United Policyholders™

Roadmap to Recovery Program℠

Working with an Industrial Hygienist

Roadmap to Recovery(R) Workshop

May 4, 2022

2021 Marshall Fire

If you'd like to follow the slide deck tonight

uphelp.org/events/partial-losses-working-with-an-industrial-hygienist/

www.uphelp.org/events

Register for upcoming events. View recordings of past events and related resources.

About United Policyholders (UP)

- Reputable, established 501(c)3 not-for-profit charitable organization, Platinum Guide Star rating
- A trusted information resource and respected voice for insurance consumers in all 50 states
- 30 year track record and expertise in disaster recovery
- Not for profit…not for sale
- Funded by donations and grants

Team UP

- Professional staff
- Government, Business, Nonprofit partners
- Volunteers
  - Survivor to Survivor - previous catastrophic loss survivors paying it forward
  - Consumer oriented professionals
    - Damage and repair/rebuild cost estimators
    - Lawyers
    - Public Adjusters
    - Tax and Financial Planning experts
    - Construction and Real Estate professionals

Our Three Programs

Roadmap to Recovery®

- Guidance on insurance, restoring assets and getting back home after a catastrophic loss

Roadmap to Preparedness

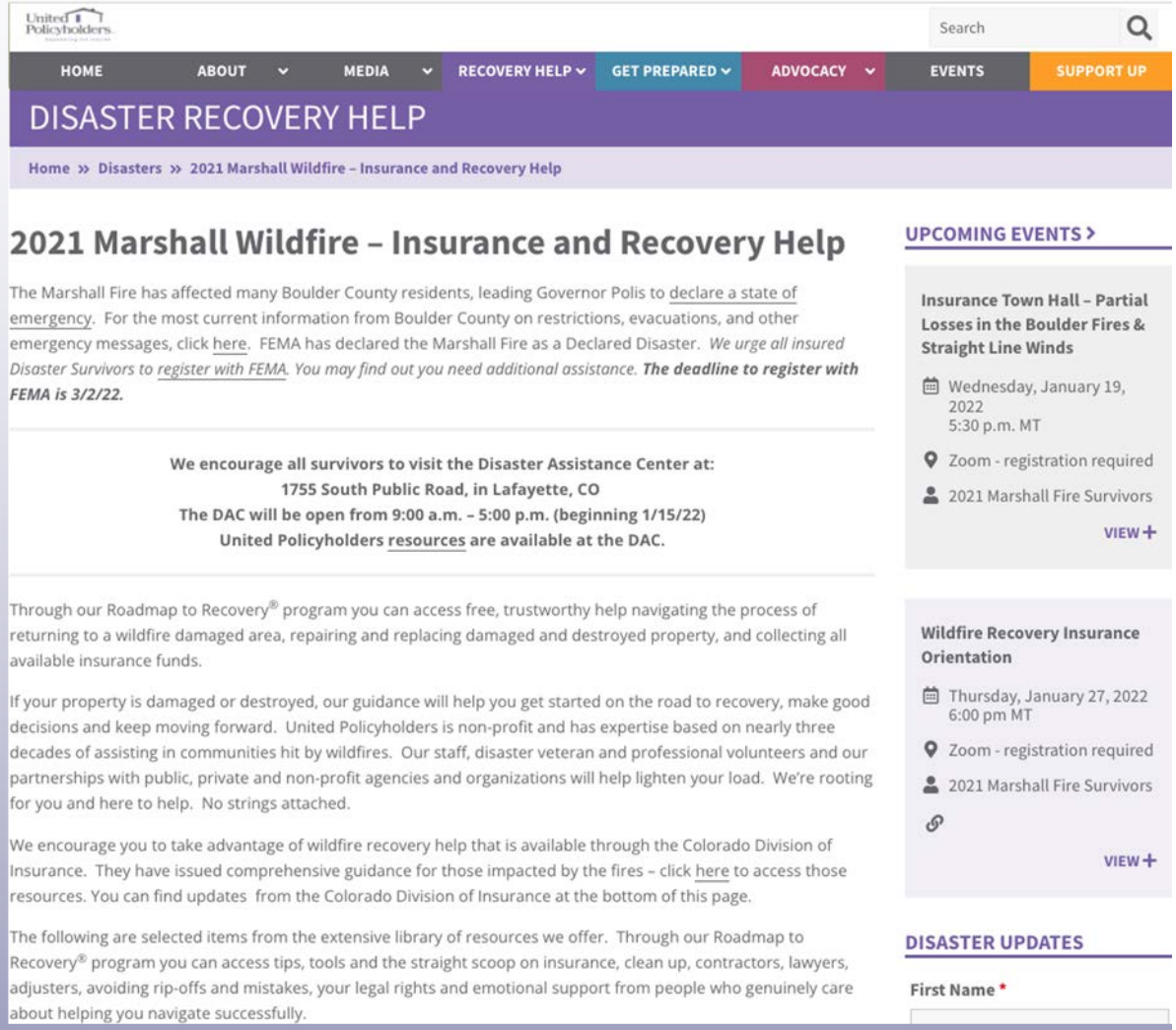
- Helping households and communities reduce risk and be resilient to disasters and adversity

Advocacy and Action

- Upholding insurance consumer rights and protections

2021 Marshall Fire Help Library
www.uphelp.org/MarshallFire

- Colorado Specific Resources with Step-by-Step Guidance
- One Click Links to Sign UP for Events And Email Notifications
- Links to Pro-consumer Professional Help www.uphelp.org/findhelp
- Sample Letters & Claim Forms www.uphelp.org/samples
- Survivors Speak Tips www.uphelp.org/survivorsspeak
- Upcoming Workshops and Resources www.uphelp.org/events



Upcoming Roadmap to Recovery® Events

Wildfire-Prepared Resilient Rebuilding
(for CA 2020 and CA 2021 wildfire survivors)
Wednesday, May 11, 5:00 p.m. PT / 6:00 p.m. MT (*www.uphelp.org/may11*)

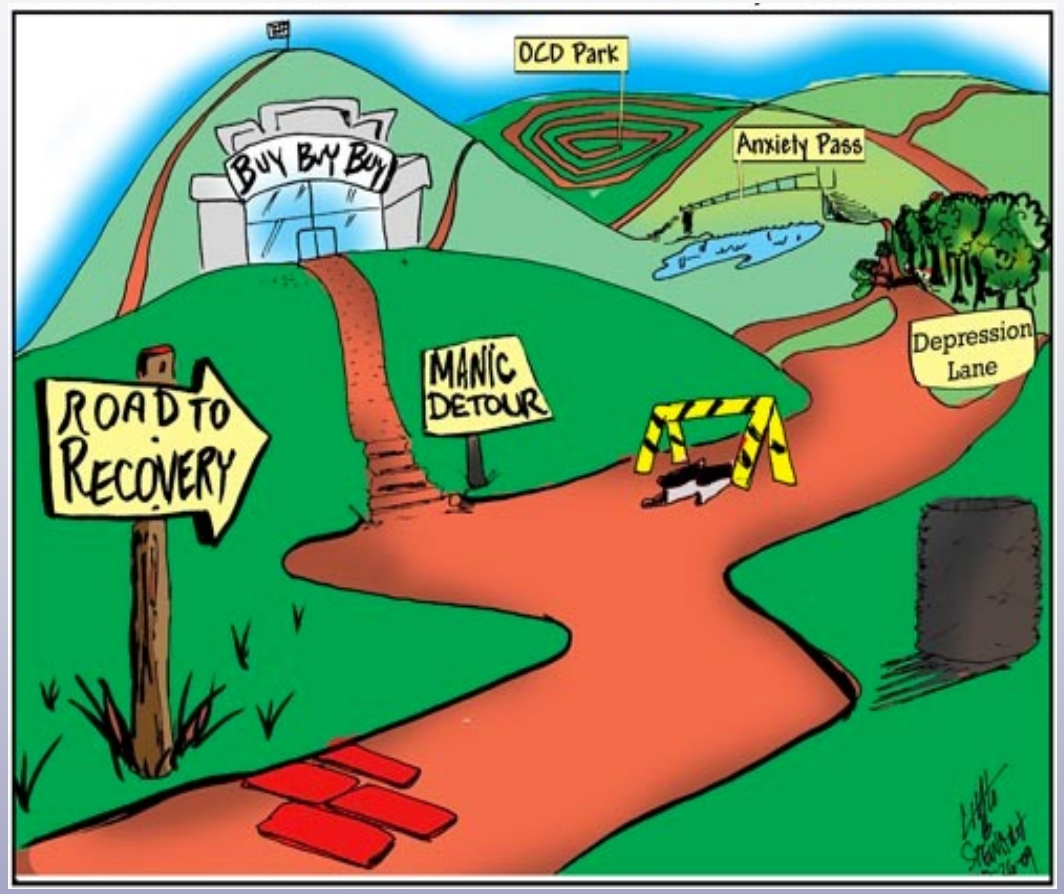
Survivor to Survivor Forums
Tuesday, May 3, 8:00 p.m. MT (*www.uphelp.org/may3*)
Tuesday, May 17, 8:00 p.m. MT (*www.uphelp.org/may17*)

Partial Loss Workshop Series #2
Remediation and Insurance Claim Best Practices
Wednesday, May 18, 6:00 p.m. MT (*www.uphelp.org/may18*)

Partial Loss Workshop Series #3
Survivor to Survivor Forum for Partial Losses
Tuesday, May 24, 5:00 p.m. MT (*www.uphelp.org/may24*)

Partial Loss Workshop Series #4
Q&A on Smoke Issues for Marshall Fire Survivors
Wednesday, May 25, 6:00 p.m. MT (*www.uphelp.org/may25*)

Recovering from a disaster is a marathon, not a sprint!



