

State of Hawaii, Department of Health, Clean Air Branch
2023 Maui Wildfires
Ambient Community Air Monitoring and Sampling Weekly Report
Lahaina, Maui

December 5 through December 11, 2024

Tetra Tech, Inc. (Tetra Tech) prepared a Community Air Monitoring and Sampling Plan (CAMSP) to address the evaluation and documentation of air quality and inhalation exposure risks during debris removal operations performed in response to the 2023 Maui Wildfires. Air monitoring and sampling as prescribed in the CAMSP will continue until debris removal activities are complete or until HDOH advises otherwise.

Particulate monitoring and air sampling occurred from December 5 through December 11, 2024, at the community locations listed below and shown on **Figure 1**.

- WW Pump Station #4 (AM-02)
- Lahaina Intermediate School (AM-03)
- Opukea Townhomes (AM-05)
- Lahaina Recreational Center (AM-07)

Real-time air quality monitoring for particulate matter was collected at each community location over a 24-hour period each day in accordance with the CAMSP. Ambient air monitoring was performed to assess the presence of airborne particulates with a particle size diameter of 10 micrometers (μm), which is the size that is recognized as being small enough to be inhaled into a person's lungs. This particle size diameter is recognized for health evaluations and is identified as "PM₁₀". Monitoring for PM₁₀ was conducted 24 hours a day, 7 days a week from December 5 through December 11 at each of the community locations. Ambient air monitoring results were compared to the National Ambient Air Quality Standard (NAAQS) for PM₁₀, 24-hour time-weighted average of 150 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$), which was selected as the screening level for this activity.

This weekly report does not address air quality monitoring results for fine particulate matter (particle size diameter of 2.5 μm or less [PM_{2.5}]). This was not necessary because the Department of Health/U.S. Environmental Protection Agency (EPA) monitors for this parameter at six locations in Lahaina, and the results from that monitoring are accessible at <https://fire.airnow.gov/>.

Air samples were analyzed for asbestos and 16 metals, including antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, manganese, molybdenum, nickel, selenium, thallium, vanadium, and zinc. Analytical results were compared to Site Screening Action Levels (SSALs) as presented in the CAMSP.

Air Monitoring Results

In addition to the air sampling activities, real-time PM₁₀ concentrations were collected at each of the four monitoring locations throughout this reporting period. Monitoring was conducted 24 hours a day at each station. None of the PM₁₀ monitoring results exceeded the 150 $\mu\text{g}/\text{m}^3$ screening level established in the CAMSP, as shown in **Table 1**.

Air Sampling Results

A total of 28 samples for asbestos fibers were collected during this reporting period. All analytical results from this reporting period were below the SSAL for asbestos of 0.003 structures per cubic centimeter (s/cc), as results were below the laboratory's analytical sensitivity (see **Table 2**). The laboratory included

the comment “Numerous gypsum fibers present” for samples collected at the following monitoring stations:

- Opukea Townhomes on December 9
- WW Pump Station #4 on December 9
- Lahaina Recreational Center on December 9 and 10

Gypsum is a common material used in drywall, plaster, and cement, so its presence in the sample filters likely resulted from debris removal operations or other disturbances of built-environment fire debris. The presence of gypsum fibers in the samples was not sufficient to obscure asbestos analyses; nor did this pose a health and safety concern. Occupational health exposure thresholds for gypsum are 5 milligrams per cubic meter (mg/m³) for respirable dust, and 10 mg/m³ and 15 mg/m³ for total dust (both as time-weighted averages), specified by the National Institute for Occupational Safety and Health (NIOSH) and the Occupational Safety and Health Administration (OSHA). While total dust sampling was not performed, results of size-discriminated particulate sampling (PM₁₀) at these locations did not approach these thresholds and are orders of magnitude less than occupational gypsum exposure criteria.

Low levels of metals were detected from samples collected at all community locations. However, all detections were below their respective SSALs. (see **Table 2**).

Laboratory data sheets conveying asbestos and metals results are in **Appendix 1**.

Meteorological Summary

Overall wind conditions during this weekly event averaged 1.2 miles per hour and were generally from a southeast direction. **Table 3** summarizes the collected meteorological data.

Quality Control Summary

This section presents quality control measures implemented throughout the air monitoring and sampling reporting period. All references and standard operating procedures (SOPs) are included in the CAMSP.

Air monitoring was performed using Met One Instruments, Inc., environmental beta attenuation mass monitors (E-BAM) to allow comparison to NAAQS for particulates. E-BAMs are factory-calibrated annually and do not require daily calibrations. Leak checks and a flow audit were performed before each monitoring activity, in accordance with the manufacturer’s procedures.

Asbestos sampling was performed using Casella Vortex 3 (or similar) air sampling pumps. Sampling flow rates were determined and documented by pre- and post-calibration of each sampling pump, using a primary calibration standard. Pump calibration and sampling were performed according to Tetra Tech SOPs 064-2 “Calibration of Air Sampling Pump” and 073-3, “Air Quality Monitoring” and EPA Environmental Response Team (ERT) SOPs 2008 “General Air Monitoring and Sampling Guidelines” and 2015 “Asbestos Air Sampling,” included in the CAMSP.

Sampling for metals occurred using Tisch Environmental High Volume Air Samplers (or equivalent) in accordance with the following methods:

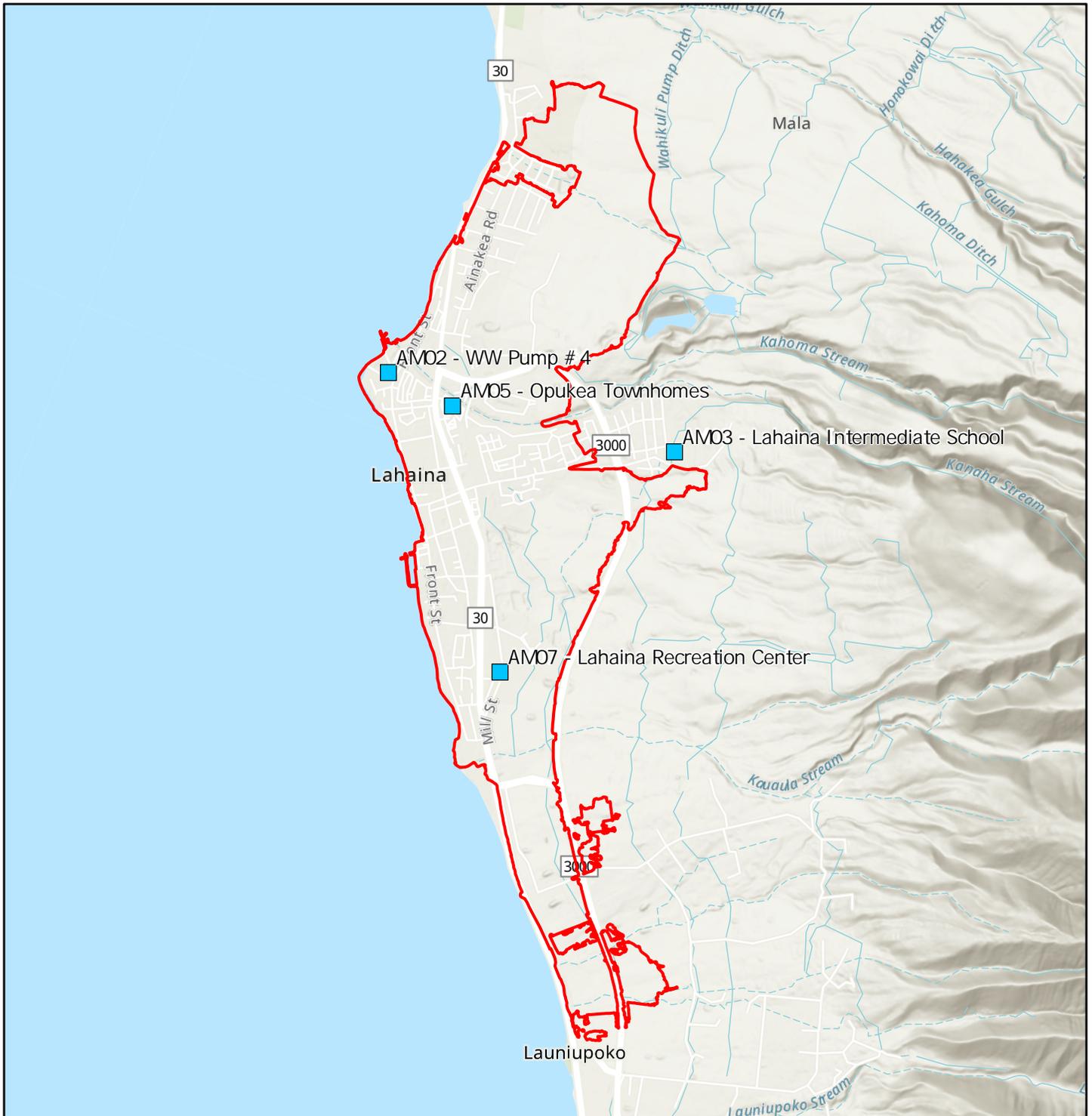
- EPA Compendium Method IO-2.1, Sampling of Ambient Air for Total Suspended Particulate Matter (SPM) and for PM₁₀ by Use of a High Volume (HV) Sampler
- EPA Compendium Method IO-3.5: Compendium of Methods for Determination of Inorganic Compounds in Ambient Air: Determination of Metals in Ambient Particulate Matter Via Inductively Coupled Plasma/Mass Spectrometry (ICP/MS) EPA/625/R-96/010a
- EPA 40 *Code of Federal Regulations* (CFR) Part 50, Method for Determination of Lead in Total Suspended Particulate Matter

- EPA 40 CFR Part 58, Appendix E: Probe and Monitoring Path Siting Criteria for Ambient Air Quality Monitoring
- American Society for Testing and Materials (ASTM) SOPs for Lead Monitoring by Use of a Total Suspended Particulate (TSP) High Volume Sampler

Field technicians conducted photographic and written documentation in accordance with Tetra Tech SOP No. 024-4, "Recording of Notes in Field Logbook".

Following receipt of air sampling results from off-site analytical laboratories, analytical data were compared to SSALs and are maintained in an electronic database. All data were subjected to Level 1 data verification and are reviewed by an industrial hygienist.

Attachments



- Air Sampling Locations
- Lahaina Fire Perimeter

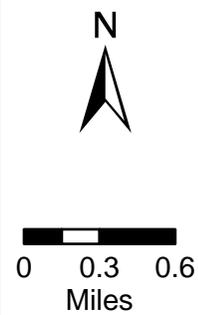


Figure 1
Air Sampling Locations

Hawaii DOH
2023 Lahaina Wildfire

Table 1
State of Hawaii, Department of Health, Clean Air Branch
Particulate Monitoring Results for PM₁₀
Maui Wildfires, Lahaina
December 5 through December 11, 2024

Screening Level		TWA Results 150 (µg/m ³)
12/5/2024	Opukea Townhomes (AM-05)	6.2
	WW Pump Station #4 (AM-02)	5.9
	Lahaina Intermediate School (AM-03)	6.5
	Lahaina Recreation Center (AM-07)	7.3
12/6/2024	Opukea Townhomes (AM-05)	7.8
	WW Pump Station #4 (AM-02)	6.8
	Lahaina Intermediate School (AM-03)	8.4
	Lahaina Recreation Center (AM-07)	6.3
12/7/2024	Opukea Townhomes (AM-05)	7.0
	WW Pump Station #4 (AM-02)	6.5
	Lahaina Intermediate School (AM-03)	5.2
	Lahaina Recreation Center (AM-07)	6.2
12/8/2024	Opukea Townhomes (AM-05)	7.4
	WW Pump Station #4 (AM-02)	7.2
	Lahaina Intermediate School (AM-03)	6.3
	Lahaina Recreation Center (AM-07)	5.8
12/9/2024	Opukea Townhomes (AM-05)	8.0
	WW Pump Station #4 (AM-02)	6.5
	Lahaina Intermediate School (AM-03)	6.5
	Lahaina Recreation Center (AM-07)	12
12/10/2024	Opukea Townhomes (AM-05)	11
	WW Pump Station #4 (AM-02)	9.6
	Lahaina Intermediate School (AM-03)	14
	Lahaina Recreation Center (AM-07)	13
12/11/2024	Opukea Townhomes (AM-05)	14
	WW Pump Station #4 (AM-02)	6.9
	Lahaina Intermediate School (AM-03)	7.0
	Lahaina Recreation Center (AM-07)	14

Notes:

µg/m³ = micrograms per cubic meter

TWA = 24-Hour Time-Weighted Average

TWA calculation results are shown in two significant figures

Table 2
State of Hawaii, Department of Health, Clean Air Branch
Asbestos and Metals Sampling Results
Maui Wildfires, Lahaina
December 5 through December 11, 2024

