

## DEPARTMENT OF RESOURCE MANAGEMENT

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# SOLANO COUNTY

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Environmental Health Division

(707) 784-6765

[SolanoCountyRecovers.org](http://SolanoCountyRecovers.org)

Official website for the LNU Lightning Complex fire response and recovery

## Disaster Debris Removal Program PHASE II Debris Removal and Cleanup Work Plan LNU Lightning Complex Fire

**REQUIRED:** Prior to commencing any Phase II fire debris removal and cleanup, the property owner must submit a Phase II Debris Removal and Cleanup Work Plan (Work Plan) for approval by Solano County Environmental Health.

Property owners will not be permitted to rebuild without a Phase II Certificate of Completion issued by Solano County Environmental Health.

### DEBRIS REMOVAL REQUIREMENTS

To ensure the safety of workers, the public, and the environment, all cleanup activities must be completed pursuant to standards set forth by the County, listed below. All cleanup activities must be completed in a timely manner; any/all timelines established by the County must be followed.

#### Site Safety and Personal Protective Equipment (PPE)

Safety is the primary concern for residents who begin cleanup operations on their properties. Prior to any work being done, the following protective measures should be in place.

Property owners shall ensure that contractors are properly licensed for the work they will perform and are able to meet the minimum requirements for safety and proper waste disposal as outlined in this document. Any employee performing debris removal shall have (at a minimum) OSHA 40-hr HAZWOPER Training in accordance with 29 C.F.R. §1910.120.

Proper PPE must be used at all times when handling burned debris and ash (Level C protection). 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
- Clothing - long pants and long-sleeved shirts, where necessary, Tyvek or similar protective, disposable clothing (one-piece coverall, disposable chemical resistant coveralls.)
- Hand protection - heavy work gloves
- Head protection - hard hat, if necessary
- Foot protection - shoes or boots with heavy lug soles

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**CHRIS DRAKE**  
Parks Services  
Manager  
Parks

**MISTY KALTREIDER**  
Water & Natural  
Resources Program  
Manager

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- Hearing protection - if working in an area with excessive noise from equipment such as chain saw, backhoes, tractors, or other heavy equipment

### Vehicle and Road Safety

If removal activities on property owners' parcels will create a roadway blockage or hinder traffic patterns, property owners or their contractors are responsible for obtaining an encroachment permit as required by local ordinances. As there may be many contractors actively working on remediation efforts in the burn area, it is in property owners' best interest to identify removal and remediation efforts in adjacent areas that could impact the ability to locate, park, or transport equipment and materials.

### Hazardous Materials Removal

As Phase II cleanup begins, any hazardous materials not previously found in Phase I cleanup, are to be separated from general ash and debris and disposed of legally at a household hazardous waste facility by a licensed hazardous waste hauler before the removal of ash and general debris can begin. Household hazardous waste includes items such as, batteries, propane tanks, paint, gasoline cans, cleaning products, pesticides, and fluorescent light bulbs. A list of hazardous waste haulers is provided in Appendix D. Please retain all disposal records and manifests to include in the Cleanup Completion Report.

### Asbestos Assessment and Removal

Asbestos or asbestos containing materials (ACM) may still be present on the property if it was identified by a Certified Asbestos Consultant (CAC) and not completely removed. If identified it would have been marked with paint during the Phase I debris removal visit. **ACM must be removed by a licensed Asbestos Abatement Contractor; testing and removal is required if found to be present.**

- The CAC will evaluate the property for suspect asbestos containing material.
- As chimneys are considered a free-standing structure, a full asbestos survey is required. Each standing chimney on a property will be knocked over using one to two water streams to abate potential dust and exposures. The chimney shall be pre-wetted along with the fall zone. Once the chimney is safely on the ground, the CAC shall visually observe the interior of the chimney flue for suspect materials. If no suspected asbestos materials are identified, then the debris removal may commence.
- If asbestos is discovered on the property, the CAC must submit the results of the asbestos survey including laboratory results and documentation of proper asbestos removal and disposal to the Solano County Environmental Health Division to obtain authorization to dispose of ash and debris at a properly permitted landfill.
- If bulk loading ACM, the bin or container used for transport shall be double-lined with 10-mil poly in such a way that once loaded both layers can be sealed up independently ("burrito-wrap method").