Thank you to our Donors and Funders

COMMUNITY FOUNDATION BOULDER COUNTY

INSPIRING IDEAS. IGNITING ACTION.®

The Fine Print

- This workshop is intended to be general guidance only, not legal advice
- If you have a specific legal question, we recommend you consult an experienced attorney
- We do not endorse or warrant any of the sponsors or the speakers at our workshops
- We are not creating a professional/client relationship with any individual

United Policyholders™
Roadmap to Recovery Program™

Today's Presenters & Partners

UP staff

Amy Bach, Executive Director, United Policyholders

Valerie Brown, Deputy Executive Director, United Policyholders

Annie Barbour, Local Recovery Liaison

Professional volunteers

Dawn Bolstad-Johnson, Kaizen Safety Solutions, Certified IH

Jeanine Humphrey, Certified Indoor Air Quality Professionals, IH

Michael Richen, County of Boulder Public Health, Indoor Air Quality, IH

Today's Topics

1. Finding and Vetting an IH
2. Working with and Paying an IH
3. Report prep best practices
4. How to read your IH Report
5. Interpreting results into practical action for your home – cleaning and remediation

Lingo

Do I want/need expert, professional help?

- Complex claims often with many trades involved
- Standards vary based on what toxigenic chemicals are found and relevant regulations, no clear ‘universal standards’ for smoke damages
- Remediation methods vary widely (proximity is key factor)
- Hidden or “latent” damages should be thoroughly evaluated and properly documented by industry professionals
- “Captive” experts hired and paid by the insurer are not independent and may have a very limited scope of work
- There is limited regulatory help for partial loss survivors
- Balance time availability and quality of life with costs

When do I *NEED* testing for smoke damages?

- Your (non-qualified/certified) adjuster declares that your home is “perfectly safe”, habitable and requires only ”standard cleaning” but you have a reasonable belief that it may contain smoke residues
- A family member, occupant, has a medical condition that makes you particularly vulnerable to exposure to smoke particulates
- You want/need post-remediation peace-of-mind or clearance (due to medical issues)
- Your home is in the red zone from a wildfire

WHO should do testing?

- Certified Industrial Hygienist
  - Most qualified
  - Generally most expensive (~$5,000-$15,000)
  - Will typically provide next steps, risks
- Indoor Air Quality Professional
  - Experienced professional/certifications vary – need specific experience with smoke (not just mold)
  - Solid testing protocols & chain of custody
  - Usually more cost effective (~$1,200 - $5,000)
- Certified Remediation Professional
  - Can often provide enough to trigger coverage
  - Often free, or low hourly $

Where to find an IH

- Word of mouth
- Online research
- American Industrial Hygiene Association
  - aiha.org/consultants-directory
- Board for Global Credentialing
- Ask your Remediation company for recommendations

Making your case

- **You choose the testing and testers**
- **Pay them yourself** and get reimbursed from insurer to help ensure they are not “captive”
- Try to get Insurer approval of payment in advance
- **Make clear requests in writing** – use language from policy and statutes
- Go up the chain of command in writing
- File a formal complaint with the DOI / Insurance Com
- **Back up your requests with documentation** of your damage and/or that the inspectors were not qualified or were biased

Q1. Where to Get Unbiased Protocol for Mitigation

What objective measures/tests should be done prior to mitigation?

Where can I get unbiased scientific protocol for mitigating my house and have the results interpreted for internal living spaces? There seems to be a lot of different opinions among “experts” with the same test results on the proper protocol process. (Sandy H.)

Q2. What is difference in risk now vs when fire happened?

What the difference in risk from these hazards between when the fire was burning and now when the wind blows debris?

Q3. What's the deal with soft goods?

How much and what do we need to toss? We on our own packed out contents, tossed all mattresses, pillows, most upholstered furniture, wicker, etc. What's safe?

The only one in my house who can smell it and everyone else wants to keep their clothes because they say they smell fine. If there's still a smell, can it be harmful?

Why does one adjuster say do whatever is needed and another denies everything to houses side by side with similar damage? He is not willing to agree to replacing any soft goods. Wants to only clean everything. Not willing to budge on anything except cleaning.

How to Vet

- Check references
- Ask questions
  - What labs do you use? Are they certified?
  - What qualifications do you hold?
  - What smoke experience levels do have? How long? Can you provide a sample report?
  - What regulations are you following?
  - What sampling plan/approach do you take?

WORKING WITH AND PAYING AN IH

Hiring an IH

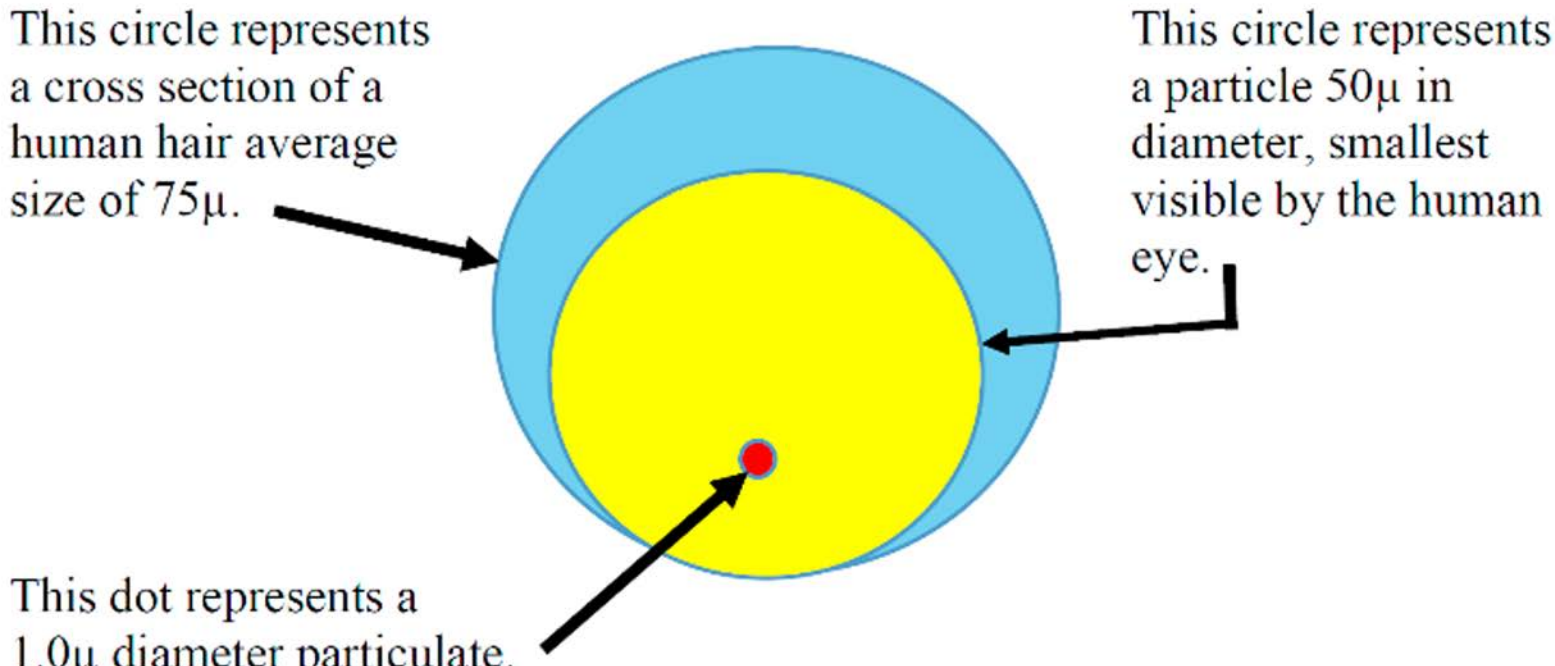
- IHs generally charge hourly rates for report writing, commute/travel, and testing
- Typically focused on soot, char, and ash testing, which is what insurance wants. Want to include Particulate testing
- IH testing and samples collected generally limited, so reach an agreement beforehand what testing is needed
- VOC testing - Occupational standards should not be applied to homes (based on 8 hours/day, no more than 40 hours/week) As homeowner you have 24/7 exposure - if you are only getting a test for 2 hours, be aware it is not representative of what your actual exposure is in the home. (NIOSH and OSHA guidelines)

HOW TO READ YOUR IH REPORT

Wildfire smoke

SMOKE PARTICULATES

The average size of most combustion smoke particulates, in a fire, range between .1-4 microns (1 micron = 1 thousandth of 1 millimeter; 1 millionth of 1 meter; or 1/25th of an inch). Micron symbol is - μ.