Analyte		Asbestos	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Manganese	Molybdenum	Nickel	Selenium	Thallium	Vanadium	Zinc
Units*		s/cc	µg/m ³															
Site Screening Action Level		0.003 ¹	0.7	0.05	1.2	0.05	0.02	12	0.01	240	1.5	0.12	4.8	0.02	48	24	0.24	1200
12/5/2024	Opukea Townhomes (AM-05)	<0.0024	0.000206	0.000417	0.00759	0.0000250	ND	0.00395	0.000805	0.0296	0.000826	0.0268	0.00156	0.00204	0.000220	0.00000257	0.00271	ND
	WW Pump Station #4 (AM-02)	<0.0027	0.000234	0.000320	0.00722	0.0000193	ND	0.00394	0.000564	0.0560	0.00117	0.0182	0.00285	0.00185	0.000213	0.00000180	0.00205	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000714	0.000140	0.00280	0.0000205	ND	0.00308	0.000521	0.0428	0.000247	0.0128	0.00282	0.00166	0.000185	0.00000138	0.00139	ND
	Lahaina Recreation Center (AM-07)	<0.0024	0.000102	0.000513	0.00674	0.0000400	ND	0.00515	0.00119	0.0178	0.00109	0.0403	0.00128	0.00270	0.000277	0.00000246	0.00314	ND
12/6/2024	Opukea Townhomes (AM-05)	<0.0024	0.0000879	0.000184	0.00341	0.00000833	ND	0.00228	0.000284	0.0461	0.000620	0.00765	0.00246	0.00121	0.000201	0.00000108	0.00160	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.000202	0.000617	0.00757	0.0000182	ND	0.00303	0.000576	0.0485	0.00106	0.0175	0.00231	0.00178	0.000245	0.00000137	0.00256	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000589	0.000131	0.00386	0.0000252	ND	0.00282	0.000399	0.0532	0.000281	0.00887	0.00254	0.00150	0.000220	0.000000972	0.00169	ND
	Lahaina Recreation Center (AM-07)	<0.0024	0.0000679	0.000480	0.00802	0.0000464	ND	0.00572	0.00134	0.0234	0.00128	0.0420	0.00126	0.00328	0.000330	0.00000222	0.00411	ND
12/7/2024	Opukea Townhomes (AM-05)	<0.0027	0.0000857	0.000182	0.00399	0.00000881	ND	0.00213	0.000265	0.0402	0.000477	0.00866	0.00240	0.00118	0.000183	0.000000834	0.00172	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.000134	0.000210	0.00500	0.0000119	ND	0.00221	0.000316	0.0363	0.000746	0.0107	0.00190	0.00121	0.000184	0.000000906	0.00186	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000499	0.000238	0.00296	0.0000172	ND	0.00240	0.000309	0.0604	0.000275	0.00911	0.00306	0.00119	0.000172	0.000000836	0.00152	ND
	Lahaina Recreation Center (AM-07)	<0.0027	0.0000705	0.000472	0.00650	0.0000376	ND	0.00537	0.000917	0.0236	0.000794	0.0334	0.00140	0.00239	0.000250	0.00000182	0.00327	ND
12/8/2024	Opukea Townhomes (AM-05)	<0.0024	0.0000548	0.000162	0.00275	0.00000595	ND	0.00272	0.000197	0.0393	0.000387	0.00593	0.00227	0.00141	0.000148	0.000000592	0.000822	ND
	WW Pump Station #4 (AM-02)	<0.0027	0.000150	0.000281	0.00604	0.0000143	ND	0.00249	0.000417	0.0411	0.000864	0.0146	0.00188	0.00131	0.000178	0.000000880	0.00154	ND
	Lahaina Intermediate School (AM-03)	<0.0024	ND	0.000127	0.00232	0.0000120	ND	0.00219	0.000229	0.0689	0.000196	0.00594	0.00327	0.000921	0.000159	0.000000578	0.000834	ND
	Lahaina Recreation Center (AM-07)	<0.0024	0.0000676	0.000412	0.00558	0.0000331	ND	0.00461	0.000861	0.0198	0.000828	0.0283	0.00126	0.00226	0.000243	0.00000142	0.00247	ND
12/9/2024	Opukea Townhomes (AM-05)	<0.0024	0.0000919	0.000152	0.00358	0.00000762	ND	0.00223	0.000254	0.0344	0.000350	0.00725	0.00212	0.00113	0.000235	0.00000118	0.00109	ND
	WW Pump Station #4 (AM-02)	<0.0027	0.000214	0.000306	0.00750	0.0000171	ND	0.00335	0.000586	0.0453	0.00103	0.0173	0.00216	0.00185	0.000285	0.00000159	0.00222	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000572	0.000128	0.00269	0.0000178	ND	0.00285	0.000305	0.0734	0.000365	0.00785	0.00343	0.00127	0.000252	0.00000126	0.00110	ND
	Lahaina Recreation Center (AM-07)	<0.0024	0.0000966	0.000838	0.00806	0.0000443	ND	0.00639	0.00136	0.0223	0.00110	0.0456	0.00135	0.00332	0.000357	0.00000289	0.00403	ND
12/10/2024	Opukea Townhomes (AM-05)	<0.0024	0.000129	0.000338	0.00669	0.0000180	ND	0.00378	0.000670	0.0389	0.000696	0.0184	0.00207	0.00215	0.000226	0.00000176	0.00209	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.000199	0.000424	0.00850	0.0000268	ND	0.00442	0.000862	0.0442	0.00144	0.0246	0.00158	0.00256	0.000260	0.00000181	0.00284	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000727	0.000213	0.00469	0.0000380	ND	0.00393	0.000634	0.0606	0.000394	0.0150	0.00304	0.00202	0.000228	0.00000160	0.00176	ND
	Lahaina Recreation Center (AM-07)	<0.0024	0.000113	0.00121	0.0120	0.0000665	ND	0.00827	0.00191	0.0245	0.00137	0.0673	0.00144	0.00440	0.000397	0.00000345	0.00520	ND
12/11/2024	Opukea Townhomes (AM-05)	<0.0024	0.000183	0.000696	0.0132	0.0000432	ND	0.00826	0.00180	0.0419	0.00180	0.0482	0.00217	0.00494	0.000266	0.00000263	0.00545	ND
	WW Pump Station #4 (AM-02)	<0.0027	0.000188	0.000977	0.0195	0.0000731	0.000206	0.0108	0.00248	0.0559	0.00365	0.0679	0.00168	0.00676	0.000344	0.00000309	0.00805	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000556	0.000274	0.00624	0.0000637	ND	0.00559	0.00102	0.0618	0.000748	0.0249	0.00315	0.00289	0.000230	0.00000192	0.00270	ND
	Lahaina Recreation Center (AM-07)	<0.0024	0.000110	0.00173	0.0174	0.000107	ND	0.0145	0.00323	0.0247	0.00233	0.104	0.00128	0.00736	0.000487	0.00000526	0.00828	ND
95% Upper Confidence Limit ²		NA	0.000140	0.000580	0.00850	0.0000430	NA	0.00550	0.00119	0.0486	0.00127	0.0372	0.00241	0.00297	0.000270	0.00000220	0.00351	NA

Notes:

¹ Asbestos result determined by transmission electron microscopy (TEM) in accordance with ISO Method 10312. PCMe results are presented.

² 95% UCL determined through 'best fit' lognormal or normal parametric statistics via W test

s/cc = structures per cubic centimeter

µg/m³ = micrograms per cubic meter

NA = Not Applicable

ND = Not detected at or above the laboratory reporting limit

* Laboratory data provided in nanograms per cubic meter, however data presented has been converted to micrograms per cubic meter so data was comparable to the Site Screening Action Levels presented in the CAMSP

Table 3
State of Hawaii, Department of Health, Clean Air Branch
Averaged Meteorological Data
Maui Wildfires, Lahaina
December 5, through December 11, 2024

Date	Station ID	Weather Station Name	Wind Speed (mph)	Wind Direction (angle)	Temperature (°F)	Rel Humidity (%)	Baro Pressure (mBar)
12/5/2024	AM-02	WW Pump Station #4	0.9	ESE	78	68	761.7
12/5/2024	AM-03	Lahaina Intermediate School	1.2	ESE	76	63	752.3
12/5/2024	AM-05	Opukea Townhomes	1.4	SE	77	63	761.2
12/5/2024	AM-07	Lahaina Recreational Center	1.5	ESE	76	68	760.9
12/6/2024	AM-02	WW Pump Station #4	0.9	SE	78	67	762.0
12/6/2024	AM-03	Lahaina Intermediate School	1.0	SE	77	64	752.5
12/6/2024	AM-05	Opukea Townhomes	1.2	SE	77	63	761.5
12/6/2024	AM-07	Lahaina Recreational Center	1.4	SE	76	66	761.1
12/7/2024	AM-02	WW Pump Station #4	0.9	SSE	78	67	761.7
12/7/2024	AM-03	Lahaina Intermediate School	1.0	ESE	77	61	752.3
12/7/2024	AM-05	Opukea Townhomes	1.2	SE	78	61	761.2
12/7/2024	AM-07	Lahaina Recreational Center	1.3	SE	76	66	760.9
12/8/2024	AM-02	WW Pump Station #4	0.9	SE	78	69	761.5
12/8/2024	AM-03	Lahaina Intermediate School	1.1	ESE	77	67	752.0
12/8/2024	AM-05	Opukea Townhomes	1.3	SE	77	65	761.0
12/8/2024	AM-07	Lahaina Recreational Center	1.3	SE	76	69	760.6
12/9/2024	AM-02	WW Pump Station #4	1.2	SE	79	64	761.7
12/9/2024	AM-03	Lahaina Intermediate School	1.2	ESE	77	60	752.3
12/9/2024	AM-05	Opukea Townhomes	1.4	ESE	78	59	761.2
12/9/2024	AM-07	Lahaina Recreational Center	1.4	SE	77	64	760.9
12/10/2024	AM-02	WW Pump Station #4	1.5	SE	79	62	762.0
12/10/2024	AM-03	Lahaina Intermediate School	1.5	ESE	77	62	752.5
12/10/2024	AM-05	Opukea Townhomes	1.5	ESE	78	59	761.5
12/10/2024	AM-07	Lahaina Recreational Center	1.6	SSE	77	63	761.1
12/11/2024	AM-02	WW Pump Station #4	1.0	S	80	54	762.4
12/11/2024	AM-03	Lahaina Intermediate School	1.2	SSE	79	52	752.9
12/11/2024	AM-05	Opukea Townhomes	1.1	SE	80	50	761.9
12/11/2024	AM-07	Lahaina Recreational Center	1.6	S	78	54	761.5

Notes:
°F - Fahrenheit
mBar - millibar
mph - miles per hour

Appendix 1

Please note, comments pertaining to gypsum may be mentioned in the lab reports below. Gypsum is a common ingredient in drywall, plaster and cement so its presence in the sample filters is likely due to debris removal operations or other disturbances of built-environment fire debris. A more indepth discussion can be found in the attached weekly report.



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EMSL Order: 042425152
Customer ID: TTDC42
Customer PO: 1207085
Project ID: N/A

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Fax: N/A
Received Date: 12/11/2024 11:55 AM
Analysis Date: 12/18/2024
Report Date: 12/27/2024

Project: Maui Fires Lahaina

**ISO 10312 Determination of Asbestos Fibers
 Direct Transfer Transmission Electron Microscopy**

Customer Sample Number:	MFL-AM05-120524-AB	Sample Description:	DL698147
EMSL Sample Number:	042425152-0001	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L):	7188.2
Aspect ratio for fiber definition:	3:1	Area of original collection filter (mm ²):	385
Minimum Length (µm):	≥ 0.5	Grid Opening Area (mm ²):	0.0129
Chi ² Test for Random Distribution on Filter:	N/A (N/A)	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD	Analyst:	S. Richey
Minimum Level of analysis (amphibole):	ADX		
Estimated Particulate Loading on Filter %:	4		
Target Analytical Sensitivity (Structures/cc):	0.001		
Analytical Sensitivity (Structures/cc):	0.0008	Limit of Detection (Structures/cc):	0.0024

TOTAL STRUCTURES (All Sizes)							
	Minimum ID Level	Structures Detected		Density (S/mm ²)	Concentration (S/cc)	95 % Confidence Interval (S/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile	CD	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total Amphibole	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Actinolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Amosite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Anthophyllite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Crocidolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Tremolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total Asbestos Structures	CD/ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Other Minerals	-	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total All Structures	-	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	

PCM EQUIVALENT (PCMe) Fibers (>5 microns in length with >3:1 Aspect Ratio)							
	Minimum ID Level	Fibers Detected		Density (F/mm ²)	Concentration (F/cc)	95 % Confidence Interval (F/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile (PCMe)	CD	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total Amphibole (PCMe)	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Actinolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Amosite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Anthophyllite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Crocidolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Tremolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total Asbestos Structures (PCMe)	CD/ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Other Minerals	-	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total All Structures (PCMe)	-	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	

Comment

Approved Signatory

Concentrations and 95% Confidence Intervals are based on a Poissonian distribution. Structure counts above 31 may be better expressed with a Gaussian distribution. EMSL maintains liability limited to the cost of analysis. This report relates only to the samples reported above and may not be reproduced except in full without the written approval of EMSL. EMSL is not responsible for sample collection activities or analytical limitations. Interpretation and use of results are the responsibility of the client.