Naturally Occurring Asbestos (NOA) may be found in some areas within the perimeter of the LNU Lightning Complex fire area. If Asbestos is identified by the CAC, or for more information on NOA, contact the applicable Air Quality Management District.

### Ash, Soil, and Debris Removal and Disposal

Once hazardous materials have been cleared, ash, soil, and debris removal can begin. Work areas shall be clearly delineated and be restricted to those personnel performing the cleanup with proper PPE.

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### Dust Mitigation and Erosion Control:

Ash from structures may contain hazardous materials and therefore may present additional health and environmental risks beyond that from typical wildfire ash. Therefore, the following dust mitigation and erosion control measures must be undertaken before cleanup begins and must be maintained throughout cleanup operations:

- When active fire ends it leaves behind bare dirt or decreased vegetative cover. Because of the loss of vegetation, the top layer of soil becomes loosened, making it vulnerable to increased runoff, erosion, and sedimentation. Erosion and sediment stabilization practices must be implemented to keep sediment and debris from impacting homes.
- 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.
- Ash and debris shall be thoroughly wetted 48-72 hours in advance of 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.
- 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. Stockpiled materials may not be stored or placed in a public roadway.

### Air Monitoring Protocols for Fugitive Dust Control:

Property owners or their contractors must provide water or an approved dust palliative, or both, to prevent a dust nuisance at the site and during transport. Dust resulting from performance of the work must be controlled at all times in a manner that does not generate runoff. The contractor is required to visually monitor the cleanup site for fugitive dust. If recommended by a Certified Asbestos Consultant, the contract shall monitor the air at the site for asbestos during debris removal activities. If required, the contractor must provide air monitoring results in the Cleanup Completion Report.

Dust Control requirements include the following Control Methods:

- **Control 1:** Water or an approved dust palliative, or both, will be used to prevent dust nuisance at each site. Each area where ash and debris are to be removed will be pre-watered with a fine spray nozzle in advance of initiating debris removal and as needed during the removal.
- **Control 2:** All loads shall be covered with a tarp; this includes metal debris. Ash and debris loads shall be fully encapsulated with 10-millimeter plastic ("burrito wrap" method). If concrete loads generate dust, then the loads must be wetted and covered.
- **Control 3:** All waste material that is not unloaded at the end of each workday will be consolidated, sufficiently wetted, and/or covered to prevent the offsite migration of contaminants.
- **Control 4:** All visibly dry disturbed soil surface areas of operation should be watered to minimize dust emissions during performance of work.
- **Control 5:** Speeds must be reduced when driving on unpaved roadways.
- **Control 6:** Procedures will be implemented to prevent or minimize dirt, soil or ash contaminating roadways, neighboring parcels or creating an airborne health hazard.

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### Soil Grading:

After burn ash and debris are cleaned from the property to a level of visually clean, 3 to 6 inches of soil must be removed from the impacted area and properly disposed of at an approved landfill.

### General Handling 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.
- 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 and 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 can 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 masks during post-fire cleanup.
- Use as little water as possible when wetting ash down.

### Storage of Waste Onsite:

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.

### Disposal of Ash, Soil, and Debris:

All ash, soil and general debris shall be disposed of at an approved landfill. See Appendix C for a list of disposal sites. A receipt for waste disposal must be obtained from the landfill operator and be included in the Cleanup Completion Report.

## **Disposal of Non-Ash Materials**

Disposal of non-ash materials such as vehicles, concrete, metal, trees etc., shall be handled as follows:

- 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 and wood waste, metal, vehicles, appliances, and aggregate material should be recycled if possible.
- These materials must be cleaned sufficiently of ash and debris at the site to allow safe transportation. Landfill/recycling center staff may reject loads that appear to be contaminated.

All waste must be disposed of at a location authorized to accept such waste. See Appendix C and D for an approved list. A receipt for waste disposal must be obtained from the landfill operator and be included in the

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Cleanup Completion Report.

### Disposal/Recycling of Metal and Concrete

Property owners and their contractor(s) should recycle metals and concrete when possible. Concrete and metal should be separated and should not be over 2 feet in dimension or have exposed rebar over 5 inches. Concrete and metal must be generally free of ash and debris.