What else is in there?

- Smoke residue is what remains after the smoke dissipates, and the particles settle on surfaces.
- Will find larger particulate concentrations PM2.5 (measure in 5-7 different cut sizes)
- Combustion releases small molecular-weight polycyclic aromatic hydrocarbons (PAHs), volatile organic compounds (VOCs), and various chemicals such as benzene and aldehydes. The composition of soot varies depending on the hydrocarbons being burnt.

(Patrick Moffett, Wildfire Glossary of Terms and Definitions ©)

Particulate matter

- SMOKE: The airborne solid and liquid particulates and gases produced when a material undergoes partial combustion. Incomplete combustion of carbon-based materials
- CHAR: Particles generally larger than 1 micron, that retain the characteristics of the burned material
- ASH: The residue left after complete combustion
- SOOT: Fine black particles – mainly carbon – plus residual gas particles resulting from incomplete combustion. Can be acidic/damaging
- VOCs: Gas in the smoke (Volatile Organic Compounds)

Soot, Char, and Ash

Sample Type (Air, Wipe or Tape)	Location	Sample Results	Comments
Air 7386	Living Room	Soot- 13/m3 Char- 90/m3 Ash- <LOQ	To convert a cubic centimeter measurement to a liter measurement, divide the volume by the conversion ratio. The volume in liters is equal to the cubic centimeters divided by 1,000.
W1	Master Bedroom	Black Carbon- ND Char- 5% Ash- ND Opaque Particles- 13%	
W2	Laundry Room	Black Carbon- ND Char- 5% Ash- ND Opaque Particles- 12%	
W3	Contents in Totes (Basement)	Black Carbon- <1% Char- 2% Ash- ND Opaque Particles- 15%	
W4	Personal Item Surfaces in Basement	Black Carbon- ND Char- 3% Ash- ND Opaque Particles- 10%	
W5	Walls in Basement	Black Carbon- ND Char- 5% Ash- ND Opaque Particles- 10%	

Surface Dioxin and Furin

Sample ID:	0322-780-001-1	**Client Sample ID:**	V1
Date Extracted:	18-Mar-2022	**Matrix:**	Solid
Date Received:	18-Mar-2022	**Specimen Type:**	fiber and dust
Date Analyzed:	06-Apr-2022	**Report Date:**	07-Apr-2022

Tests Performed: Comprehensive & Stable Isotope-Dilution Gas Chromatography-Mass Spectrometry

Analysis of diagnositc polychlorinated dibenzo-p-dioxin and polychlorinated dibenzofurans, and homologs in accordance with approved EPA Modified Method 8290.

Analytical Report

Diagnotic Ratios	Ratio	Expected Range
1,3,6,8 TCDD : Total TCDD	0.557	0.1-0.5
1,2,3,4,6,8 HxCDD : Total HxCDD	0.998	0.4-0.8
1,3,4,9 TCDF : 2,3,7,8 TCDF	N/A	0.5-2
1,2,6,7 TCDF : 2,3,7,8 TCDF	N/A	0.5-2
2,3,4,6/1,2,4,9 TCDF : 2,3,7,8 TCDF	N/A	0.5-2
2,3,4,7/1,2,7,9 TCDF : 2,3,7,8 TCDF	N/A	0.5-2
2,3,4,8 TCDF : 2,3,7,8 TCDF	N/A	0.5-2
1,2,4,6,7,8/1,3,4,6,7,8 HxCDF : Total HxCDF	1.00	0.15-0.35

Totals	Amount Found (pg/g)
Total tetrachlorodibenzo-p-dioxins	5.82
Total pentachlorodibenzo-p-dioxins	ND
Total hexachlorodibenzo-p-dioxins	2.39
Total heptachlorodibenzo-p-dioxins	15.4
Total octochlorodibenzo-p-dioxins	72.6
Total tetrachlorodibenzofurans	2.85
Total pentachlorodibenzofurans	ND
Total hexachlorodibenzofurans	2.41
Total heptachlorodibenzofurans	ND
Total octochlorodibenzofurans	5.22

	TEQ (pg/g)
ITEQ (ND=0; EMPC=0)	0.155
ITEQ (ND=1/2EDL;EMPC=1/2EDL)	1.45
ITEQ (ND=EDL EMPC=EDL)	2.75
ITEQ (ND=0; EMPC=EMPC)	0.155
ITEQ (ND=1/2EDL; EMPC=EMPC)	1.45
ITEQ (ND=EDL; EMPC=EMPC)	2.75
WTEQ (ND=0; EMPC=0)	0.100
WTEQ (ND=1/2EDL;EMPC=1/2EDL)	1.56
WTEQ (ND=EDL EMPC=EDL)	3.02
WTEQ (ND=0; EMPC=EMPC)	0.100
WTEQ (ND=1/2EDL; EMPC=EMPC)	1.56
WTEQ (ND=EDL; EMPC=EMPC)	3.02

Assessment: There is insufficient information for a definitive determination that the dioxin/furan content of this sample originates from a combustion source.

Volatile Organic Compounds (VOCs)

03/01/22 12:52 −12:52 = 24.00

03/02/22 Main Level

VOC testing. Was told this is all in the "norma range" of what to expect in a house. Nothing abnormal from a VOC perspective. This test does not look at overall air quality. Those results indicated Char in my indoor air. Those results are posted too.

Badge No 107606		
Name	PPB	ug/m3
Ethyl Alcohol	85.04	159.87
Acetone	10.22	24.53
Isopropyl Alcohol	174.88	430.20
	total	614.60

Heavy Metals

Metals (Total) by EPA 6000/7000 Series Methods - Quality Control

Enthalpy Analytical

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BFB0175 - SW3050B										
Blank (BFB0175-BLK1)				Prepared: 02/04/2022 Analyzed: 02/07/2022						
Zinc	<0.500 mg/kg	0.500	mg/kg							
Cadmium	<0.200 mg/kg	0.200	mg/kg							
Chromium	<0.500 mg/kg	0.500	mg/kg							
Cobalt	0 200 mg/kg	0 200	mg/kg							
Copper	<2.50 mg/kg	2.50	mg/kg							
Lead	<0.500 mg/kg	0.500	mg/kg							
Nickel	<0.500 mg/kg	0.500	mg/kg							
ilver	0 500 mg/kg	0 500	mg/kg							
Vanadium	<0.500 mg/kg	0.500	mg/kg							
Arsenic	<1.00 mg/kg	1.00	mg/kg							
LCS (BFB0175-BS1)				Prepared: 02/04/2022 Analyzed: 02/07/2022						
Silver	4.81 mg/kg	0.500	mg/kg	4.63	mg/kg	104	80-120			
Nickel	94.0 mg/kg	0.500	mg/kg	92.7	mg/kg	101	80-120			
Lead	96.0 mg/kg	0.500	mg/kg	92.7	mg/kg	104	80-120			
Copper	93 0 mg/kg	2 50	mg/kg	92 7	mg/kg	100	80 120			
Cobalt	93.9 mg/kg	0.200	mg/kg	92.7	mg/kg	101	80-120			
Chromium	93.0 mg/kg	0.500	mg/kg	92.7	mg/kg	100	80-120			
Vanadium	92.5 mg/kg	0.500	mg/kg	92.7	mg/kg	99.8	80-120			
Arsenic	91 4 mg/kg	1 00	mg/kg	92 7	mg/kg	98 6	80 120			
Zinc	90.7 mg/kg	0.500	mg/kg	92.7	mg/kg	97.9	80-120			
Cadmium	92.1 mg/kg	0.200	mg/kg	92.7	mg/kg	99.3	80-120			
Matrix Spike (BFB0175-MS1)	**Source: 22B0293-01**			Prepared: 02/04/2022 Analyzed: 02/07/2022						
Zinc	141 mg/kg	4.74	mg/kg	94.8	57.6 mg/kg	88.0	75-125			
Cadmium	90.3 mg/kg	1.90	mg/kg	94.8	<1.90 mg/kg	95.2	75-125			
Chromium	120 mg/kg	4.74	mg/kg	94.8	20.3 mg/kg	105	75-125			
Cobalt	111 mg/kg	1 90	mg/kg	94 8	18 0 mg/kg	98 0	75 125			
Copper	134 mg/kg	23.7	mg/kg	94.8	37.0 mg/kg	102	75-125			
Lead	82.2 mg/kg	4.74	mg/kg	94.8	7.53 mg/kg	78.8	75-125			
Nickel	120 mg/kg	4.74	mg/kg	94.8	25.3 mg/kg	99.6	75-125			
ilver	4 74 mg/kg	4 74	mg/kg	4 74	4 74 mg/kg		75 125			M2