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EMSL Order ID: 042425152
Client: Tetra Tech
Project ID: Maui Fires Lahaina

**ISO 10312 Determination of Asbestos Fibers
 Direct Transfer Transmission Electron Microscopy**

Analytical Bench Sheet Data

EMSL Sample ID: 042425152-0001			Customer Sample: MFL-AM05-120524-AB								
Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
A5	J6	None Detected									
A5	J4	None Detected									
A6	H3	None Detected									
A6	F2	None Detected									
A7	C9	None Detected									

Abbreviations used:
 XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled
 XCGBLD - Crosses Countable Grid Bar Length Doubled



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Customer PO: 1207085
Project ID: N/A

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Analysis Date: 12/18/2024
Report Date: 12/27/2024

Project: Maui Fires Lahaina

**ISO 10312 Determination of Asbestos Fibers
 Direct Transfer Transmission Electron Microscopy**

Customer Sample Number:	MFL-AM02-120524-AB	Sample Description:	DL698264
EMSL Sample Number:	042425152-0002	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L):	6962.8
Aspect ratio for fiber definition:	3:1	Area of original collection filter (mm ²):	385
Minimum Length (µm):	≥ 0.5	Grid Opening Area (mm ²):	0.0129
Chi ² Test for Random Distribution on Filter:	N/A (N/A)	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD	Analyst:	S. Richey
Minimum Level of analysis (amphibole):	ADX		
Estimated Particulate Loading on Filter %:	6		
Target Analytical Sensitivity (Structures/cc):	0.001		
Analytical Sensitivity (Structures/cc):	0.0009	Limit of Detection (Structures/cc):	0.0027

TOTAL STRUCTURES (All Sizes)							
	Minimum ID Level	Structures Detected		Density (S/mm ²)	Concentration (S/cc)	95 % Confidence Interval (S/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile	CD	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Total Amphibole	ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Actinolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Amosite	ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Anthophyllite	ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Crocidolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Tremolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Total Asbestos Structures	CD/ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Other Minerals	-	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Total All Structures	-	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	

PCM EQUIVALENT (PCMe) Fibers (>5 microns in length with >3:1 Aspect Ratio)							
	Minimum ID Level	Fibers Detected		Density (F/mm ²)	Concentration (F/cc)	95 % Confidence Interval (F/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile (PCMe)	CD	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Total Amphibole (PCMe)	ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Actinolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Amosite	ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Anthophyllite	ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Crocidolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Tremolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Total Asbestos Structures (PCMe)	CD/ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Other Minerals	-	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Total All Structures (PCMe)	-	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	

Comment

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EMSL Order ID: 042425152

Client: Tetra Tech

Project ID: Maui Fires Lahaina

ISO 10312 Determination of Asbestos Fibers Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042425152-0002			Customer Sample: MFL-AM02-120524-AB								
Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
B1	I8	None Detected									
B1	G9	None Detected									
B2	C6	None Detected									
B2	E3	None Detected									
B3	J5	None Detected									

Abbreviations used:

XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled

XCGBLD - Crosses Countable Grid Bar Length Doubled



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Analysis Date: 12/19/2024
Report Date: 12/27/2024

Project: Maui Fires Lahaina

**ISO 10312 Determination of Asbestos Fibers
 Direct Transfer Transmission Electron Microscopy**

Customer Sample Number: MFL-AM03-120524-AB **Sample Description:** DL698502

EMSL Sample Number: 042425152-0003 Sample Matrix: Air
 Magnification used for fiber counting: 20,000 Volume (L): 7223.1
 Aspect ratio for fiber definition: 3:1 Area of original collection filter (mm²): 385
 Minimum Length (µm): ≥ 0.5 Grid Opening Area (mm²): 0.0129
 Chi² Test for Random Distribution on Filter: N/A (N/A) Grid Openings Analyzed: 5
 Minimum Level of analysis (chrysotile): CD Analyst: S. Richey
 Minimum Level of analysis (amphibole): ADX

Estimated Particulate Loading on Filter %: 4
 Target Analytical Sensitivity (Structures/cc): 0.001

Analytical Sensitivity (Structures/cc): 0.0008 Limit of Detection (Structures/cc): 0.0024

TOTAL STRUCTURES (All Sizes)							
	Minimum ID Level	Structures Detected		Density (S/mm ²)	Concentration (S/cc)	95 % Confidence Interval (S/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile	CD	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total Amphibole	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Actinolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Amosite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Anthophyllite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Crocidolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Tremolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total Asbestos Structures	CD/ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Other Minerals	-	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total All Structures	-	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	

PCM EQUIVALENT (PCMe) Fibers (>5 microns in length with >3:1 Aspect Ratio)							
	Minimum ID Level	Fibers Detected		Density (F/mm ²)	Concentration (F/cc)	95 % Confidence Interval (F/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile (PCMe)	CD	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total Amphibole (PCMe)	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Actinolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Amosite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Anthophyllite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Crocidolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Tremolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total Asbestos Structures (PCMe)	CD/ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Other Minerals	-	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total All Structures (PCMe)	-	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	

Comment

Approved Signatory

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EMSL Order ID: **042425152**
 Client: **Tetra Tech**
 Project ID: **Maui Fires Lahaina**

**ISO 10312 Determination of Asbestos Fibers
 Direct Transfer Transmission Electron Microscopy**

Analytical Bench Sheet Data

EMSL Sample ID: 042425152-0003			Customer Sample: MFL-AM03-120524-AB								
Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
B5	A7	None Detected									
B5	C6	None Detected									
B6	B5	None Detected									
B6	D3	None Detected									
B7	F6	None Detected									

Abbreviations used:
 XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled
 XCGBLD - Crosses Countable Grid Bar Length Doubled



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Customer PO: 1207085
Project ID: N/A

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Received Date: 12/11/2024 11:55 AM
Analysis Date: 12/19/2024
Report Date: 12/27/2024

Project: Maui Fires Lahaina

ISO 10312 Determination of Asbestos Fibers Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	MFL-AM07-120524-AB	Sample Description:	DL698159
EMSL Sample Number:	042425152-0004	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L):	7239.0
Aspect ratio for fiber definition:	3:1	Area of original collection filter (mm ²):	385
Minimum Length (µm):	≥ 0.5	Grid Opening Area (mm ²):	0.0129
Chi ² Test for Random Distribution on Filter:	N/A (N/A)	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD	Analyst:	S. Richey
Minimum Level of analysis (amphibole):	ADX		

Estimated Particulate Loading on Filter %: 6
 Target Analytical Sensitivity (Structures/cc): 0.001

Analytical Sensitivity (Structures/cc): 0.0008 **Limit of Detection (Structures/cc): 0.0024**

TOTAL STRUCTURES (All Sizes)							
	Minimum ID Level	Structures Detected		Density (S/mm ²)	Concentration (S/cc)	95 % Confidence Interval (S/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile	CD	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total Amphibole	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Actinolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Amosite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Anthophyllite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Crocidolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Tremolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total Asbestos Structures	CD/ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Other Minerals	-	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total All Structures	-	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	

PCM EQUIVALENT (PCMe) Fibers (>5 microns in length with >3:1 Aspect Ratio)							
	Minimum ID Level	Fibers Detected		Density (F/mm ²)	Concentration (F/cc)	95 % Confidence Interval (F/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile (PCMe)	CD	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total Amphibole (PCMe)	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Actinolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Amosite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Anthophyllite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Crocidolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Tremolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total Asbestos Structures (PCMe)	CD/ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Other Minerals	-	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total All Structures (PCMe)	-	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	

Comment

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EMSL Order ID: 042425152

Client: Tetra Tech

Project ID: Maui Fires Lahaina

ISO 10312 Determination of Asbestos Fibers Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID:		042425152-0004						Customer Sample:		MFL-AM07-120524-AB	
Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
C1	J6	None Detected									
C1	H7	None Detected									
C2	E9	None Detected									
C2	F10	None Detected									
C3	A8	None Detected									

Abbreviations used:

XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled

XCGBLD - Crosses Countable Grid Bar Length Doubled



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Received Date: 12/11/2024 11:55 AM
Analysis Date: 12/19/2024
Report Date: 12/27/2024

Project: Maui Fires Lahaina

**ISO 10312 Determination of Asbestos Fibers
 Direct Transfer Transmission Electron Microscopy**

Customer Sample Number:	MFL-FB01-120524-AB	Sample Description:	DL694733
EMSL Sample Number:	042425152-0005	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L):	0.0
Aspect ratio for fiber definition:	3:1	Area of original collection filter (mm ²):	385
Minimum Length (µm):	≥ 0.5	Grid Opening Area (mm ²):	0.0129
Chi ² Test for Random Distribution on Filter:	N/A (N/A)	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD	Analyst:	S. Richey
Minimum Level of analysis (amphibole):	ADX		
Estimated Particulate Loading on Filter %:	1		
Target Analytical Sensitivity (Structures/cc):	0.001		
Analytical Sensitivity (Structures/cc):	N/A	Limit of Detection (Structures/cc):	N/A

TOTAL STRUCTURES (All Sizes)							
	Minimum ID Level	Structures Detected		Density (S/mm ²)	Concentration (S/cc)	95 % Confidence Interval (S/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile	CD	0	0	< 23.18			
Total Amphibole	ADX	0	0	< 23.18			
Actinolite	ADX	0	0	< 23.18			
Amosite	ADX	0	0	< 23.18			
Anthophyllite	ADX	0	0	< 23.18			
Crocidolite	ADX	0	0	< 23.18			
Tremolite	ADX	0	0	< 23.18			
Total Asbestos Structures	CD/ADX	0	0	< 23.18			
Other Minerals	-	0	0	< 23.18			
Total All Structures	-	0	0	< 23.18			

PCM EQUIVALENT (PCMe) Fibers (>5 microns in length with >3:1 Aspect Ratio)							
	Minimum ID Level	Fibers Detected		Density (F/mm ²)	Concentration (F/cc)	95 % Confidence Interval (F/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile (PCMe)	CD	0	0	< 23.18			
Total Amphibole (PCMe)	ADX	0	0	< 23.18			
Actinolite	ADX	0	0	< 23.18			
Amosite	ADX	0	0	< 23.18			
Anthophyllite	ADX	0	0	< 23.18			
Crocidolite	ADX	0	0	< 23.18			
Tremolite	ADX	0	0	< 23.18			
Total Asbestos Structures (PCMe)	CD/ADX	0	0	< 23.18			
Other Minerals	-	0	0	< 23.18			
Total All Structures (PCMe)	-	0	0	< 23.18			

Comment

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Client: Tetra Tech

Project ID: Maui Fires Lahaina

ISO 10312 Determination of Asbestos Fibers Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042425152-0005		Customer Sample: MFL-FB01-120524-AB									
Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
C5	G3	None Detected									
C5	G5	None Detected									
C5	H4	None Detected									
C5	H6	None Detected									
C6	A5	None Detected									
C6	A7	None Detected									
C6	B8	None Detected									
C7	J5	None Detected									
C7	E1	None Detected									
C7	B7	None Detected									

Abbreviations used:

XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled

XCGBLD - Crosses Countable Grid Bar Length Doubled



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Received Date: 12/11/2024 11:55 AM
Analysis Date: 12/19/2024
Report Date: 12/27/2024

Project: Maui Fires Lahaina

**ISO 10312 Determination of Asbestos Fibers
 Direct Transfer Transmission Electron Microscopy**

Customer Sample Number: MFL-AM05-120624-AB **Sample Description:** DL698010

EMSL Sample Number: 042425152-0006 Sample Matrix: Air
 Magnification used for fiber counting: 20,000 Volume (L): 7201.6
 Aspect ratio for fiber definition: 3:1 Area of original collection filter (mm²): 385
 Minimum Length (µm): ≥ 0.5 Grid Opening Area (mm²): 0.0129
 Chi² Test for Random Distribution on Filter: N/A (N/A) Grid Openings Analyzed: 5
 Minimum Level of analysis (chrysotile): CD Analyst: S. Richey
 Minimum Level of analysis (amphibole): ADX

Estimated Particulate Loading on Filter %: 4
 Target Analytical Sensitivity (Structures/cc): 0.001

Analytical Sensitivity (Structures/cc): 0.0008 Limit of Detection (Structures/cc): 0.0024

TOTAL STRUCTURES (All Sizes)							
	Minimum ID Level	Structures Detected		Density (S/mm ²)	Concentration (S/cc)	95 % Confidence Interval (S/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile	CD	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total Amphibole	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Actinolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Amosite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Anthophyllite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Crocidolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Tremolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total Asbestos Structures	CD/ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Other Minerals	-	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total All Structures	-	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	

PCM EQUIVALENT (PCMe) Fibers (>5 microns in length with >3:1 Aspect Ratio)							
	Minimum ID Level	Fibers Detected		Density (F/mm ²)	Concentration (F/cc)	95 % Confidence Interval (F/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile (PCMe)	CD	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total Amphibole (PCMe)	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Actinolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Amosite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Anthophyllite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Crocidolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Tremolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total Asbestos Structures (PCMe)	CD/ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Other Minerals	-	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total All Structures (PCMe)	-	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	

Comment

Approved Signatory

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EMSL Order ID: 042425152
Client: Tetra Tech
Project ID: Maui Fires Lahaina

**ISO 10312 Determination of Asbestos Fibers
 Direct Transfer Transmission Electron Microscopy**

Analytical Bench Sheet Data

EMSL Sample ID: 042425152-0006			Customer Sample: MFL-AM05-120624-AB								
Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
D1	E9	None Detected									
D1	F8	None Detected									
D2	J5	None Detected									
D2	I4	None Detected									
D3	A7	None Detected									

Abbreviations used:
 XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled
 XCGBLD - Crosses Countable Grid Bar Length Doubled



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Customer PO: 1207085
Project ID: N/A

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Received Date: 12/11/2024 11:55 AM
Analysis Date: 12/19/2024
Report Date: 12/27/2024