- Metal and concrete shall be rinsed down on site and over the debris pile prior to transport. Engineering controls for storm water discharges must be in place.
- Concrete and metal must be covered with a tarp prior to transport.
- Speeds must be reduced when driving on unpaved roadways.
- If recyclable materials cannot be cleaned of ash and debris, they must be handled and disposed of as mixed burned debris.
- Appliances and vehicles must be handled properly to meet the requirements of metals recycling facilities. Any remaining hazardous materials, such as car batteries, shall be managed properly. Vehicle Identification numbers shall be documented as outlined by the California Department of Motor Vehicles and provided to the salvage company.

All waste must be disposed of at a location authorized to accept such waste. See Appendix C and D for an approved list. A receipt for waste disposal must be obtained from the landfill operator and be included in the Cleanup Completion Report.

### Structural Foundation Evaluation or Removal

The structural integrity of concrete and masonry is often adversely impacted by fire making it unusable for a new structure. The foundation can be removed completely, or it can be evaluated.

If the foundation is to remain in place, the following is required:

- Evaluation by a Licensed Civil or Structural Engineer
- Engineer to submit a letter certifying the foundation is acceptable for rebuild. The letter shall state reasons for their decision.
- Approval from Solano County Building Division

### Soil Sampling

Once a property has been cleared of all hazardous materials, ash, and other debris the final steps of cleanup can take place, including verification the area has been properly cleaned. Initial Screening Criteria and protocols have been established to be in compliance with CalRecycle's typical operations plan for soil confirmation sampling after completion of visible cleanup of properties. Below are the initial health screening criteria in the absence of background data. A sketch showing the ash footprint and anticipated soil sample locations must be submitted with the work plan. See Appendix E for a list of consultants and Appendix F for detailed information on background sampling.

- Soil samples must be collected by a licensed environmental consultant and analyzed using EPA Lab Method 6020 to verify that the soil does not contain hazardous materials or heavy metals above initial health screening criteria. These samples are required for the Cleanup Completion Report.
- Soil samples must be collected from the impacted area (burn footprint) in native soil from a depth of 0-3 inches, to effectively represent the cleanup area. The number of samples will be based on the square footage of the burn footprint. Three samples must be taken at a depth of 3-9 inches outside the ash footprint (20 ft. minimum) to act as background samples to determine if naturally occurring

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levels of any metals tested are above the cleanup goals.

- If samples from the ash footprint are below the cleanup goals, the lab will not need to test the background samples. If sample results for any metals are above the cleanup goals but are at or below the background sample results, this must be adequately explained by your soil consultant in the Cleanup Completion Report.
- Should the confirmation results exceed the cleanup goals and the site-specific background, the consultant must rescape and retest the soil. The consultant may be required to execute multiple rounds of soil scraping and sampling to achieve cleanup goals.

### **Cleanup Completion Report**

Before a permit to rebuild can be issued, a Cleanup Completion Report must be submitted to Solano County Environmental Health for review and certification. See Appendix B for a full list of documents required for the Cleanup Completion Report.

- The Cleanup Completion Report shall include all documentation that supports the proper removal and disposal of hazardous wastes, asbestos, ash, debris, metal, concrete, and other materials from the property. This includes any waste manifests, landfill disposal receipts, and sampling analysis performed on the removed material
- The Cleanup Completion Report shall be checked against the submitted Work Plan; discrepancies may require additional documentation for certification.

The following attachments are included for your convenience:

- Appendix A – Page 6: Phase II Work Plan Template
- Appendix B – Page 11: Cleanup Completion Report Requirements
- Appendix C – Page 12: Solid Waste Disposal Facilities List
- Appendix D – Page 13: Recycling and Waste Contractor Resource Checklist
- Appendix E – Page 14: Environmental Consultant List
- Appendix F – Page 15: Background Sampling Requirement

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**APPENDIX A**  
**Debris Removal and Cleanup Work Plan Template**

Prior to commencing any Phase II fire debris removal and cleanup, the property owner is required to submit a Debris Removal and Cleanup Work Plan (Work Plan) for approval by Solano County Environmental Health. See the Debris Removal Requirements for detailed information on the standards for each section listed below.

Submit a completed work plan to Solano County Environmental Health in person at 675 Texas St., Fairfield, CA 94533 or by email to [EHDebrisRemoval@SolanoCounty.com](mailto:EHDebrisRemoval@SolanoCounty.com).