Certificate of Analysis

Final Report

Client Name:

Date Issued: March 30, 2022 14:01
Project Number:
Purchase Order:

Submitted To:
Client Site I.D.

Laboratory Order ID:

Analytical Results

Sample I.D. HM1 **Laboratory Sample ID:**

Grab Date/Time: 03/19/2022 08:30

Field Residual Cl: **Field pH:**

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Metals (Total) by EPA 6000/7000 Series Methods									
Silver	01	SW6010D	<0.500 ug/samp.		0.500	1	03/28/22 14:45	03/29/22 16:33	ATW
Arsenic	01	SW6010D	<1.00 ug/samp.		1.00	1	03/28/22 14:45	03/29/22 16:33	ATW
Cadmium	01	SW6010D	<0.200 ug/samp.		0.200	1	03/28/22 14:45	03/29/22 16:33	ATW
Cobalt	01	SW6010D	<0.200 ug/samp.		0.200	1	03/28/22 14:45	03/29/22 16:33	ATW
Chromium	01	SW6010D	<0.500 ug/samp.		0.500	1	03/28/22 14:45	03/29/22 16:33	ATW
Copper	01	SW6010D	**3.01 ug/samp.**		2.50	1	03/28/22 14:45	03/29/22 16:33	ATW
Nickel	01	SW6010D	**0.5483 ug/samp.**		0.5000	1	03/28/22 14:45	03/29/22 16:33	ATW
Lead	01	SW6010D	<0.500 ug/samp.		0.500	1	03/28/22 14:45	03/29/22 16:33	ATW
Vanadium	01	SW6010D	<0.500 ug/samp.		0.500	1	03/28/22 14:45	03/29/22 16:33	ATW
Zinc	01	SW6010D	**67.6 ug/samp.**		0.500	1	03/28/22 14:45	03/29/22 16:33	ATW

Analytical Summary

Administrative **Preparation Method:**

Sample ID	Preparation Factors Initial / Final	Method	Batch ID	Sequence ID	Calibration ID
Metals (Total) by EPA 6000/7000 Series Methods		**Preparation Method:**	**SW3050B-ICP**		
22C1335-01	1.00 Wipe / 50.0 mL	SW6010D	BFC1086	SFC1135	AC20176

Certificate of Analysis

Final Report

Client Name:

Date Issued: February 07, 2022 17:06
Project Number:
Purchase Order:

Submitted To:
Client Site I.D.:

Laboratory Order ID: 22B0259

Analytical Results

Sample I.D. **Laboratory Sample ID:**

Grab Date/Time: 01/28/2022 00:00

Field Residual Cl: **Field pH:**

Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Metals (Total) by EPA 6000/7000 Series Methods									
Silver	01	SW6010D	<2.49 mg/kg		2.49	5	02/04/22 15:30	02/07/22 12:41	ATW
Arsenic	01	SW6010D	**7.40 mg/kg**		4.97	5	02/04/22 15:30	02/07/22 12:41	ATW
Cadmium	01	SW6010D	<0.994 mg/kg		0.994	5	02/04/22 15:30	02/07/22 12:41	ATW
Cobalt	01	SW6010D	**6.28 mg/kg**		0.994	5	02/04/22 15:30	02/07/22 12:41	ATW
Chromium	01	SW6010D	**15.5 mg/kg**		2.49	5	02/04/22 15:30	02/07/22 12:41	ATW
Copper	01	SW6010D	**24.6 mg/kg**		12.4	5	02/04/22 15:30	02/07/22 12:41	ATW
Nickel	01	SW6010D	**13.1 mg/kg**		2.49	5	02/04/22 15:30	02/07/22 12:41	ATW
Lead	01	SW6010D	**34.0 mg/kg**		2.49	5	02/04/22 15:30	02/07/22 12:41	ATW
Vanadium	01	SW6010D	**27.1 mg/kg**		2.49	5	02/04/22 15:30	02/07/22 12:41	ATW
Zinc	01	SW6010D	**147 mg/kg**		2.49	5	02/04/22 15:30	02/07/22 12:41	ATW

Analytical Summary

Sample ID	Preparation Factors Initial / Final	Method	Batch ID	Sequence ID	Calibration ID
Metals (Total) by EPA 6000/7000 Series Methods		**Preparation Method:**	**SW3050B**		
22B0259-01	1.01 g / 50.0 mL	SW6010D	BFB0175	SFB0182	AB20038

January 3, 2022
VRBO Rental – Santa Rosa, CA
Particulate Concentrations

Time	Rental House – Santa Rosa	Particulate cut sizes					
		0.3 µm	0.5 µm	1.0 µm	3.0 µm	5.0 µm	10 µm
11:35	Outside front door – light rain (drizzle)	46,252	29,643	14,163	2,178	496	46
11:37	Outside driveway – light rain (drizzle)	47,511	30,180	15,156	2,626	634	48
	AVERAGE OUTSIDE	**46,881**	**29,911**	**14,659**	**2,402**	**565**	**47**
11:33	Kitchen	25,195	12,950	3,262	346	140	40
11:39	Living Room	25,187	12,485	2,997	280	99	21
11:41	Laundry Room (Dryer on)	25,833	13,204	3,384	304	110	27
11:43	Bathroom	27,604	14,297	3,728	246	57	8
11:44	Master Bedroom	24,968	12,686	3,077	244	83	10
11:47	Lower Level Guest Bedroom	25,689	13,485	3,585	185	30	3
11:49	Lower Level TV Room	27,532	14,681	4,135	281	74	12
11:52	Lower Level Twin bed Guest room	19,754	9,272	2,024	84	16	1

October 2021 (Camp) POST-FIRE PARTICULATE SAMPLING

- 3 years post-fire
- All carpeting had been removed.
- Soft goods removed or disposed of.
- Attic insulation still in place.
- Wall insulation still in place.
- Fire burned the fence in the backyard near bedroom #2.

Time	Sample Location	Particulate Cut Sizes					
		0.3 µm	0.5 µm	1.0 µm	2.0 µm	5.0 µm	10 µm
OUTSIDE AVERAGE		44,157	5,302	1,650	394	133	21
0920	3" off floor - Garage NE Corner	48,602	18,370	11,457	4,022	1736	292
0924	2.5' off floor – Garage NE Corner	52,846	22,605	14,550	5,017	2,125	380
0927	5' off floor – Garage NE Corner	25,437	19,203	14,463	4,837	2,021	341
0936	3" off floor – Garage SE Corner	64,313	30,981	20,423	7,809	3,690	847
0942	5' off floor – Garage SE Corner	47,638	16,861	9,980	3,047	1,176	160
0945	3" off floor – Garage Center	60,314	28,259	18,476	6,922	3,304	778
0948	2.5' off floor – Garage Center	49,934	18,579	11,295	3,460	1,383	217
0951	5' off floor – Garage Center	51,462	20,317	12,534	4,096	1,611	263
0954	3" off floor – Garage NW Corner	60,404	27,682	18,025	6,432	2,880	576
1006	2.5' off floor – Garage SW Corner	59,558	27,448	17,166	5,424	2,207	362
1008	5' off floor – Garage SW Corner	65,522	32,321	21,000	6,903	2,795	421
1010	3" off floor – Bedroom 2 NE Corner	106,477	69,460	46,237	17,440	8,586	2,297
1013	2.5' off floor – Bedroom 2 NE Corner	145,498	104,155	71,919	27,994	12,329	2,796
1016	5' off floor – Bedroom 2 NE Corner	159,610	115,984	79,647	28,786	12,849	2,440
1018	3" off floor – Bedroom 2 SE Corner	143,246	101,865	70,759	25,368	11,140	2,113
1021	2.5' off floor – Bedroom 2 SE Corner	143,399	101,493	70.255	25,333	11,442	2,199
1023	5' off floor – Bedroom 2 SE Corner	124,050	83,847	55,701	19,498	8,675	1,714
1028	3" off floor – Bedroom 2 SW Corner	108,797	70,753	47,178	17,354	8,066	1,754

Q4. What do these lab results actually mean? It sounds very scary.