**ISO 10312 Determination of Asbestos Fibers
 Direct Transfer Transmission Electron Microscopy**

Customer Sample Number:	MFL-AM02-120624-AB	Sample Description:	DL697998
EMSL Sample Number:	042425152-0007	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L):	7124.8
Aspect ratio for fiber definition:	3:1	Area of original collection filter (mm ²):	385
Minimum Length (µm):	≥ 0.5	Grid Opening Area (mm ²):	0.0129
Chi ² Test for Random Distribution on Filter:	N/A (N/A)	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD	Analyst:	S. Richey
Minimum Level of analysis (amphibole):	ADX		
Estimated Particulate Loading on Filter %:	4		
Target Analytical Sensitivity (Structures/cc):	0.001		
Analytical Sensitivity (Structures/cc):	0.0008	Limit of Detection (Structures/cc):	0.0024

TOTAL STRUCTURES (All Sizes)							
	Minimum ID Level	Structures Detected		Density (S/mm ²)	Concentration (S/cc)	95 % Confidence Interval (S/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile	CD	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total Amphibole	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Actinolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Amosite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Anthophyllite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Crocidolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Tremolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total Asbestos Structures	CD/ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Other Minerals	-	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total All Structures	-	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	

PCM EQUIVALENT (PCMe) Fibers (>5 microns in length with >3:1 Aspect Ratio)							
	Minimum ID Level	Fibers Detected		Density (F/mm ²)	Concentration (F/cc)	95 % Confidence Interval (F/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile (PCMe)	CD	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total Amphibole (PCMe)	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Actinolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Amosite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Anthophyllite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Crocidolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Tremolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total Asbestos Structures (PCMe)	CD/ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Other Minerals	-	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total All Structures (PCMe)	-	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	

Comment

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EMSL Order ID: 042425152
Client: Tetra Tech
Project ID: Maui Fires Lahaina

**ISO 10312 Determination of Asbestos Fibers
 Direct Transfer Transmission Electron Microscopy**

Analytical Bench Sheet Data

EMSL Sample ID: 042425152-0007			Customer Sample: MFL-AM02-120624-AB								
Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
D5	C2	None Detected									
D5	E3	None Detected									
D6	B4	None Detected									
D6	F8	None Detected									
D7	H1	None Detected									

Abbreviations used:
 XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled
 XCGBLD - Crosses Countable Grid Bar Length Doubled



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Report Date: 12/27/2024

Project: Maui Fires Lahaina

**ISO 10312 Determination of Asbestos Fibers
 Direct Transfer Transmission Electron Microscopy**

Customer Sample Number:	MFL-AM03-120624-AB	Sample Description:	DL698495
EMSL Sample Number:	042425152-0008	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L):	7205.9
Aspect ratio for fiber definition:	3:1	Area of original collection filter (mm ²):	385
Minimum Length (µm):	≥ 0.5	Grid Opening Area (mm ²):	0.0129
Chi ² Test for Random Distribution on Filter:	N/A (N/A)	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD	Analyst:	S. Richey
Minimum Level of analysis (amphibole):	ADX		
Estimated Particulate Loading on Filter %:	4		
Target Analytical Sensitivity (Structures/cc):	0.001		
Analytical Sensitivity (Structures/cc):	0.0008	Limit of Detection (Structures/cc):	0.0024

TOTAL STRUCTURES (All Sizes)							
	Minimum ID Level	Structures Detected		Density (S/mm ²)	Concentration (S/cc)	95 % Confidence Interval (S/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile	CD	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total Amphibole	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Actinolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Amosite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Anthophyllite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Crocidolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Tremolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total Asbestos Structures	CD/ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Other Minerals	-	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total All Structures	-	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	

PCM EQUIVALENT (PCMe) Fibers (>5 microns in length with >3:1 Aspect Ratio)							
	Minimum ID Level	Fibers Detected		Density (F/mm ²)	Concentration (F/cc)	95 % Confidence Interval (F/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile (PCMe)	CD	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total Amphibole (PCMe)	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Actinolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Amosite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Anthophyllite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Crocidolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Tremolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total Asbestos Structures (PCMe)	CD/ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Other Minerals	-	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total All Structures (PCMe)	-	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	

Comment

Approved Signatory

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EMSL Order ID: **042425152**
 Client: **Tetra Tech**
 Project ID: **Maui Fires Lahaina**

**ISO 10312 Determination of Asbestos Fibers
 Direct Transfer Transmission Electron Microscopy**

Analytical Bench Sheet Data

EMSL Sample ID: 042425152-0008			Customer Sample: MFL-AM03-120624-AB								
Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
E1	I8	None Detected									
E1	H7	None Detected									
E2	A3	None Detected									
E2	C1	None Detected									
E3	B5	None Detected									

Abbreviations used:
 XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled
 XCGBLD - Crosses Countable Grid Bar Length Doubled



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Customer PO: 1207085
Project ID: N/A

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Analysis Date: 12/19/2024
Report Date: 12/27/2024

**ISO 10312 Determination of Asbestos Fibers
 Direct Transfer Transmission Electron Microscopy**

Customer Sample Number:	MFL-AM07-120624-AB	Sample Description:	DL698485
EMSL Sample Number:	042425152-0009	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L):	7320.5
Aspect ratio for fiber definition:	3:1	Area of original collection filter (mm ²):	385
Minimum Length (µm):	≥ 0.5	Grid Opening Area (mm ²):	0.0129
Chi ² Test for Random Distribution on Filter:	N/A (N/A)	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD	Analyst:	S. Richey
Minimum Level of analysis (amphibole):	ADX		
Estimated Particulate Loading on Filter %:	6		
Target Analytical Sensitivity (Structures/cc):	0.001		
Analytical Sensitivity (Structures/cc):	0.0008	Limit of Detection (Structures/cc):	0.0024

TOTAL STRUCTURES (All Sizes)							
	Minimum ID Level	Structures Detected		Density (S/mm ²)	Concentration (S/cc)	95 % Confidence Interval (S/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile	CD	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total Amphibole	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Actinolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Amosite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Anthophyllite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Crocidolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Tremolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total Asbestos Structures	CD/ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Other Minerals	-	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total All Structures	-	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	

PCM EQUIVALENT (PCMe) Fibers (>5 microns in length with >3:1 Aspect Ratio)							
	Minimum ID Level	Fibers Detected		Density (F/mm ²)	Concentration (F/cc)	95 % Confidence Interval (F/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile (PCMe)	CD	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total Amphibole (PCMe)	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Actinolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Amosite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Anthophyllite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Crocidolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Tremolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total Asbestos Structures (PCMe)	CD/ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Other Minerals	-	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total All Structures (PCMe)	-	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	

Comment

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EMSL Order ID: 042425152
Client: Tetra Tech
Project ID: Maui Fires Lahaina

**ISO 10312 Determination of Asbestos Fibers
 Direct Transfer Transmission Electron Microscopy**

Analytical Bench Sheet Data

EMSL Sample ID: 042425152-0009			Customer Sample: MFL-AM07-120624-AB								
Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
E5	B7	None Detected									
E5	C10	None Detected									
E6	A5	None Detected									
E6	D4	None Detected									
E7	J9	None Detected									

Abbreviations used:
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 XCGBLD - Crosses Countable Grid Bar Length Doubled



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Project: Maui Fires Lahaina

**ISO 10312 Determination of Asbestos Fibers
 Direct Transfer Transmission Electron Microscopy**

Customer Sample Number:	MFL-FB01-120624-AB	Sample Description:	DL698156
EMSL Sample Number:	042425152-0010	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L):	0.0
Aspect ratio for fiber definition:	3:1	Area of original collection filter (mm ²):	385
Minimum Length (µm):	≥ 0.5	Grid Opening Area (mm ²):	0.0129
Chi ² Test for Random Distribution on Filter:	N/A (N/A)	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD	Analyst:	S. Richey
Minimum Level of analysis (amphibole):	ADX		
Estimated Particulate Loading on Filter %:	1		
Target Analytical Sensitivity (Structures/cc):	0.001		
Analytical Sensitivity (Structures/cc):	N/A	Limit of Detection (Structures/cc):	N/A

TOTAL STRUCTURES (All Sizes)							
	Minimum ID Level	Structures Detected		Density (S/mm ²)	Concentration (S/cc)	95 % Confidence Interval (S/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile	CD	0	0	< 23.18			
Total Amphibole	ADX	0	0	< 23.18			
Actinolite	ADX	0	0	< 23.18			
Amosite	ADX	0	0	< 23.18			
Anthophyllite	ADX	0	0	< 23.18			
Crocidolite	ADX	0	0	< 23.18			
Tremolite	ADX	0	0	< 23.18			
Total Asbestos Structures	CD/ADX	0	0	< 23.18			
Other Minerals	-	0	0	< 23.18			
Total All Structures	-	0	0	< 23.18			

PCM EQUIVALENT (PCMe) Fibers (>5 microns in length with >3:1 Aspect Ratio)							
	Minimum ID Level	Fibers Detected		Density (F/mm ²)	Concentration (F/cc)	95 % Confidence Interval (F/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile (PCMe)	CD	0	0	< 23.18			
Total Amphibole (PCMe)	ADX	0	0	< 23.18			
Actinolite	ADX	0	0	< 23.18			
Amosite	ADX	0	0	< 23.18			
Anthophyllite	ADX	0	0	< 23.18			
Crocidolite	ADX	0	0	< 23.18			
Tremolite	ADX	0	0	< 23.18			
Total Asbestos Structures (PCMe)	CD/ADX	0	0	< 23.18			
Other Minerals	-	0	0	< 23.18			
Total All Structures (PCMe)	-	0	0	< 23.18			

Comment

Approved Signatory

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EMSL Order ID: 042425152

Client: Tetra Tech

Project ID: Maui Fires Lahaina

ISO 10312 Determination of Asbestos Fibers Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID:		042425152-0010						Customer Sample:		MFL-FB01-120624-AB	
Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
F1	C2	None Detected									
F1	C4	None Detected									
F1	D5	None Detected									
F1	D7	None Detected									
F2	A6	None Detected									
F2	A8	None Detected									
F2	B9	None Detected									
F3	J3	None Detected									
F3	J1	None Detected									
F3	I2	None Detected									

Abbreviations used:

XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled

XCGBLD - Crosses Countable Grid Bar Length Doubled



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Report Date: 12/27/2024

Project: Maui Fires Lahaina

**ISO 10312 Determination of Asbestos Fibers
 Direct Transfer Transmission Electron Microscopy**

Customer Sample Number: MFL-AM05-120724-AB **Sample Description:** DL698018

EMSL Sample Number: 042425152-0011 Sample Matrix: Air
 Magnification used for fiber counting: 20,000 Volume (L): 6889.4
 Aspect ratio for fiber definition: 3:1 Area of original collection filter (mm²): 385
 Minimum Length (µm): ≥ 0.5 Grid Opening Area (mm²): 0.0129
 Chi² Test for Random Distribution on Filter: N/A (N/A) Grid Openings Analyzed: 5
 Minimum Level of analysis (chrysotile): CD Analyst: S. Richey
 Minimum Level of analysis (amphibole): ADX

Estimated Particulate Loading on Filter %: 4
 Target Analytical Sensitivity (Structures/cc): 0.001

Analytical Sensitivity (Structures/cc): 0.0009 Limit of Detection (Structures/cc): 0.0027

TOTAL STRUCTURES (All Sizes)							
	Minimum ID Level	Structures Detected		Density (S/mm ²)	Concentration (S/cc)	95 % Confidence Interval (S/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile	CD	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Total Amphibole	ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Actinolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Amosite	ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Anthophyllite	ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Crocidolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Tremolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Total Asbestos Structures	CD/ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Other Minerals	-	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Total All Structures	-	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	

PCM EQUIVALENT (PCMe) Fibers (>5 microns in length with >3:1 Aspect Ratio)							
	Minimum ID Level	Fibers Detected		Density (F/mm ²)	Concentration (F/cc)	95 % Confidence Interval (F/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile (PCMe)	CD	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Total Amphibole (PCMe)	ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Actinolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Amosite	ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Anthophyllite	ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Crocidolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Tremolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Total Asbestos Structures (PCMe)	CD/ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Other Minerals	-	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Total All Structures (PCMe)	-	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	

Comment

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EMSL Order ID: 042425152
Client: Tetra Tech
Project ID: Maui Fires Lahaina

**ISO 10312 Determination of Asbestos Fibers
 Direct Transfer Transmission Electron Microscopy**

Analytical Bench Sheet Data

EMSL Sample ID: 042425152-0011			Customer Sample: MFL-AM05-120724-AB								
Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
F5	D10	None Detected									
F5	E9	None Detected									
F6	J6	None Detected									
F6	I5	None Detected									
F7	G4	None Detected									

Abbreviations used:
 XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled
 XCGBLD - Crosses Countable Grid Bar Length Doubled



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Customer PO: 1207085
Project ID: N/A

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Fax: N/A
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Analysis Date: 12/19/2024
Report Date: 12/27/2024

