicate with staff via radio or phone regarding updated PM2.5 levels. If air quality deteriorates or adverse health effects occur, contact your supervisor.

Respiratory Protection

DTSC has an established respiratory protection program. Respirators utilized for these events are the MSA 200LS or MSA 4000 with P100 cartridges. To utilize a respirator, staff must be trained, fit-tested and medically certified. DTSC staff may only utilize DTSC issued respirators.

DTSC field staff will be trained during the HAZWOPER Refresher classes.

Air Quality Index (AQI) Action Levels

AQI < 151	No action
151 ≤ AQI ≤ 500	Respiratory protection ***recommended,*** provided by DTSC
AQI > 500	Respiratory protection ***required,*** provided by DTSC

Health Hazards

Small particles (PM2.5) deposit in the lungs causing persistent coughing, phlegm, wheezing or difficulty breathing.

Wildfire smoke may also cause reduced lung function, bronchitis, exacerbated asthma, heart failure and death.

People over 65 have a higher risk to serious adverse effects.

If adverse health effects arise from work exposure, contact your supervisor for medical treatment.

AQI and PM2.5 Levels

Check AQI Forecasts:

- AirNow.gov
- enviroflash.info
- wildlandfiresmoke.net
- tools.airfire.org
- mobile.arb.ca.gov/breathewell
- arb.ca.gov/capcoa/dismap.htm

Measure PM2.5 Levels:

- TSI DustTrak DRX

PM 2.5 (µg/m3)	AQI equivalent
0 to 55.4	0 to 150
55.5 to 500.4	151 to 500

For additional information, consult the California Department of Industrial Relations at www.dir.ca.gov or DTSC's Health and Safety Program.