"Many in the ‘smoke remediation’ group are getting lab testing that is coming back with dangerous chemicals. Insurance is sending out testers that say everything is fine, but they don’t test for much at all, and then won’t pay ALE or to damage-out the still-contaminated items. Why are they allowed to ignore science? (Kimberly R.)"

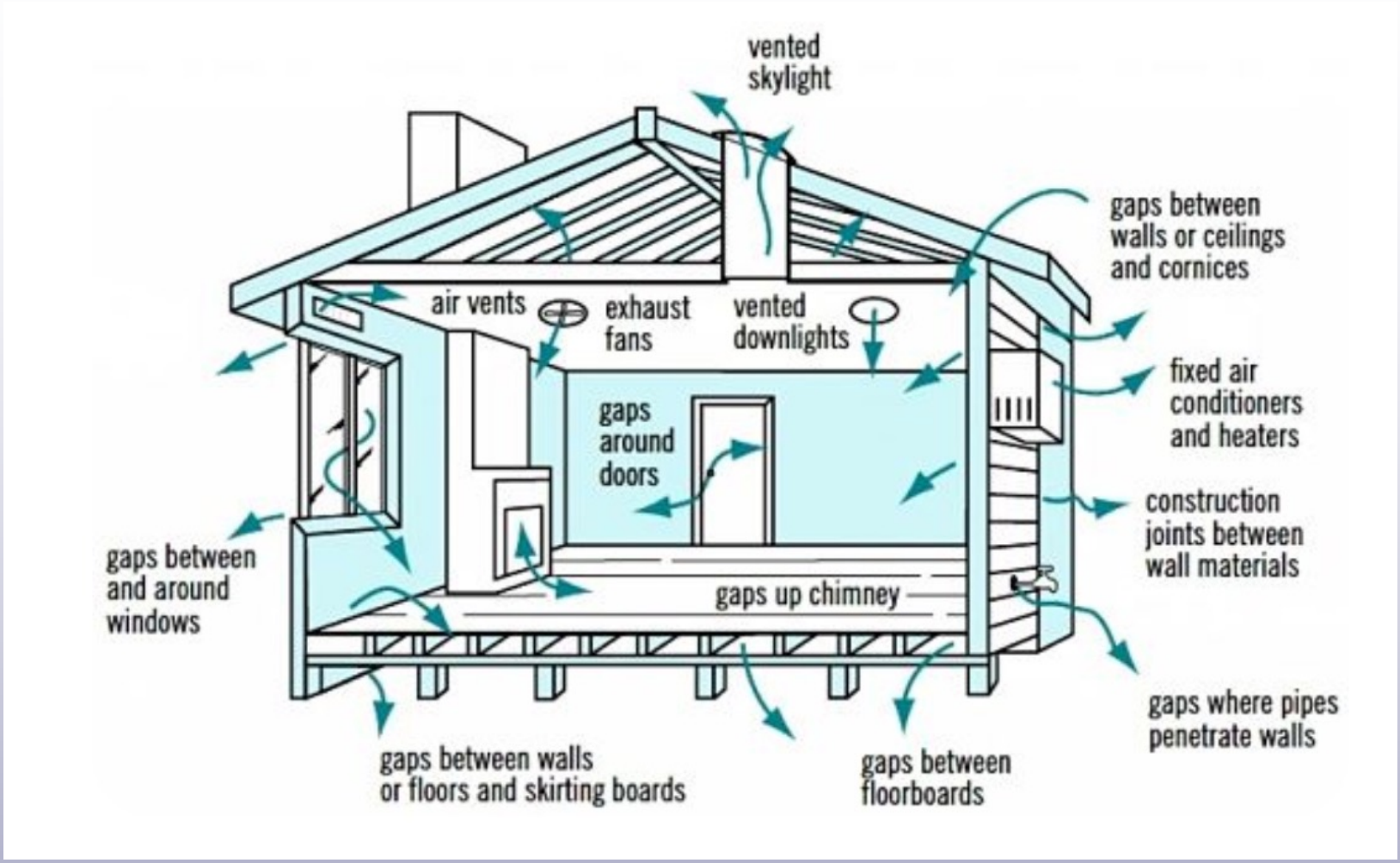
Q5. What about hidden health dangers?

What about hidden health dangers in things like carpet, furniture, plastics? Can they be cleaned, should they be thrown away?

Commonly overlooked areas to test

- Indoor air quality
- Ducts (Was A/C or heater on or off?)
- Chimneys
- Attics and crawlspaces
- Ceiling nooks
- Insulation (sponge)
- Underlayment, sheathing
- Subfloors
- Wall cavities

How houses “breathe”

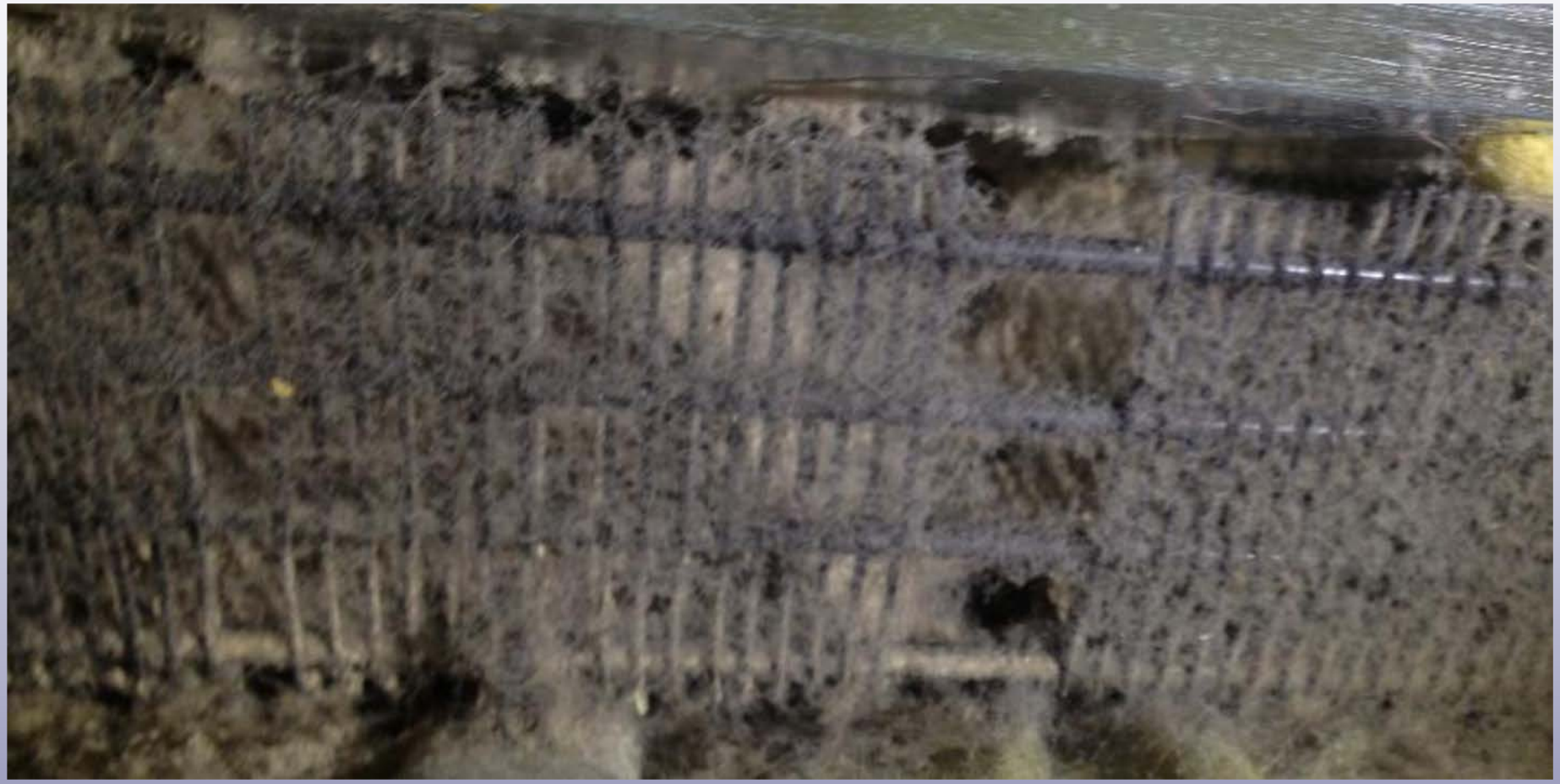


Deep, Deep Breath

Visible soot/char/ash was observed at the base of the west sliding glass door.