Project: Maui Fires Lahaina

**ISO 10312 Determination of Asbestos Fibers
 Direct Transfer Transmission Electron Microscopy**

Customer Sample Number:	MFL-AM02-120724-AB	Sample Description:	DL698166
EMSL Sample Number:	042425152-0012	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L):	7062.5
Aspect ratio for fiber definition:	3:1	Area of original collection filter (mm ²):	385
Minimum Length (µm):	≥ 0.5	Grid Opening Area (mm ²):	0.0129
Chi ² Test for Random Distribution on Filter:	N/A (N/A)	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD	Analyst:	S. Richey
Minimum Level of analysis (amphibole):	ADX		
Estimated Particulate Loading on Filter %:	4		
Target Analytical Sensitivity (Structures/cc):	0.001		
Analytical Sensitivity (Structures/cc):	0.0008	Limit of Detection (Structures/cc):	0.0024

TOTAL STRUCTURES (All Sizes)							
	Minimum ID Level	Structures Detected		Density (S/mm ²)	Concentration (S/cc)	95 % Confidence Interval (S/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile	CD	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total Amphibole	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Actinolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Amosite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Anthophyllite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Crocidolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Tremolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total Asbestos Structures	CD/ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Other Minerals	-	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total All Structures	-	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	

PCM EQUIVALENT (PCMe) Fibers (>5 microns in length with >3:1 Aspect Ratio)							
	Minimum ID Level	Fibers Detected		Density (F/mm ²)	Concentration (F/cc)	95 % Confidence Interval (F/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile (PCMe)	CD	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total Amphibole (PCMe)	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Actinolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Amosite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Anthophyllite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Crocidolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Tremolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total Asbestos Structures (PCMe)	CD/ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Other Minerals	-	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total All Structures (PCMe)	-	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	

Comment

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EMSL Order ID: 042425152
Client: Tetra Tech
Project ID: Maui Fires Lahaina

**ISO 10312 Determination of Asbestos Fibers
 Direct Transfer Transmission Electron Microscopy**

Analytical Bench Sheet Data

EMSL Sample ID: 042425152-0012			Customer Sample: MFL-AM02-120724-AB								
Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
G1	J4	None Detected									
G1	I3	None Detected									
G2	C7	None Detected									
G2	E9	None Detected									
G3	J6	None Detected									

Abbreviations used:
 XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled
 XCGBLD - Crosses Countable Grid Bar Length Doubled



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Received Date: 12/11/2024 11:55 AM
Analysis Date: 12/19/2024
Report Date: 12/27/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	MFL-AM03-120724-AB	Sample Description:	DL697979
EMSL Sample Number:	042425152-0013	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L):	7220.2
Aspect ratio for fiber definition:	3:1	Area of original collection filter (mm ²):	385
Minimum Length (µm):	≥ 0.5	Grid Opening Area (mm ²):	0.0129
Chi ² Test for Random Distribution on Filter:	N/A (N/A)	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD	Analyst:	S. Richey
Minimum Level of analysis (amphibole):	ADX		
Estimated Particulate Loading on Filter %:	4		
Target Analytical Sensitivity (Structures/cc):	0.001		
Analytical Sensitivity (Structures/cc):	0.0008	Limit of Detection (Structures/cc):	0.0024

TOTAL STRUCTURES (All Sizes)							
	Minimum ID Level	Structures Detected		Density (S/mm ²)	Concentration (S/cc)	95 % Confidence Interval (S/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile	CD	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total Amphibole	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Actinolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Amosite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Anthophyllite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Crocidolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Tremolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total Asbestos Structures	CD/ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Other Minerals	-	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total All Structures	-	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	

PCM EQUIVALENT (PCMe) Fibers (>5 microns in length with >3:1 Aspect Ratio)							
	Minimum ID Level	Fibers Detected		Density (F/mm ²)	Concentration (F/cc)	95 % Confidence Interval (F/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile (PCMe)	CD	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total Amphibole (PCMe)	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Actinolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Amosite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Anthophyllite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Crocidolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Tremolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total Asbestos Structures (PCMe)	CD/ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Other Minerals	-	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total All Structures (PCMe)	-	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	

Comment

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EMSL Order ID: 042425152

Client: Tetra Tech

Project ID: Maui Fires Lahaina

ISO 10312 Determination of Asbestos Fibers Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID:		042425152-0013		Customer Sample:		MFL-AM03-120724-AB					
Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
G5	I7	None Detected									
G5	H6	None Detected									
G6	F8	None Detected									
G6	E5	None Detected									
G7	D4	None Detected									

Abbreviations used:

XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled

XCGBLD - Crosses Countable Grid Bar Length Doubled



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Analysis Date: 12/19/2024
Report Date: 12/27/2024

Project: Maui Fires Lahaina

**ISO 10312 Determination of Asbestos Fibers
 Direct Transfer Transmission Electron Microscopy**

Customer Sample Number: MFL-AM07-120724-AB **Sample Description:** DL698143

EMSL Sample Number: 042425152-0014 Sample Matrix: Air
 Magnification used for fiber counting: 20,000 Volume (L): 6776.6
 Aspect ratio for fiber definition: 3:1 Area of original collection filter (mm²): 385
 Minimum Length (µm): ≥ 0.5 Grid Opening Area (mm²): 0.0129
 Chi² Test for Random Distribution on Filter: N/A (N/A) Grid Openings Analyzed: 5
 Minimum Level of analysis (chrysotile): CD Analyst: S. Richey
 Minimum Level of analysis (amphibole): ADX

Estimated Particulate Loading on Filter %: 4
 Target Analytical Sensitivity (Structures/cc): 0.001

Analytical Sensitivity (Structures/cc): 0.0009 Limit of Detection (Structures/cc): 0.0027

TOTAL STRUCTURES (All Sizes)							
	Minimum ID Level	Structures Detected		Density (S/mm ²)	Concentration (S/cc)	95 % Confidence Interval (S/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile	CD	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Total Amphibole	ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Actinolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Amosite	ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Anthophyllite	ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Crocidolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Tremolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Total Asbestos Structures	CD/ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Other Minerals	-	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Total All Structures	-	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	

PCM EQUIVALENT (PCMe) Fibers (>5 microns in length with >3:1 Aspect Ratio)							
	Minimum ID Level	Fibers Detected		Density (F/mm ²)	Concentration (F/cc)	95 % Confidence Interval (F/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile (PCMe)	CD	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Total Amphibole (PCMe)	ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Actinolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Amosite	ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Anthophyllite	ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Crocidolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Tremolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Total Asbestos Structures (PCMe)	CD/ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Other Minerals	-	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Total All Structures (PCMe)	-	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	

Comment

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Client: Tetra Tech

Project ID: Maui Fires Lahaina

ISO 10312 Determination of Asbestos Fibers Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID:		042425152-0014		Customer Sample:		MFL-AM07-120724-AB					
Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
H1	A6	None Detected									
H1	B7	None Detected									
H2	J4	None Detected									
H2	I3	None Detected									
H3	G9	None Detected									

Abbreviations used:

XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled

XCGBLD - Crosses Countable Grid Bar Length Doubled



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Analysis Date: 12/19/2024
Report Date: 12/27/2024

Project: Maui Fires Lahaina

**ISO 10312 Determination of Asbestos Fibers
 Direct Transfer Transmission Electron Microscopy**

Customer Sample Number: MFL-FB01-120724-AB **Sample Description:** DL698071

EMSL Sample Number: 042425152-0015 Sample Matrix: Air
 Magnification used for fiber counting: 20,000 Volume (L): 0.0
 Aspect ratio for fiber definition: 3:1 Area of original collection filter (mm²): 385
 Minimum Length (µm): ≥ 0.5 Grid Opening Area (mm²): 0.0129
 Chi² Test for Random Distribution on Filter: N/A (N/A) Grid Openings Analyzed: 10
 Minimum Level of analysis (chrysotile): CD Analyst: S. Richey
 Minimum Level of analysis (amphibole): ADX

Estimated Particulate Loading on Filter %: 1
 Target Analytical Sensitivity (Structures/cc): 0.001

Analytical Sensitivity (Structures/cc): N/A **Limit of Detection (Structures/cc):** N/A

TOTAL STRUCTURES (All Sizes)							
	Minimum ID Level	Structures Detected		Density (S/mm ²)	Concentration (S/cc)	95 % Confidence Interval (S/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile	CD	0	0	< 23.18			
Total Amphibole	ADX	0	0	< 23.18			
Actinolite	ADX	0	0	< 23.18			
Amosite	ADX	0	0	< 23.18			
Anthophyllite	ADX	0	0	< 23.18			
Crocidolite	ADX	0	0	< 23.18			
Tremolite	ADX	0	0	< 23.18			
Total Asbestos Structures	CD/ADX	0	0	< 23.18			
Other Minerals	-	0	0	< 23.18			
Total All Structures	-	0	0	< 23.18			

PCM EQUIVALENT (PCMe) Fibers (>5 microns in length with >3:1 Aspect Ratio)							
	Minimum ID Level	Fibers Detected		Density (F/mm ²)	Concentration (F/cc)	95 % Confidence Interval (F/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile (PCMe)	CD	0	0	< 23.18			
Total Amphibole (PCMe)	ADX	0	0	< 23.18			
Actinolite	ADX	0	0	< 23.18			
Amosite	ADX	0	0	< 23.18			
Anthophyllite	ADX	0	0	< 23.18			
Crocidolite	ADX	0	0	< 23.18			
Tremolite	ADX	0	0	< 23.18			
Total Asbestos Structures (PCMe)	CD/ADX	0	0	< 23.18			
Other Minerals	-	0	0	< 23.18			
Total All Structures (PCMe)	-	0	0	< 23.18			

Comment

Approved Signatory

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Client: Tetra Tech

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ISO 10312 Determination of Asbestos Fibers Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042425152-0015		Customer Sample: MFL-FB01-120724-AB									
Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
H5	J10	None Detected									
H5	E9	None Detected									
H5	E7	None Detected									
H5	D6	None Detected									
H6	C8	None Detected									
H6	C10	None Detected									
H6	E7	None Detected									
H7	I8	None Detected									
H7	I6	None Detected									
H7	G9	None Detected									

Abbreviations used:

XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled

XCGBLD - Crosses Countable Grid Bar Length Doubled



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Report Date: 12/27/2024

Project: Maui Fires Lahaina

**ISO 10312 Determination of Asbestos Fibers
 Direct Transfer Transmission Electron Microscopy**

Customer Sample Number: MFL-AM05-120824-AB **Sample Description:** DL697993

EMSL Sample Number: 042425152-0016 Sample Matrix: Air
 Magnification used for fiber counting: 20,000 Volume (L): 7232.7
 Aspect ratio for fiber definition: 3:1 Area of original collection filter (mm²): 385
 Minimum Length (µm): ≥ 0.5 Grid Opening Area (mm²): 0.0129
 Chi² Test for Random Distribution on Filter: N/A (N/A) Grid Openings Analyzed: 5
 Minimum Level of analysis (chrysotile): CD Analyst: S. Richey
 Minimum Level of analysis (amphibole): ADX

Estimated Particulate Loading on Filter %: 4
 Target Analytical Sensitivity (Structures/cc): 0.001

Analytical Sensitivity (Structures/cc): 0.0008 Limit of Detection (Structures/cc): 0.0024

TOTAL STRUCTURES (All Sizes)							
	Minimum ID Level	Structures Detected		Density (S/mm ²)	Concentration (S/cc)	95 % Confidence Interval (S/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile	CD	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total Amphibole	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Actinolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Amosite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Anthophyllite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Crocidolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Tremolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total Asbestos Structures	CD/ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Other Minerals	-	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total All Structures	-	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	

PCM EQUIVALENT (PCMe) Fibers (>5 microns in length with >3:1 Aspect Ratio)							
	Minimum ID Level	Fibers Detected		Density (F/mm ²)	Concentration (F/cc)	95 % Confidence Interval (F/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile (PCMe)	CD	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total Amphibole (PCMe)	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Actinolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Amosite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Anthophyllite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Crocidolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Tremolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total Asbestos Structures (PCMe)	CD/ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Other Minerals	-	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total All Structures (PCMe)	-	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	

Comment

Approved Signatory

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EMSL Order ID: **042425152**
 Client: **Tetra Tech**
 Project ID: **Maui Fires Lahaina**

ISO 10312 Determination of Asbestos Fibers Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042425152-0016			Customer Sample: MFL-AM05-120824-AB								
Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
I1	C3	None Detected									
I1	D4	None Detected									
I2	A5	None Detected									
I2	B7	None Detected									
I3	F10	None Detected									

Abbreviations used:
 XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled
 XCGBLD - Crosses Countable Grid Bar Length Doubled



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EMSL Order: 042425152
Customer ID: TTDC42
Customer PO: 1207085
Project ID: N/A

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Analysis Date: 12/19/2024
Report Date: 12/27/2024

Project: Maui Fires Lahaina

**ISO 10312 Determination of Asbestos Fibers
 Direct Transfer Transmission Electron Microscopy**

Customer Sample Number: MFL-AM02-120824-AB **Sample Description:** DL697977

EMSL Sample Number: 042425152-0017 Sample Matrix: Air
 Magnification used for fiber counting: 20,000 Volume (L): 6947.1
 Aspect ratio for fiber definition: 3:1 Area of original collection filter (mm²): 385
 Minimum Length (µm): ≥ 0.5 Grid Opening Area (mm²): 0.0129
 Chi² Test for Random Distribution on Filter: N/A (N/A) Grid Openings Analyzed: 5
 Minimum Level of analysis (chrysotile): CD Analyst: S. Richey
 Minimum Level of analysis (amphibole): ADX

Estimated Particulate Loading on Filter %: 4
 Target Analytical Sensitivity (Structures/cc): 0.001