**1.0 Project Overview**

<b>Property Information and Property Owners</b>		
Property Owner Name:		
Property Address:	City:	Zip:
Assessor's Parcel Number (APN):		
Phone(s):	Email:	
Mailing Address:	City:	Zip:

<b>List of Contractor(s) and Consultants</b>	
Name:	License No.:
Phone:	Email:
Name:	License No.:
Phone:	Email:
Name:	License No.:
Phone:	Email:



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<b>Scope of Work:</b>
Provide a brief description of property and proposed activities (Footprint, description of structures and/or debris). Attach Photos/Sketches of ash footprint.
Identify/discuss proposed equipment material staging areas:
Identify/discuss Site Health and Safety Protocols and Traffic Control:
If applicable, damaged water wells and/or water lines on property will be addressed in the following manner:
If applicable, damaged septic systems and/or sewer lines on property will be addressed in the following manner:

<b>REQUIRED Notifications</b>
<b>The following notifications must be made:</b>
Applicable Air Quality Management District (AQMD) to determine the need for a permit and possible presence of Naturally Occurring Asbestos.  Yolo-Solano AQMD Engineering Division 530-757-3650 <a href="https://www.ysaqmd.org/news/guidance-for-lnu-lightning-complex-debris-and-demolition-cleanup/">https://www.ysaqmd.org/news/guidance-for-lnu-lightning-complex-debris-and-demolition-cleanup/</a>
Bay Area AQMD Asbestos, Compliance & Enforcement 415-749-4762
Underground Service Alert (USA) Call 811 Dig Alert prior to digging
Phase II Debris Removal and Cleanup Application and Work Plan approval from: Solano County Environmental Health 675 Texas Street, Suite 5500, Fairfield CA 94533 Phone: (707) 784-6765 Email: <a href="mailto:EHDebrisRemoval@solanocounty.com">EHDebrisRemoval@solanocounty.com</a>



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**2.0 Remaining Asbestos and Household Hazardous Waste from Phase I Asbestos & Site Testing and Analysis Plan (Asbestos and Soil)**

**Asbestos Testing, Handling and Removal Procedures**

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**Asbestos Removal Contractor**

Name:
License No.:

**Asbestos Disposal Facility(s)**

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**Hazardous Waste Handling and Removal Procedures:**

--

**Certified Hazardous Materials/Waste Contractor:**

Name:
License No.:

**Disposal and/or Recycling Facility(s):**

--

**Air Monitoring Protocols for Fugitive Dust Control**

**Additional methods dust from debris removal activities on the property will be addressed:**

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**3.0 Debris Removal and Disposal/Recycling**

Debris shall be handled in the following manner:

<b>Ash, Fire Debris and Soil Handling Procedures:</b>
<b>Contractor:</b>
Name: License No.:
<b>Metals Including Vehicles and Appliances Procedures:</b>
<b>Contractor:</b>
Name: License No.:
<b>Concrete, Brick &amp; Masonry Procedures:</b>
<b>Contractor:</b>
Name: License No.:

**4.0 Erosion Control**

<b>Description of Erosion Control Methods:</b>

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**5.0 Foundation Analysis and Plan**

<b>Structural foundations on the property will be assessed in the following manner:</b>
<b>Structural Engineer:</b>
Name:
License No.:

**6.0 Confirmation Sampling**

<b>Soil Consultant Collecting Samples</b>
Name:
License No.:
<b>State-certified Laboratory</b>
Name:
Phone:

**7.0 Required Attachments**

- Parcel Map
- Soil Sample Map: A sketch showing the ash footprint and anticipated soil sample locations
- Any/All photos, drawings, or descriptions of the property

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**APPENDIX B**  
**Cleanup Completion Report Requirements**

Index of Cleanup Completion Report Contents:

- Section 1: Property Information (Assessor's Parcel Number, Contacts for Owner/Contractor(s)/Consultants)
  
- Section 2: Description of work performed:
  - A. Air Monitoring Protocols for Fugitive Dust Implementation
  - B. Hazardous Waste and Asbestos Removal Documentation, including disposal receipts (if applicable)
  - C. Site Testing and Analyses, description and summary of results (Asbestos and Soil)
  - D. Documentation of Appliance and Vehicle Recycling or Disposal
  - E. Debris Removal Documentation, including disposal receipts
  - F. Soil Grading / Removal to level of visually clean
  - G. Foundations (Removal or Engineer's Certification for Potential Reuse)
  - H. Confirmation Sampling/Background (if needed) Results Discussion
  - I. Documentation of work related to Well and Septic
  
- Section 3: Vicinity Map, Plot Plan and Drawings
  
- Section 4: Analytical Table with results compared with Initial Health Screening Criteria
  
- Section 5: Certified Laboratory Reports

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## APPENDIX C

### Solid Waste Disposal Facilities and Hauling Companies

This list is not an exhaustive and there may be other facilities in the region able to accept waste, recycling, concrete and asphalt. It is the property owner or contractor's responsibility to determine any restrictions and requirements at the landfill.