Refrigerator coils covered in particulates

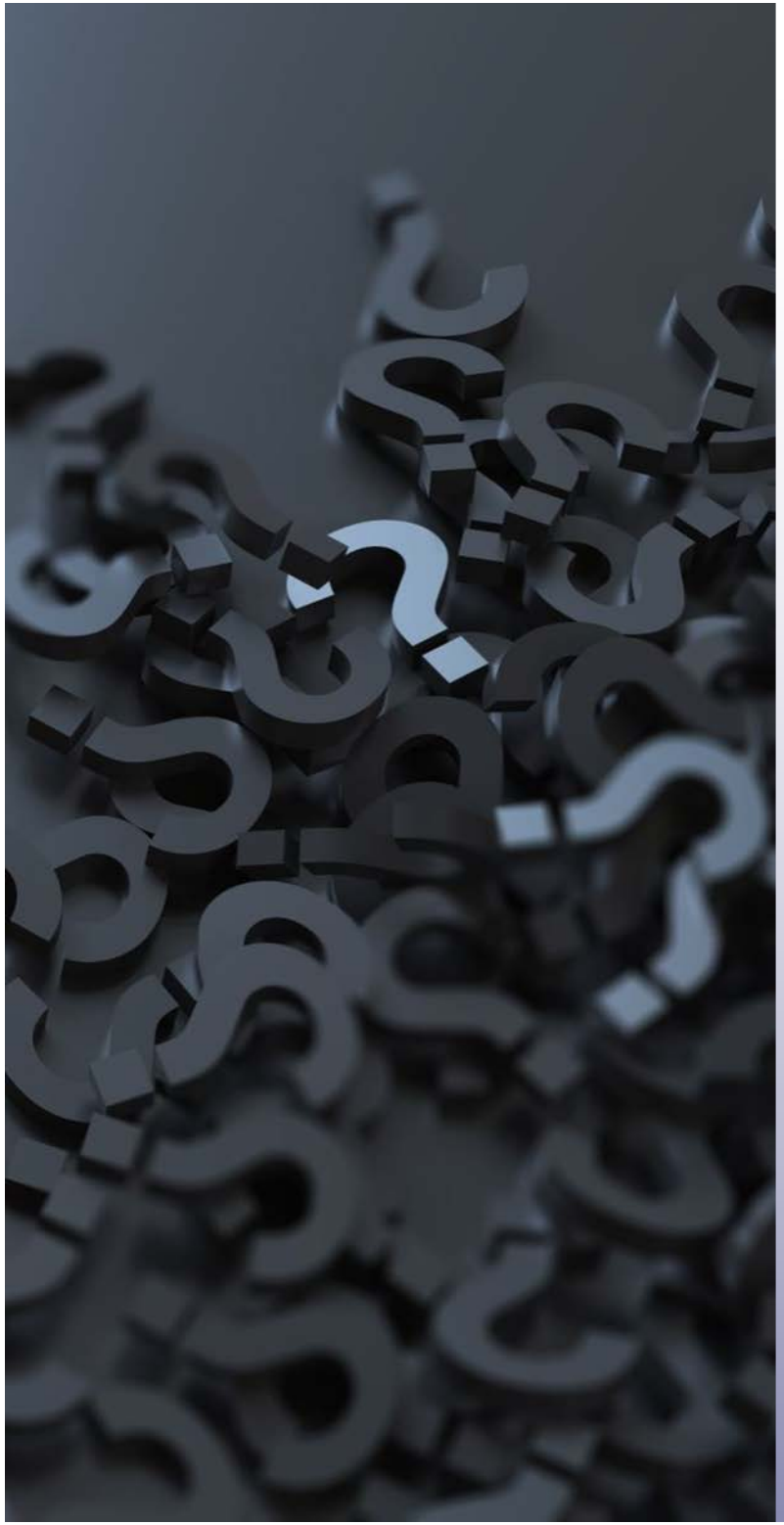
These particulates will cause sensitive circuit boards and coils to fail over time prematurely. These appliances cannot be cleaned, but should be replaced to indemnity to pre-loss.



The upper level windows were all original. The home's new windows were well sealed, while the original windows had visibly leaked.

In the less-accessible areas, the attic insulation was visibly dusty, dirty, and covered in soot/char/ash.

REPORT PREP BEST PRACTICES



What/why do findings matter?

Provides documentation to insurance company showing you have damage

Knowing what possible contaminants are present in the structure will assist restoration professions in choosing the proper types of filtration and cleaning products needed for proper and complete remediation.

Testing methods matter

- Visual assessment and smell
- Soot, char and ash sampling
- Tape Lift sampling
- Micro-vacuum air sampling (soft goods, carpet, upholstery, bedding)
- Testing for Aldehydes (question is what was there before)
- Chain of Custody procedures

Tape Lift sample analysis

Table 1: Bio-Tape Sample Analysis

Sample Number	Sample Location	Sample Type	Aciniform/ Soot-like Particles (%)	Char (%)	Ash (%)	Indicator Particles (%)	Background Range (bkg)
T-1	Attic	Bio Tape	Not Detected	3.1 Atypical 3x10x bkg	1.0 Ttypical 1x30x bkg	3.1 Atypical bkg	Measured in non-impacted residential spaces are typically below 1% with a range of 0.1% to 3%.
T-2	Office Window Sill and Bedroom Door Frames	Bio Tape	Not Detected	10.2 Elevated 10x bkg	1.0 Ttypical 1x30x bkg	3.8 Atypical bkg	

ND – Non-Detect

Sample reports

- WIDE variation in reporting styles
- Depth and detail depends upon extent of damage/concern about health hazards
- Chain of custody should be documented for all samples
- Laboratory testing should be done by independent lab, not associated w/tester
- Lab should not be interpreting the results
- Results should be quantified, not pass/fail

Best practices in reports

- Background
- Purpose/scope (i.e., just inside house)
- Methodology – how did observations, testing
- Discussion of results – as specific as possible
- Conclusion(s)
- Recommendation(s)
  - Good consultants don't shy away from health recommendations or conclusions; stand by what they saw, based on their professional expertise

Expert using “Chain of Custody” methods

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

Materials Science Chain of Custody

EMSL Order Number / Lab Use Only

EMSL Analytical, Inc.
200 Route 130 North
Cinnaminson, NJ 08077
PHONE:
EMAIL:

If Bill-To is the same as Report-To, leave this section blank. Third-party billing requires written authorization.

Report-To Information		Bill-To Information	
EMSL Customer ID:		EMSL Customer ID:	
Company Name:		Company Name:	
Contact Name:		Contact Name:	
Street Address:		Street Address:	
City, State, Zip:	Country:	City, State, Zip:	Country:
Phone:		Phone:	
Email(s) for Report:		Email(s) for Invoice:	

Project Information			
Project Name/Number:		Purchase Order:	
EMSL LIMS Project ID: (If applicable, EMSL will provide)		US State where samples collected:	State of Connecticut (CT) must select project location: ☐ Commercial (Taxable) ☐ Residential (Non-Taxable)
Sampled By Name:	Sampled By Signature:	No. of Samples in Shipment	

Turn-Around-Time (TAT)

☐ 1 Day ☐ 2 Day ☐ 3 Day ☐ 4 Day ☐ 1 Week ☐ 2 Week

Call Lab to confirm before shipping samples faster than 1 Week (EOD) TAT.
All sample results issued End of Business Day (EOD).
If no TAT selected, samples will be processed on a 2 Week (EOD) TAT.