Analytical Sensitivity (Structures/cc): 0.0009 Limit of Detection (Structures/cc): 0.0027

TOTAL STRUCTURES (All Sizes)							
	Minimum ID Level	Structures Detected		Density (S/mm ²)	Concentration (S/cc)	95 % Confidence Interval (S/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile	CD	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Total Amphibole	ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Actinolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Amosite	ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Anthophyllite	ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Crocidolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Tremolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Total Asbestos Structures	CD/ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Other Minerals	-	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Total All Structures	-	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	

PCM EQUIVALENT (PCMe) Fibers (>5 microns in length with >3:1 Aspect Ratio)							
	Minimum ID Level	Fibers Detected		Density (F/mm ²)	Concentration (F/cc)	95 % Confidence Interval (F/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile (PCMe)	CD	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Total Amphibole (PCMe)	ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Actinolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Amosite	ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Anthophyllite	ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Crocidolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Tremolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Total Asbestos Structures (PCMe)	CD/ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Other Minerals	-	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Total All Structures (PCMe)	-	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	

Comment

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EMSL Order ID: 042425152

Client: Tetra Tech

Project ID: Maui Fires Lahaina

ISO 10312 Determination of Asbestos Fibers Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042425152-0017			Customer Sample: MFL-AM02-120824-AB								
Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
I5	A4	None Detected									
I5	A2	None Detected									
I6	C8	None Detected									
I6	D9	None Detected									
I7	B7	None Detected									

Abbreviations used:

XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled

XCGBLD - Crosses Countable Grid Bar Length Doubled



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Analysis Date: 12/19/2024
Report Date: 12/27/2024

Project: Maui Fires Lahaina

**ISO 10312 Determination of Asbestos Fibers
 Direct Transfer Transmission Electron Microscopy**

Customer Sample Number: MFL-AM03-120824-AB **Sample Description:** DL698176

EMSL Sample Number: 042425152-0018 Sample Matrix: Air
 Magnification used for fiber counting: 20,000 Volume (L): 7193.4
 Aspect ratio for fiber definition: 3:1 Area of original collection filter (mm²): 385
 Minimum Length (µm): ≥ 0.5 Grid Opening Area (mm²): 0.0129
 Chi² Test for Random Distribution on Filter: N/A (N/A) Grid Openings Analyzed: 5
 Minimum Level of analysis (chrysotile): CD Analyst: S. Richey
 Minimum Level of analysis (amphibole): ADX

Estimated Particulate Loading on Filter %: 4
 Target Analytical Sensitivity (Structures/cc): 0.001

Analytical Sensitivity (Structures/cc): 0.0008 Limit of Detection (Structures/cc): 0.0024

TOTAL STRUCTURES (All Sizes)							
	Minimum ID Level	Structures Detected		Density (S/mm ²)	Concentration (S/cc)	95 % Confidence Interval (S/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile	CD	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total Amphibole	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Actinolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Amosite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Anthophyllite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Crocidolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Tremolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total Asbestos Structures	CD/ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Other Minerals	-	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total All Structures	-	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	

PCM EQUIVALENT (PCMe) Fibers (>5 microns in length with >3:1 Aspect Ratio)							
	Minimum ID Level	Fibers Detected		Density (F/mm ²)	Concentration (F/cc)	95 % Confidence Interval (F/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile (PCMe)	CD	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total Amphibole (PCMe)	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Actinolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Amosite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Anthophyllite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Crocidolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Tremolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total Asbestos Structures (PCMe)	CD/ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Other Minerals	-	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total All Structures (PCMe)	-	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	

Comment

Approved Signatory

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EMSL Order ID: **042425152**
 Client: **Tetra Tech**
 Project ID: **Maui Fires Lahaina**

ISO 10312 Determination of Asbestos Fibers Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042425152-0018			Customer Sample: MFL-AM03-120824-AB								
Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
J1	B8	None Detected									
J1	C9	None Detected									
J2	D6	None Detected									
J2	E7	None Detected									
J3	F4	None Detected									

Abbreviations used:
 XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled
 XCGBLD - Crosses Countable Grid Bar Length Doubled



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Analysis Date: 12/19/2024
Report Date: 12/27/2024

Project: Maui Fires Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	MFL-AM07-120824-AB	Sample Description:	DL698037
EMSL Sample Number:	042425152-0019	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L):	7225.4
Aspect ratio for fiber definition:	3:1	Area of original collection filter (mm ²):	385
Minimum Length (µm):	≥ 0.5	Grid Opening Area (mm ²):	0.0129
Chi ² Test for Random Distribution on Filter:	N/A (N/A)	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD	Analyst:	S. Richey
Minimum Level of analysis (amphibole):	ADX		
Estimated Particulate Loading on Filter %:	4		
Target Analytical Sensitivity (Structures/cc):	0.001		
Analytical Sensitivity (Structures/cc):	0.0008	Limit of Detection (Structures/cc):	0.0024

TOTAL STRUCTURES (All Sizes)							
	Minimum ID Level	Structures Detected		Density (S/mm ²)	Concentration (S/cc)	95 % Confidence Interval (S/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile	CD	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total Amphibole	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Actinolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Amosite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Anthophyllite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Crocidolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Tremolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total Asbestos Structures	CD/ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Other Minerals	-	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total All Structures	-	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	

PCM EQUIVALENT (PCMe) Fibers (>5 microns in length with >3:1 Aspect Ratio)							
	Minimum ID Level	Fibers Detected		Density (F/mm ²)	Concentration (F/cc)	95 % Confidence Interval (F/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile (PCMe)	CD	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total Amphibole (PCMe)	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Actinolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Amosite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Anthophyllite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Crocidolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Tremolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total Asbestos Structures (PCMe)	CD/ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Other Minerals	-	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total All Structures (PCMe)	-	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	

Comment

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Client: Tetra Tech

Project ID: Maui Fires Lahaina

ISO 10312 Determination of Asbestos Fibers Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042425152-0019			Customer Sample: MFL-AM07-120824-AB								
Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
J5	H5	None Detected									
J5	I6	None Detected									
J6	B4	None Detected									
J6	C5	None Detected									
J6	I9	None Detected									

Abbreviations used:

XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled

XCGBLD - Crosses Countable Grid Bar Length Doubled



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Received Date: 12/11/2024 11:55 AM
Analysis Date: 12/19/2024
Report Date: 12/27/2024

Project: Maui Fires Lahaina

**ISO 10312 Determination of Asbestos Fibers
 Direct Transfer Transmission Electron Microscopy**

Customer Sample Number: MFL-FB01-120824-AB **Sample Description:** DL692790

EMSL Sample Number: 042425152-0020 Sample Matrix: Air
 Magnification used for fiber counting: 20,000 Volume (L) : 0.0
 Aspect ratio for fiber definition: 3:1 Area of original collection filter (mm²): 385
 Minimum Length (µm): ≥ 0.5 Grid Opening Area (mm²): 0.0129
 Chi² Test for Random Distribution on Filter: N/A (N/A) Grid Openings Analyzed: 10
 Minimum Level of analysis (chrysotile): CD Analyst: S. Richey
 Minimum Level of analysis (amphibole): ADX

Estimated Particulate Loading on Filter %: 1
 Target Analytical Sensitivity (Structures/cc): 0.001

Analytical Sensitivity (Structures/cc): N/A **Limit of Detection (Structures/cc):** N/A

TOTAL STRUCTURES (All Sizes)							
	Minimum ID Level	Structures Detected		Density (S/mm ²)	Concentration (S/cc)	95 % Confidence Interval (S/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile	CD	0	0	< 23.18			
Total Amphibole	ADX	0	0	< 23.18			
Actinolite	ADX	0	0	< 23.18			
Amosite	ADX	0	0	< 23.18			
Anthophyllite	ADX	0	0	< 23.18			
Crocidolite	ADX	0	0	< 23.18			
Tremolite	ADX	0	0	< 23.18			
Total Asbestos Structures	CD/ADX	0	0	< 23.18			
Other Minerals	-	0	0	< 23.18			
Total All Structures	-	0	0	< 23.18			

PCM EQUIVALENT (PCMe) Fibers (>5 microns in length with >3:1 Aspect Ratio)							
	Minimum ID Level	Fibers Detected		Density (F/mm ²)	Concentration (F/cc)	95 % Confidence Interval (F/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile (PCMe)	CD	0	0	< 23.18			
Total Amphibole (PCMe)	ADX	0	0	< 23.18			
Actinolite	ADX	0	0	< 23.18			
Amosite	ADX	0	0	< 23.18			
Anthophyllite	ADX	0	0	< 23.18			
Crocidolite	ADX	0	0	< 23.18			
Tremolite	ADX	0	0	< 23.18			
Total Asbestos Structures (PCMe)	CD/ADX	0	0	< 23.18			
Other Minerals	-	0	0	< 23.18			
Total All Structures (PCMe)	-	0	0	< 23.18			

Comment

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EMSL Order ID: **042425152**
 Client: **Tetra Tech**
 Project ID: **Maui Fires Lahaina**

ISO 10312 Determination of Asbestos Fibers Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID:		042425152-0020					Customer Sample:		MFL-FB01-120824-AB		
Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
K1	H8	None Detected									
K1	H6	None Detected									
K1	G9	None Detected									
K1	G7	None Detected									
K2	E1	None Detected									
K2	F2	None Detected									
K2	G1	None Detected									
K3	J10	None Detected									
K3	C10	None Detected									
K3	B8	None Detected									

Abbreviations used:
 XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled
 XCGBLD - Crosses Countable Grid Bar Length Doubled



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Report Date: 12/27/2024

Project: Maui Fires Lahaina

**ISO 10312 Determination of Asbestos Fibers
 Direct Transfer Transmission Electron Microscopy**

Customer Sample Number:	Lab Blank	Sample Description: Lab Blank
EMSL Sample Number:	042425152-0021	Sample Matrix: Air
Magnification used for fiber counting:	20,000	Volume (L) : 0.0
Aspect ratio for fiber definition:	3:1	Area of original collection filter (mm ²): 385
Minimum Length (µm):	≥ 0.5	Grid Opening Area (mm ²): 0.0129
Chi ² Test for Random Distribution on Filter:	N/A (N/A)	Grid Openings Analyzed: 10
Minimum Level of analysis (chrysotile):	CD	Analyst: S. Richey
Minimum Level of analysis (amphibole):	ADX	
Estimated Particulate Loading on Filter %:	1	
Target Analytical Sensitivity (Structures/cc):	0.001	
Analytical Sensitivity (Structures/cc):	N/A	Limit of Detection (Structures/cc): N/A

TOTAL STRUCTURES (All Sizes)							
	Minimum ID Level	Structures Detected		Density (S/mm ²)	Concentration (S/cc)	95 % Confidence Interval (S/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile	CD	0	0	< 23.18			
Total Amphibole	ADX	0	0	< 23.18			
Actinolite	ADX	0	0	< 23.18			
Amosite	ADX	0	0	< 23.18			
Anthophyllite	ADX	0	0	< 23.18			
Crocidolite	ADX	0	0	< 23.18			
Tremolite	ADX	0	0	< 23.18			
Total Asbestos Structures	CD/ADX	0	0	< 23.18			
Other Minerals	-	0	0	< 23.18			
Total All Structures	-	0	0	< 23.18			

PCM EQUIVALENT (PCMe) Fibers (>5 microns in length with >3:1 Aspect Ratio)							
	Minimum ID Level	Fibers Detected		Density (F/mm ²)	Concentration (F/cc)	95 % Confidence Interval (F/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile (PCMe)	CD	0	0	< 23.18			
Total Amphibole (PCMe)	ADX	0	0	< 23.18			
Actinolite	ADX	0	0	< 23.18			
Amosite	ADX	0	0	< 23.18			
Anthophyllite	ADX	0	0	< 23.18			
Crocidolite	ADX	0	0	< 23.18			
Tremolite	ADX	0	0	< 23.18			
Total Asbestos Structures (PCMe)	CD/ADX	0	0	< 23.18			
Other Minerals	-	0	0	< 23.18			
Total All Structures (PCMe)	-	0	0	< 23.18			

Comment

Approved Signatory

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EMSL Analytical, Inc.
 200 Route 130 North Cinnaminson, NJ 08077
 Tel/Fax: (800) 220-3675 / (856) 786-5974
<http://www.EMSL.com> / cinnaslab@EMSL.com

EMSL Order ID: **042425152**
 Client: **Tetra Tech**
 Project ID: **Maui Fires Lahaina**

**ISO 10312 Determination of Asbestos Fibers
 Direct Transfer Transmission Electron Microscopy**

Analytical Bench Sheet Data

EMSL Sample ID: 042425152-0021		Customer Sample: Lab Blank									
Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
A1	B5	None Detected									
A1	B7	None Detected									
A1	D6	None Detected									
A1	D8	None Detected									
A2	C3	None Detected									
A2	C5	None Detected									
A2	F6	None Detected									
A3	A7	None Detected									
A3	A9	None Detected									
A3	E10	None Detected									

Abbreviations used:
 XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled
 XCGBLD - Crosses Countable Grid Bar Length Doubled



Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL Order Number / Lab Use Only

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

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

#042425152

PHONE: (800) 220-3675
EMAIL: CinnAeblab@EMSL.com

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

Customer Information	Customer ID:	Billing ID:
	Company Name: Tetra Tech	Company Name:
	Contact Name: Chelsea Saber	Billing Contact:
	Street Address: 1560 Broadway Ave STE 1400	Street Address:
	City, State, Zip: Denver, CO 80202 Country: USA	City, State, Zip:
Phone: (703) 489-2674	Phone:	
Email(s) for Report: chelsea.saber@tetratech.com	Email(s) for Invoice:	

RECEIVED
EMSL ANALYTICAL, INC.
CINNAMINSON, NJ
2024 DEC 11

Project Name/No: Mauai Fires Lahaina		Purchase Order: 1207985
EMSL LIMS Project ID: <small>(If applicable, EMSL will provide)</small>	US State where samples collected: HI	State of Connecticut (CT) must select project location: <input type="checkbox"/> Commercial (Taxable) <input type="checkbox"/> Residential (Non-Taxable)
Sampled By Name: Shaina Epstein	Sampled By Signature: <i>[Signature]</i>	No. of Samples in Shipment: 20

Turn-Around-Time (TAT)

3 Hour
 4-4.5 Hour AHERA ONLY
 6 Hour
 24 Hour
 32 Hour
 48 Hour
 72 Hour
 96 Hour
 1 Week
 2 Week

TEM Air 3-6 Hour, please call ahead to schedule. 32 Hour TAT available for select tests only; samples must be submitted by 11:30 am.