Facility Name	Facility Address/Phone	Material Accepted
Potrero Hills Landfill	3675 Potrero Hills Ln Suisun City, CA 94585 (707) 432-4627	Non-Friable Asbestos Ash/Fire Debris, Metal/Concrete/Asphalt, Contaminated Soils, C&D Debris, Dead Animals, Green Waste  <i>Please check with the facility for tonnage limits and disposal fees</i>
Recology Hay Road Landfill	6426 Hay Rd Vacaville, CA 95687 (707) 678-4718	Friable & Non-Friable Asbestos Ash/Fire Debris, Metal/Concrete/Asphalt, Contaminated Soils, C&D Debris, Dead Animals  <i>Please check with the facility for tonnage limits and disposal fees</i>
Alco Iron & Metal	321 Azuar Drive Vallejo, CA 94592 (707) 562-1107	Scrap Metal  <i>Please contact the facility for materials accepted</i>
Concrush	5056 Peabody Road Fairfield, CA 94533 (707) 437-1239	Concrete
Go Green Asphalt	5204 N Gate Rd Fairfield, CA 94535 (707) 450-0100	Concrete Asphalt
Jepson Prairie Organics	6426 Hay Rd Vacaville, CA 95687 (707) 464-4181	Green Waste Clean Wood Waste
Recycling Zone	1973 Broadway St Vallejo, CA 94589 (707) 437-1301	Scrap Metal  <i>Please contact the facility for materials accepted</i>
Recycling Zone	4989 Peabody Rd #B Fairfield CA 94533 (707) 437-1301	Scrap Metal  <i>Please contact the facility for materials accepted</i>
Syar Industries	885 Lake Herman Road Vallejo, CA 94591 (707) 252-8711	Concrete Asphalt
VacaValley Excavation	2201 E. Monte Vista Ave Vacaville, CA 95688 707-453-1812	Concrete Asphalt
Vision Recycling Benicia	1460 Goodyear Rd Benicia, CA 94510 (707) 751-0466	Green Waste Clean Wood Waste

**Green Waste:** includes tree and yard trimmings, untreated wood wastes, natural fiber products, wood waste from silviculture and manufacturing, and construction and demolition wood waste.

**C&D Waste:** includes construction and demolition wastes including lumber and wood, gypsum wallboard, glass, metal, roofing material, tile, carpeting and floor coverings, plastic pipe, concrete, fully cured asphalt, heating, ventilating, and air conditioning systems and their components, lighting fixtures, appliances, equipment, furnishings, and fixtures.

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**APPENDIX D**  
**Recycling Resources and Waste Hauling**

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Asbury Environmental Services 7300 Chevron Way Dixon, CA 95620 707-693-6000	NRC Environmental Services 1605 Ferry Point Alameda, CA 94501 510-749-1390
ATC Associates, Inc. 1117 Lone Palm Ave., 201B Modesto, CA 95351 209-579-2221	Patriot Environmental Services 5025 Arnold Ave., Building #24, Ste. 100 McClellan, CA 95652 916-256-4914
Clean Harbors/Stericycle 4101 Industrial Way Benicia, CA 94510 707-747-6699	Ponder Environmental 4563 E Second St Benicia, CA 94510 707-748-7775
EDD Clark & Associates PO Box 3136 Rohnert Park, CA 94928 707- 792-9500	PSC Environmental Services 395 W Channel Rd. Benicia, CA 94510 707-748-3040
Emergency Construction Services, Inc. 2349 N Watney Way, Ste A Fairfield, CA 94533 707-938-2000	Ramos Environmental 1515 South River Rd West Sacramento, CA 95691 916-371-5747
Fremouw Environmental Services 6940 Tremont Rd. Dixon, CA 95620 800-559-3274	Murray Excavating Inc. 8920 Lost Horizon Rd. Latrobe, CA 95682 916-798-0108

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**APPENDIX E**  
**Environmental Consultant List**