Particle Sizing
- ☐ Dynamic Light Scattering
- ☐ Filter Pore Size Analysis
- ☐ Isoelectric Point
- ☐ Microscopy (MS029)
- ☐ Mechanical Sieve / ASTM D6913 (MS028)
- ☐ Mechanical Sieve w/ Hydrometry / ASTM D6913
- ☐ Sonic Sieve (MS030)
- ☐ Zeta Potential

Chemical Testing:
- ☐ Anions / Ion Chromatography (MS054)
- ☐ Fourier Transform Infrared Spectroscopy (FTIR)
- ☐ GD-OES (MS043)
- ☐ Metals / ICP-OES (MS041)
- ☐ Metals / ICP-MS (MS041)
- ☐ Urine Stain/Urea (MS085)
- ☐ X-Ray Diffractometry (XRD) (MS079)
- ☐ X-Ray Fluorescence (XRF) (MS044)

Physical Testing
- ☐ Abrasion
- ☐ Coefficient of Friction / ASTM C1028
- ☐ Compression / ASTM D695/D395 (MS014)
- ☐ Flexure (MS016)
- ☐ Hardness / ASTM E18
- ☐ Oxygen Transmission Rate (OTR) (MS072)
- ☐ Tension/Tensile / ASTM E8/D628/D882/D412 (MS013)
- ☐ Torsion (MS017)
- ☐ Water Vapor Transmission Rate (WVTR) (MS027)

Petrographic Testing
- ☐ Full Petrographic Analysis (MS004)
- ☐ Soil Classification / ASTM D2487 (Mod) / OSHA ID-194 (MS061)
- ☐ Soil Density / ASTM D4189
- ☐ Soil Grain Size / ASTM D422 (Mod)
- ☐ Soil Grain Size w/ Hygrometry / ASTM D422
- ☐ Soil Liquid & Plastic Limits / ASTM D4318

Materials Identification:
- ☐ Advanced Material ID (MS003)
- ☐ Basic Material ID (MS024)
- ☐ Common Particle ID (MS022)
- ☐ Full Particle ID (MS023)

Combustion By-Products:
- ☐ Combustion By-Products Level 1 / ASTM D6602 (MS031)
- ☐ Combustion By-Products Level 2 / ASTM D6602 (MS032)
- ☐ Combustion By-Products Level 3 / ASTM D6602 (MS033)
- ☐ Combustion By-Products Level 4 / ASTM D6602 (MS034)
- ☐ ISO/RIA / Standard 6001 (MS047)
- ☐ NIOSH 5000/Carbon Black (MS002)
- ☐ NIOSH 5000/Carbon Black w/ Confirmation (MS051)
- ☐ Screening / ASTM D6602 (MS036)
- ☐ Source Confirmation / Soot Source ID (MS053)

MMVF's (Fibrous Glass, Etc.):
- ☐ MMVF Total Count / NIOSH 7400 (MS025/MSM201)
- ☐ MMVF with Asbestos / NIOSH 7400 Modified (MS026)
- ☐ German VDI-3491 / VDI 3492 (MS056)
- ☐ German VDI-3866 Part 5 / VDI 3491 (MS057)
- ☐ ISO 14966 (MS058)

Combustible Dust Testing
- ☐ Class II Dust Analysis (Kst, Pmax, (dP/dT)max, MEC, MIT, MIE, IS, ES) / OSHA ID201SG (MS012)
- ☐ Explosion Severity (Kst, Pmax, dP/dTmax)/ASTM E1226 (MS006)
- ☐ Go/No Go Testing / ASTM E1226 (MS005)
- ☐ Ignitability / EPA 1030 (MS077)
- ☐ Initial Analysis/Sample Characterization / ASTM E1226 (MS087)
- ☐ Layer Ignition Temperature (LIT) / ASTM E2021 (MS076)
- ☐ Minimum Explosion Concentration (MEC) / ASTM E1515 (MS010)
- ☐ Minimum Ignition Energy (MIE) / ASTM E2019 (MS009)
- ☐ Minimum Ignition Temperature (MIT) / ASTM E1419 (MS008)
- ☐ Resistivity (MS011)

Other Methods/Applications:
- ☐ BET Surface Area / ASTM B922 (MS083)
- ☐ Colorimetry (MS070)
- ☐ Condoms Compatibility / ASTM D-7661-18 (MS048)
- ☐ Explosive Residue / EPA 8330A/B
- ☐ Failure Analysis (MS019)
- ☐ Flash Point / ASTM D56 / ASTM D93 (MS020)
- ☐ Heat Value / ASTM E711/D240 (MS066)
- ☐ Gunshot Residue SEM (MS080)
- ☐ Gunshot Residue ICP (MS081)
- ☐ Magnetic Properties / B-H Hysteresis (MS049/MS050/MS042)
- ☐ Microplastics (MS084)
- ☐ Paint ID (MS068)
- ☐ Paint ID Multiple Layers w/ Mil Spec (MS069)
- ☐ Raman Microscopy
- ☐ RoHS
- ☐ SEM Imaging (MS082)
- ☐ Stain Identification
- ☐ Surface Tension / ASTM D1331
- ☐ Total Carbon (C) / Combustion
- ☐ Total Organic Carbon/Water (TOC)/SM-5301C (MS039)
- ☐ Total Organic Carbon/Soil (TOC)/SM-846/9060 (MS050)
- ☐ Total Sulfur (S) / Combustion
- ☐ Viscosity (Brookfield) (MS067)
- ☐ Zinc Whiskers

Thermal Analysis
- ☐ Thermo-Gravimetric Analysis (TGA) (MS073)
- ☐ Differential Scanning Calorimetry (DSC) (MS074)
- ☐ Dynamic Mechanical Analysis (DNA) (MS075)

Other Test/Method (Please specify below):

Standards

- WHAT or WHERE ARE THEY???
- IICRC S700 standards are pending, no consensus standards published
- Historical standards have been pulled
- This does not mean that there are NO standards, just no reference @ this time
- No level of soot, char, ash is “safe”
- Report should address this and “background” measurement

Some red flags

7.1.3 ATTIC

1. No recommendations.

7.1.4 HVAC SYSTEM

1. No recommendations.

Attics and HVAC (especially if operating @ time of fire) are commonly affected. For this example, you should expect a comment on each, and in this case would go back to provider and ask. Do NOT hesitate to call, and ask for explanations for any unclear areas.

INTERPRETING IH RESULTS INTO PRACTICAL ACTION FOR YOUR HOME

When to move back in?

- If you have health sensitivities, due to ongoing excavation (immediate proximity, i.e., next door/across the street from your home), and debris not being properly wetted during excavation, it is recommended to wait on remediation until excavation is complete or be prepared to do a light clean afterwards once evacuation is complete
- **Try Not To Move Back In** until the remediation is complete:
  - ALE approvals are difficult once you are back home
  - Unseen residues from what burned can harm your health
  - It is difficult to live in the midst of your remediation
  - Insurers may be more engaged to get you back home
- No one knows Your Home or Your Health like You do

What makes a home uninhabitable?

- If you, or a family member, have respiratory issues or chronic health conditions, then the ”threshold” to meet is lower (age, chronic condition)
- Get a letter from your doctor, if necessary
- If they deny ALE or remediation, ask your adjuster to show you the thresholds and how determined (get the answer in writing)
- Smoke particulates are known to contain toxins than impact materials, finishes, and health
- Wildfire smoke and fire suppression can contain or release other dangers such as lead, asbestos, and mold

https://uphelp.org/wp-content/uploads/2021/04/Updated-Bulletin-202-Wildfire-Glossary-September-2020.pdf

https://scripps.ucsd.edu/news/fine-particulate-matter-wildfire-smoke-more-harmful-pollution-other-sources

Mitigation Process

- Remove any source odors nearby (trees, etc.) if possible
- Attic insulation removed first
- Light pressure/garden hose wash home from top to bottom
- Remove textiles and soft goods from structure
- Clean structure and contents simultaneously. Start HEPA vacuuming in attic and work top to bottom
- Start at ceiling, and work downwards
- Run HEPA filter/air scrubber to capture particles that become airborne
- Dry removal of particulate matter, first
- Wet wiping with general purpose detergent, if necessary
- Hydroxyl or other thermal odor control
- Sealing/Encapsulation of porous surfaces, if odor persists

Post-mitigation follow up process

- Limit tracking outdoor residual contaminants into the house by removing shoes at the door or wearing disposable shoe covers when entering.
- Keep walkways and porches clear and as clean as possible.
- Use a HEPA vacuum on all floors daily.
- Clean all surfaces in entry ways with disposable wet wipes daily and perform wet wipe cleaning in other areas weekly.
- Change the furnace filters weekly or biweekly (based on type of filter you have) while natural degrading is taking place in the outdoor environment.
- Place Carbon/HEPA filtration air purifiers in home and run constantly to ensure air remains clean.