Test Selection

<p>PCM Air</p> <input type="checkbox"/> NIOSH 7400 <input type="checkbox"/> NIOSH 7400 w/ 8hr. TWA <p>PLM - Bulk (reporting limit)</p> <input type="checkbox"/> PLM EPA 600/R-93/116 (<1%) <input type="checkbox"/> PLM EPA NOB (<1%) <input type="checkbox"/> POINT COUNT <input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1,000 (<0.1%) POINT COUNT w/ GRAVIMETRIC <input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1,000 (<0.1%) <input type="checkbox"/> NIOSH 9002 (<1%) <input type="checkbox"/> NYS 198.1 (Friable - NY) <input type="checkbox"/> NYS 198.6 NOB (Non-Friable - NY) <input type="checkbox"/> NYS 198.8 (Vermiculite SM-V)	<p>TEM - Air</p> <input type="checkbox"/> AHERA 40 CFR, Part 763 <input type="checkbox"/> NIOSH 7402 <input type="checkbox"/> EPA Level II <input checked="" type="checkbox"/> ISO 10312* <p>TEM - Bulk</p> <input type="checkbox"/> TEM EPA NOB <input type="checkbox"/> NYS NOB 198.4 (Non-Friable-NY) <input type="checkbox"/> TEM EPA 600/R-93/116 w Milling Prep (0.1%) <p>Other Test (please specify)</p>	<p>TEM - Settled Dust</p> <input type="checkbox"/> Microvac - ASTM D5755 <input type="checkbox"/> Wipe - ASTM D6480 <input type="checkbox"/> Qualitative via Filtration Prep <input type="checkbox"/> Qualitative via Drop Mount Prep <p>Soil - Rock - Vermiculite (reporting limit)*</p> <input type="checkbox"/> PLM EPA 600/R-93/116 with milling prep (<0.25%) <input type="checkbox"/> PLM EPA 600/R-93/116 with milling prep (<0.1%) <input type="checkbox"/> TEM EPA 600/R-93/116 with milling prep (<0.1%) <input type="checkbox"/> TEM Qualitative via Filtration Prep <input type="checkbox"/> TEM Qualitative via Drop Mount Prep
--	---	--

*Please call with your project-specific requirements.

Positive Stop - Clearly Identified Homogeneous Areas (HA)
 Filter Pore Size (Air Samples)
 0.8um
 0.45um

Sample Number	Sample Location / Description	Volume, Area or Homogeneous Area	Date / Time Sampled (Air Monitoring Only)
MFL-AM05-120524-AB	DL698147	7,188.202	12/05/24 1053
MFL-AM02-120524-AB	DL698264	6,962.817	12/05/24 1110
MFL-AM03-120524-AB	DL698502	7,223.058	12/05/24 1255
MFL-AM07-120524-AB	DL698159	7,239.020	12/05/24 1315
MFL-FB01-120524-AB	DL694733	0	12/05/24 1200
MFL-AM05-120624-AB	DL698010	7,201.619	12/06/24 1055
MFL-AM02-120624-AB	DL697998	7,124.775	12/06/24 1108
MFL-AM03-120624-AB	DL698995	7,205.936	12/06/24 1256

Special Instructions and/or Regulatory Requirements (Sample Specifications, Processing Methods, Limits of Detection, etc.)

All samples received acceptable for analysis.

Method of Shipment: Fedex	Sample Condition Upon Receipt:
Relinquished by: <i>[Signature]</i>	Date/Time: 12/09/24 1100
Relinquished by: <i>[Signature]</i>	Date/Time: 12/11/24 1152

Controlled Document - COC-05 Asbestos R16 10/28/2021

AGREE TO ELECTRONIC SIGNATURE (By checking, I consent to signing this Chain of Custody document by electronic signature.)

EMSL Analytical, Inc.'s Laboratory Terms and Conditions are incorporated into this Chain of Custody by reference in their entirety. Submission of samples to EMSL Analytical, Inc. constitutes acceptance and acknowledgment of all terms and conditions by Customer.

Stage 1 Data Verification Checklist – Asbestos
HDOH CAB – Ambient Community Air Sampling – Lahaina
Task Order No. 23141

Reviewed by:

Kierra Johnson 12/30/2024 and Shanna Vasser 01/03/2025

Laboratory: EMSL Analytical, Inc. – North Cinnaminson, NJ

Collection date(s): 12/05/2024 – 12/08/2024

Report No: 42425152

- √ 1. Chain of custody (CoC) documentation is present.
- √ 2. Sample receipt condition information is present and acceptable.
- √ 3. Laboratory conducting the analysis is identified.
- √ 4. All samples submitted to the laboratory are accounted for.
- √ 5. Requested analytical methods were performed.
- √ 6. Analysis dates are provided.
- √ 7. Analyte results are provided.
- NA 8. Result qualifiers and definitions are provided.
- √ 9. Result units are reported.
- √ 10. Requested reporting limits are present.
- NA 11. Method detection limits are present.
- √ 12. Sample collection date and time are present.
- √ 13. No detections in field QC blanks (lot/media blanks, field blanks, etc.).

Discrepancies: None.

Notes: None.



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<http://www.EMSL.com> / cinnaaslab@EMSL.com

EMSL Order: 04308
Customer ID: TTDC42
Customer PO: 1207085
Project ID: N/A

Attn: Chelsea Saber
 Tetra Tech
 1560 Broadway, Suite 1400
 Denver, CO, 80202

Phone: (703) 489-2674
Fax: N/A
Received Date: 12/14/2024 11:15 AM
Analysis Date: 12/24/2024
Report Date: 12/30/2024

Project: Maui Fires Lahaina

ISO 10312 Determination of Asbestos Fibers Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	MFL-AM05-120924-AB	Sample Description:	DL698538
EMSL Sample Number:	000004308-0001	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L):	7158.4
Aspect ratio for fiber definition:	3:1	Area of original collection filter (mm ²):	385
Minimum Length (µm):	≥ 0.5	Grid Opening Area (mm ²):	0.0130
Chi ² Test for Random Distribution on Filter:	N/A (N/A)	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD	Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX		
Estimated Particulate Loading on Filter %:	3		
Target Analytical Sensitivity (Structures/cc):	0.001		
Analytical Sensitivity (Structures/cc):	0.0008	Limit of Detection (Structures/cc):	0.0024

TOTAL STRUCTURES (All Sizes)							
	Minimum ID Level	Structures Detected		Density (S/mm ²)	Concentration (S/cc)	95 % Confidence Interval (S/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile	CD	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total Amphibole	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Actinolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Amosite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Anthophyllite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Crocidolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Tremolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total Asbestos Structures	CD/ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Other Minerals	-	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total All Structures	-	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	

PCM EQUIVALENT (PCMe) Fibers (>5 microns in length with >3:1 Aspect Ratio)							
	Minimum ID Level	Fibers Detected		Density (F/mm ²)	Concentration (F/cc)	95 % Confidence Interval (F/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile (PCMe)	CD	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total Amphibole (PCMe)	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Actinolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Amosite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Anthophyllite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Crocidolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Tremolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total Asbestos Structures (PCMe)	CD/ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Other Minerals	-	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total All Structures (PCMe)	-	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	

Comment
 Numerous gypsum fibers present

Approved Signatory

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EMSL Order ID: 000004308

Client: Tetra Tech

Project ID: Maui Fires Lahaina

ISO 10312 Determination of Asbestos Fibers Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID:		000004308-0001		Customer Sample:		MFL-AM05-120924-AB					
Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
B2	J5	None Detected									
B2	G3	None Detected									
B2	C1	None Detected									
B3	H2	None Detected									
B3	D5	None Detected									

Abbreviations used:

XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled

XCGBLD - Crosses Countable Grid Bar Length Doubled



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EMSL Order: 04308
Customer ID: TTDC42
Customer PO: 1207085
Project ID: N/A

Attn: Chelsea Saber
 Tetra Tech
 1560 Broadway, Suite 1400
 Denver, CO, 80202

Phone: (703) 489-2674
Fax: N/A
Received Date: 12/14/2024 11:15 AM
Analysis Date: 12/24/2024
Report Date: 12/30/2024

Project: Maui Fires Lahaina

**ISO 10312 Determination of Asbestos Fibers
 Direct Transfer Transmission Electron Microscopy**

Customer Sample Number:	MFL-AM02-120924-AB	Sample Description:	DL692798
EMSL Sample Number:	000004308-0002	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L):	6947.3
Aspect ratio for fiber definition:	3:1	Area of original collection filter (mm ²):	385
Minimum Length (µm):	≥ 0.5	Grid Opening Area (mm ²):	0.0130
Chi ² Test for Random Distribution on Filter:	N/A (N/A)	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD	Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX		
Estimated Particulate Loading on Filter %:	5		
Target Analytical Sensitivity (Structures/cc):	0.001		
Analytical Sensitivity (Structures/cc):	0.0009	Limit of Detection (Structures/cc):	0.0027

TOTAL STRUCTURES (All Sizes)							
	Minimum ID Level	Structures Detected		Density (S/mm ²)	Concentration (S/cc)	95 % Confidence Interval (S/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile	CD	0	0	< 46.00	< 0.0027	Not Applicable - 0.0027	
Total Amphibole	ADX	0	0	< 46.00	< 0.0027	Not Applicable - 0.0027	
Actinolite	ADX	0	0	< 46.00	< 0.0027	Not Applicable - 0.0027	
Amosite	ADX	0	0	< 46.00	< 0.0027	Not Applicable - 0.0027	
Anthophyllite	ADX	0	0	< 46.00	< 0.0027	Not Applicable - 0.0027	
Crocidolite	ADX	0	0	< 46.00	< 0.0027	Not Applicable - 0.0027	
Tremolite	ADX	0	0	< 46.00	< 0.0027	Not Applicable - 0.0027	
Total Asbestos Structures	CD/ADX	0	0	< 46.00	< 0.0027	Not Applicable - 0.0027	
Other Minerals	-	0	0	< 46.00	< 0.0027	Not Applicable - 0.0027	
Total All Structures	-	0	0	< 46.00	< 0.0027	Not Applicable - 0.0027	

PCM EQUIVALENT (PCMe) Fibers (>5 microns in length with >3:1 Aspect Ratio)							
	Minimum ID Level	Fibers Detected		Density (F/mm ²)	Concentration (F/cc)	95 % Confidence Interval (F/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile (PCMe)	CD	0	0	< 46.00	< 0.0027	Not Applicable - 0.0027	
Total Amphibole (PCMe)	ADX	0	0	< 46.00	< 0.0027	Not Applicable - 0.0027	
Actinolite	ADX	0	0	< 46.00	< 0.0027	Not Applicable - 0.0027	
Amosite	ADX	0	0	< 46.00	< 0.0027	Not Applicable - 0.0027	
Anthophyllite	ADX	0	0	< 46.00	< 0.0027	Not Applicable - 0.0027	
Crocidolite	ADX	0	0	< 46.00	< 0.0027	Not Applicable - 0.0027	
Tremolite	ADX	0	0	< 46.00	< 0.0027	Not Applicable - 0.0027	
Total Asbestos Structures (PCMe)	CD/ADX	0	0	< 46.00	< 0.0027	Not Applicable - 0.0027	
Other Minerals	-	0	0	< 46.00	< 0.0027	Not Applicable - 0.0027	
Total All Structures (PCMe)	-	0	0	< 46.00	< 0.0027	Not Applicable - 0.0027	

Comment
 Numerous gypsum fibers present

Approved Signatory

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<http://www.EMSL.com> / cinnaslab@EMSL.com

EMSL Order ID: 000004308
Client: Tetra Tech
Project ID: Maui Fires Lahaina

**ISO 10312 Determination of Asbestos Fibers
 Direct Transfer Transmission Electron Microscopy**

Analytical Bench Sheet Data

EMSL Sample ID: 000004308-0002			Customer Sample: MFL-AM02-120924-AB								
Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
B5	J2	None Detected									
B5	G6	None Detected									
B5	C9	None Detected									
B6	B5	None Detected									
B6	E9	None Detected									

Abbreviations used:
 XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled
 XCGBLD - Crosses Countable Grid Bar Length Doubled



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EMSL Order: 04308
Customer ID: TTDC42
Customer PO: 1207085
Project ID: N/A