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AEI Consultants 2500 Camino Diablo Walnut Creek, CA 94597 925-746-6000	Cardno 601 N. McDowell Blvd. Petaluma, CA 94954 707-766-2000	Geo-Logic Associates 1300 Clay St., Ste 600 Oakland, CA 94612 800-933-3105
Alisto Engineering 2737 N Main St., #200 Walnut Creek, CA 94597 925-279-5000	Central Valley Environmental, Inc. 9718 Fair Oaks Blvd., Ste C Fair Oaks, CA 95628 916-863-1785	Golder Associates 1000 Enterprise Way, Ste 190 Roseville, CA 95678 916-786-2424
Antea Group 11010 White Rock Rd., Ste 140 Rancho Cordova, CA 95670 800-477-7411	Controlled Environmental Services 50 Sand Creek Rd., Ste. 330 Brentwood, CA 94513 925-625-1736	Grayland Environmental 1807 Valdora St. Davis, CA 95618 530-756-1441
Blankenship and Associates 1590 Drew Ave, Ste 120 Davis, CA 95616 530-757-0941	Cook Environmental Services 1485 Treat Blvd. Walnut Creek, CA 94597 925-787-6869	Ground Zero Analysis 1172 Kansas Ave. Modesto, CA 95351 209-522-4119
Broadbent 1324 Mangrove Ave., Ste 212 Chico, CA 95926 530-566-1400	ECM Group 290 W Channel Rd. Benicia, CA 94510 707-751-0655	JE Compliance Services, Inc. 12505 N. Main St. Ste 212 Rancho Cucamonga, CA 91730 909-483-3300
Brunsing Associates, Inc. P.O. Box 588 Windsor, CA 95492 707-838-3027	EDD Clark & Associates, Inc. P.O. Box 3136 Rohnert Park, CA 94928 707-792-9500	Network Environmental Systems 1141 Sibley St. Folsom, CA 95630 916-353-2360
BSK & Associates 3140 Gold Camp Dr., Ste 160 Rancho Cordova, CA 95670 916-853-9293	Environmental and Geological Solutions 304 Belle Ct El Dorado Hills, CA 95762 916-358-3719	PES Environmental 7665 Redwood Blvd., Ste 200 Novato, CA 94945 415-899-1600
CAL INC 2040 Peabody Rd. Vacaville, CA 95687 707-446-7996	GeoCon, Inc. 2420 Martin Rd., Ste 380 Fairfield, CA 94534 925-337-9533	Phillips Services Corp 395 W Channel Dr. Benicia, CA 94510 800-800-7z472
SHN Consulting Engineers & Geologist 812 W Wabash Ave. Eureka, CA 95501 707-441-8855	Steve Muir Consulting 18826 N Lower Sacramento Rd. Woodbridge, CA 95258 209-601-6694	Stratus Environmental, Inc. 3330 Cameron Park Dr., Ste 550 Cameron Park, CA 95682 530-672-4017
Terracon Consultants  1466 66th St. Emeryville, CA 94606 510-923-1661	Tetra Tech  3101 Zinfandel Dr., Ste 200 Rancho Cordova, CA 95670 916-853-1800	Trident Environmental & Engineering 110 L St., Ste 1 Antioch, CA 94509 925-706-6931
Wallace Kuhl & Associates, Inc. 3050 Industrial Blvd. West Sacramento, CA 95691 916-372-1434	Youngdahl & Associates, Inc. 1234 Glenhaven Ct. El Dorado Hills, CA 95762 916-933-0633	Environmental Geology Services P.O. Box 751591 Petaluma, CA 94975 707-528-0810



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**APPENDIX F**  
**Background Sampling**

As no regional background data exists for this event, baseline sampling should be conducted under the supervision of a professionally licensed environmental consultant 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 sampling 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. Please note, these are to be three discreet samples analyzed separately and shall not be composited into one.
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 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:

<b>Estimated Square Footage of Ash Footprint (Decision Unit)</b>	<b>Number of 5- Point Aliquots</b>
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.

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All confirmation samples shall be collected from a depth of 0-3 inches using a dedicated 4-ounce plastic scoop and mix such samples (homogenized) in a one-gallon plastic bag before placing them in 8-ounce jars. Samples shall be shipped using chain of custody documentation to a California ELAP Certified laboratory and analyzed for 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.

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### 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.