Q6. Post cleaning testing

What testing should we have done post mitigation to ensure our home and things are safe, i.e., kids toys (hard goods), dishes, surfaces, etc., if any are salvageable?

Q7. Adjuster denied post-remediation testing

Our adjuster denied post remediation testing. What's the best way to change his mind? (Stan N.)

Q8. Need additional advice from Restoration Company

What to do when your insurance referred restoration companies don't offer opinion or service for restoration of product - for example, built in cast iron gas BBQ on back deck? (Marianne M.)

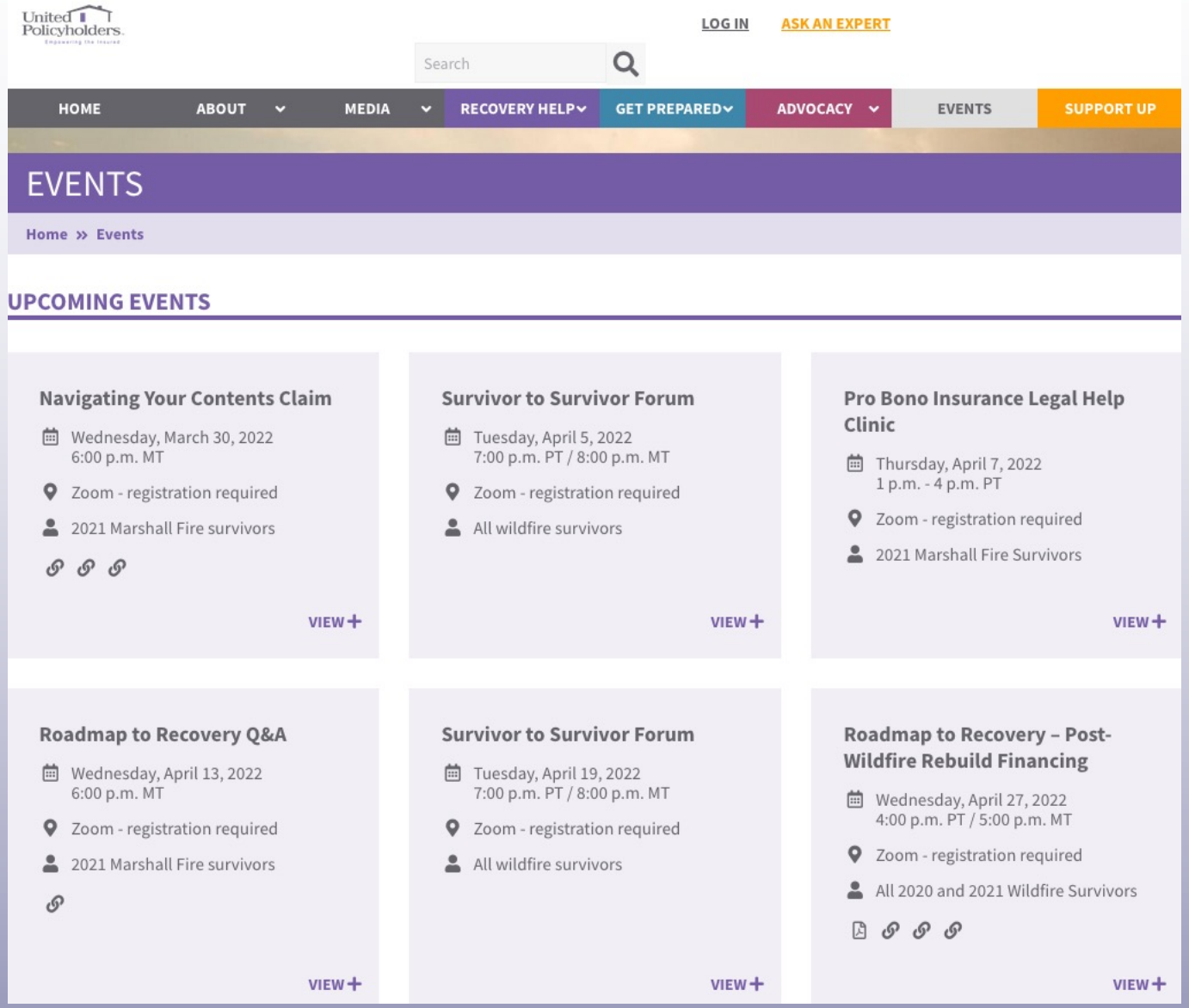
Remediation estimates

- All affected areas identified for remediation
- Terminology and protocols clearly identified
- Adjuster inspection and estimate – see if IH can attend the insurance adjuster's inspection
- Restoration professionals' inspections and estimates
- Reviewing and reconciling

Should have a 3rd party testing to ensure the remediation was a success, not the company doing the work

Upcoming Roadmap to Recovery® events

www.uphelp.org/events



Register for upcoming events. View recordings of past events and related resources

Questions or concerns: Call the Colorado Division of Insurance at 303-894-7490 or email us at DORA_Insurance@state.co.us

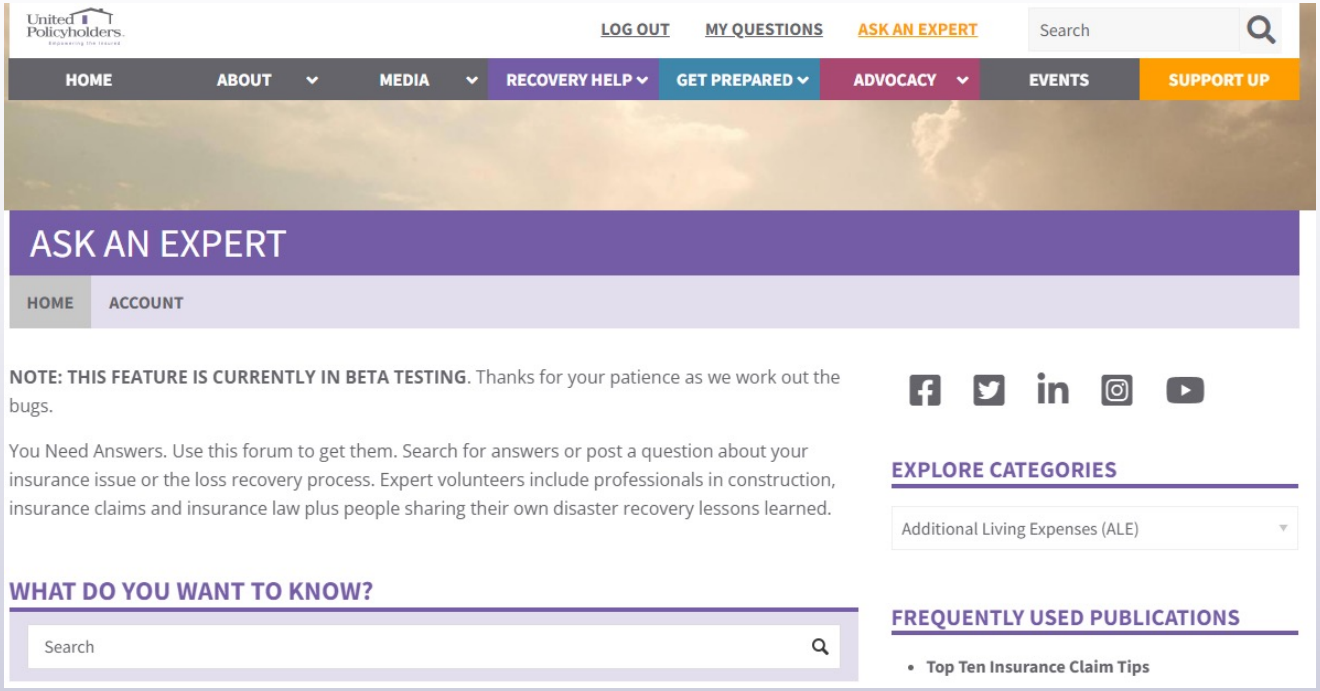
Colorado Division of Insurance

Marshall Fire Response Website

doi.colorado.gov/marshall-fire-response

Resources, FAQs, Information from Boulder County, Town Hall info

Ask an Expert Forum
www.uphelp.org/ask-an-expert



- Register. It's free.
- Write in your questions.
- Get an answer from an expert in construction, insurance, laws and disaster recovery.

Thank you to our Donors and Funders

COMMUNITY FOUNDATION BOULDER COUNTY

INSPIRING IDEAS. IGNITING ACTION.®

Stay informed – Sign UP

To be added to our mailing list for notices of future events and updated guidance:

- Encourage friends to sign up: **www.uphelp.org/signup**
- To request a copy of today's slides or video, email: **info@uphelp.org**