Attn: Chelsea Saber
 Tetra Tech
 1560 Broadway, Suite 1400
 Denver, CO, 80202

Project: Maui Fires Lahaina

Phone: (703) 489-2674
Fax: N/A
Received Date: 12/14/2024 11:15 AM
Analysis Date: 12/24/2024
Report Date: 12/30/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: MFL-AM03-120924-AB **Sample Description:** DL692789

EMSL Sample Number: 000004308-0003 Sample Matrix: Air
 Magnification used for fiber counting: 20,000 Volume (L): 7183.0
 Aspect ratio for fiber definition: 3:1 Area of original collection filter (mm²): 385
 Minimum Length (µm): ≥ 0.5 Grid Opening Area (mm²): 0.0130
 Chi² Test for Random Distribution on Filter: N/A (N/A) Grid Openings Analyzed: 5
 Minimum Level of analysis (chrysotile): CD Analyst: P. Harrison
 Minimum Level of analysis (amphibole): ADX

Estimated Particulate Loading on Filter %: 3
 Target Analytical Sensitivity (Structures/cc): 0.001

Analytical Sensitivity (Structures/cc): 0.0008 Limit of Detection (Structures/cc): 0.0024

TOTAL STRUCTURES (All Sizes)							
	Minimum ID Level	Structures Detected		Density (S/mm ²)	Concentration (S/cc)	95 % Confidence Interval (S/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile	CD	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total Amphibole	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Actinolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Amosite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Anthophyllite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Crocidolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Tremolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total Asbestos Structures	CD/ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Other Minerals	-	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total All Structures	-	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	

PCM EQUIVALENT (PCMe) Fibers (>5 microns in length with >3:1 Aspect Ratio)							
	Minimum ID Level	Fibers Detected		Density (F/mm ²)	Concentration (F/cc)	95 % Confidence Interval (F/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile (PCMe)	CD	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total Amphibole (PCMe)	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Actinolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Amosite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Anthophyllite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Crocidolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Tremolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total Asbestos Structures (PCMe)	CD/ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Other Minerals	-	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total All Structures (PCMe)	-	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	

Comment

Approved Signatory

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<http://www.EMSL.com> / cinnaslab@EMSL.com

EMSL Order ID: 000004308
Client: Tetra Tech
Project ID: Maui Fires Lahaina

**ISO 10312 Determination of Asbestos Fibers
 Direct Transfer Transmission Electron Microscopy**

Analytical Bench Sheet Data

EMSL Sample ID: 000004308-0003			Customer Sample: MFL-AM03-120924-AB								
Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
C2	A6	None Detected									
C2	C8	None Detected									
C2	G5	None Detected									
C3	B6	None Detected									
C3	H8	None Detected									

Abbreviations used:
 XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled
 XCGBLD - Crosses Countable Grid Bar Length Doubled



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EMSL Order: 04308
Customer ID: TTDC42
Customer PO: 1207085
Project ID: N/A

Attn: Chelsea Saber
 Tetra Tech
 1560 Broadway, Suite 1400
 Denver, CO, 80202

Phone: (703) 489-2674
Fax: N/A
Received Date: 12/14/2024 11:15 AM
Analysis Date: 12/24/2024
Report Date: 12/30/2024

Project: Maui Fires Lahaina

**ISO 10312 Determination of Asbestos Fibers
 Direct Transfer Transmission Electron Microscopy**

Customer Sample Number:	MFL-AM07-120924-AB	Sample Description:	DL692801
EMSL Sample Number:	000004308-0004	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L):	7193.9
Aspect ratio for fiber definition:	3:1	Area of original collection filter (mm ²):	385
Minimum Length (µm):	≥ 0.5	Grid Opening Area (mm ²):	0.0130
Chi ² Test for Random Distribution on Filter:	N/A (N/A)	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD	Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX		
Estimated Particulate Loading on Filter %:	8		
Target Analytical Sensitivity (Structures/cc):	0.001		
Analytical Sensitivity (Structures/cc):	0.0008	Limit of Detection (Structures/cc):	0.0024

TOTAL STRUCTURES (All Sizes)							
	Minimum ID Level	Structures Detected		Density (S/mm ²)	Concentration (S/cc)	95 % Confidence Interval (S/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile	CD	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total Amphibole	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Actinolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Amosite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Anthophyllite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Crocidolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Tremolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total Asbestos Structures	CD/ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Other Minerals	-	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total All Structures	-	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	

PCM EQUIVALENT (PCMe) Fibers (>5 microns in length with >3:1 Aspect Ratio)							
	Minimum ID Level	Fibers Detected		Density (F/mm ²)	Concentration (F/cc)	95 % Confidence Interval (F/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile (PCMe)	CD	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total Amphibole (PCMe)	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Actinolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Amosite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Anthophyllite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Crocidolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Tremolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total Asbestos Structures (PCMe)	CD/ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Other Minerals	-	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total All Structures (PCMe)	-	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	

Comment
 Numerous gypsum fibers present

Approved Signatory

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EMSL Order ID: 000004308
Client: Tetra Tech
Project ID: Maui Fires Lahaina

**ISO 10312 Determination of Asbestos Fibers
 Direct Transfer Transmission Electron Microscopy**

Analytical Bench Sheet Data

EMSL Sample ID: 000004308-0004			Customer Sample: MFL-AM07-120924-AB								
Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
C5	A5	None Detected									
C5	E8	None Detected									
C5	H4	None Detected									
C6	A4	None Detected									
C6	G4	None Detected									

Abbreviations used:
 XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled
 XCGBLD - Crosses Countable Grid Bar Length Doubled



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Project ID: N/A

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Received Date: 12/14/2024 11:15 AM
Analysis Date: 12/24/2024
Report Date: 12/30/2024

Project: Maui Fires Lahaina

**ISO 10312 Determination of Asbestos Fibers
 Direct Transfer Transmission Electron Microscopy**

Customer Sample Number: MFL-FB01-120924-AB **Sample Description:** DL692812

EMSL Sample Number: 000004308-0005 Sample Matrix: Air
 Magnification used for fiber counting: 20,000 Volume (L): 0.0
 Aspect ratio for fiber definition: 3:1 Area of original collection filter (mm²): 385
 Minimum Length (µm): ≥ 0.5 Grid Opening Area (mm²): 0.0130
 Chi² Test for Random Distribution on Filter: N/A (N/A) Grid Openings Analyzed: 10
 Minimum Level of analysis (chrysotile): CD Analyst: P. Harrison
 Minimum Level of analysis (amphibole): ADX

Estimated Particulate Loading on Filter %: 1
 Target Analytical Sensitivity (Structures/cc): 0.001

Analytical Sensitivity (Structures/cc): N/A **Limit of Detection (Structures/cc):** N/A

TOTAL STRUCTURES (All Sizes)							
	Minimum ID Level	Structures Detected		Density (S/mm ²)	Concentration (S/cc)	95 % Confidence Interval (S/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile	CD	0	0	< 23.00			
Total Amphibole	ADX	0	0	< 23.00			
Actinolite	ADX	0	0	< 23.00			
Amosite	ADX	0	0	< 23.00			
Anthophyllite	ADX	0	0	< 23.00			
Crocidolite	ADX	0	0	< 23.00			
Tremolite	ADX	0	0	< 23.00			
Total Asbestos Structures	CD/ADX	0	0	< 23.00			
Other Minerals	-	0	0	< 23.00			
Total All Structures	-	0	0	< 23.00			

PCM EQUIVALENT (PCMe) Fibers (>5 microns in length with >3:1 Aspect Ratio)							
	Minimum ID Level	Fibers Detected		Density (F/mm ²)	Concentration (F/cc)	95 % Confidence Interval (F/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile (PCMe)	CD	0	0	< 23.00			
Total Amphibole (PCMe)	ADX	0	0	< 23.00			
Actinolite	ADX	0	0	< 23.00			
Amosite	ADX	0	0	< 23.00			
Anthophyllite	ADX	0	0	< 23.00			
Crocidolite	ADX	0	0	< 23.00			
Tremolite	ADX	0	0	< 23.00			
Total Asbestos Structures (PCMe)	CD/ADX	0	0	< 23.00			
Other Minerals	-	0	0	< 23.00			
Total All Structures (PCMe)	-	0	0	< 23.00			

Comment

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EMSL Order ID: **000004308**
 Client: **Tetra Tech**
 Project ID: **Maui Fires Lahaina**

**ISO 10312 Determination of Asbestos Fibers
 Direct Transfer Transmission Electron Microscopy**

Analytical Bench Sheet Data

EMSL Sample ID:		000004308-0005		Customer Sample:		MFL-FB01-120924-AB					
Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
D2	J1	None Detected									
D2	H2	None Detected									
D2	F4	None Detected									
D2	D7	None Detected									
D2	B8	None Detected									
D3	J1	None Detected									
D3	H6	None Detected									
D3	F7	None Detected									
D3	D1	None Detected									
D3	B6	None Detected									

Abbreviations used:
 XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled
 XCGBLD - Crosses Countable Grid Bar Length Doubled



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Customer PO: 1207085
Project ID: N/A

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Received Date: 12/14/2024 11:15 AM
Analysis Date: 12/24/2024
Report Date: 12/30/2024

Project: Maui Fires Lahaina

**ISO 10312 Determination of Asbestos Fibers
 Direct Transfer Transmission Electron Microscopy**

Customer Sample Number: MFL-LB01-120924-AB **Sample Description:** DL692793

EMSL Sample Number: 000004308-0006 Sample Matrix: Air
 Magnification used for fiber counting: 20,000 Volume (L): 0.0
 Aspect ratio for fiber definition: 3:1 Area of original collection filter (mm²): 385
 Minimum Length (µm): ≥ 0.5 Grid Opening Area (mm²): 0.0130
 Chi² Test for Random Distribution on Filter: N/A (N/A) Grid Openings Analyzed: 10
 Minimum Level of analysis (chrysotile): CD Analyst: P. Harrison
 Minimum Level of analysis (amphibole): ADX

Estimated Particulate Loading on Filter %: 1
 Target Analytical Sensitivity (Structures/cc): 0.001

Analytical Sensitivity (Structures/cc): N/A **Limit of Detection (Structures/cc):** N/A

TOTAL STRUCTURES (All Sizes)							
	Minimum ID Level	Structures Detected		Density (S/mm ²)	Concentration (S/cc)	95 % Confidence Interval (S/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile	CD	0	0	< 23.00			
Total Amphibole	ADX	0	0	< 23.00			
Actinolite	ADX	0	0	< 23.00			
Amosite	ADX	0	0	< 23.00			
Anthophyllite	ADX	0	0	< 23.00			
Crocidolite	ADX	0	0	< 23.00			
Tremolite	ADX	0	0	< 23.00			
Total Asbestos Structures	CD/ADX	0	0	< 23.00			
Other Minerals	-	0	0	< 23.00			
Total All Structures	-	0	0	< 23.00			

PCM EQUIVALENT (PCMe) Fibers (>5 microns in length with >3:1 Aspect Ratio)							
	Minimum ID Level	Fibers Detected		Density (F/mm ²)	Concentration (F/cc)	95 % Confidence Interval (F/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile (PCMe)	CD	0	0	< 23.00			
Total Amphibole (PCMe)	ADX	0	0	< 23.00			
Actinolite	ADX	0	0	< 23.00			
Amosite	ADX	0	0	< 23.00			
Anthophyllite	ADX	0	0	< 23.00			
Crocidolite	ADX	0	0	< 23.00			
Tremolite	ADX	0	0	< 23.00			
Total Asbestos Structures (PCMe)	CD/ADX	0	0	< 23.00			
Other Minerals	-	0	0	< 23.00			
Total All Structures (PCMe)	-	0	0	< 23.00			

Comment

Approved Signatory

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EMSL Order ID: 000004308

Client: Tetra Tech

Project ID: Maui Fires Lahaina

ISO 10312 Determination of Asbestos Fibers Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 000004308-0006		Customer Sample: MFL-LB01-120924-AB									
Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
D5	J6	None Detected									
D5	H3	None Detected									
D5	F8	None Detected									
D5	D5	None Detected									
D5	B4	None Detected									
D6	J5	None Detected									
D6	H3	None Detected									
D6	F2	None Detected									
D6	D9	None Detected									
D6	B7	None Detected									

Abbreviations used:

XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled

XCGBLD - Crosses Countable Grid Bar Length Doubled



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Analysis Date: 12/24/2024
Report Date: 12/30/2024

Project: Maui Fires Lahaina

**ISO 10312 Determination of Asbestos Fibers
 Direct Transfer Transmission Electron Microscopy**

Customer Sample Number:	MFL-AM05-121024-AB	Sample Description:	DL692791
EMSL Sample Number:	000004308-0007	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L):	7201.6
Aspect ratio for fiber definition:	3:1	Area of original collection filter (mm ²):	385
Minimum Length (µm):	≥ 0.5	Grid Opening Area (mm ²):	0.0130
Chi ² Test for Random Distribution on Filter:	N/A (N/A)	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD	Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX		
Estimated Particulate Loading on Filter %:	2		
Target Analytical Sensitivity (Structures/cc):	0.001		
Analytical Sensitivity (Structures/cc):	0.0008	Limit of Detection (Structures/cc):	0.0024

TOTAL STRUCTURES (All Sizes)							
	Minimum ID Level	Structures Detected		Density (S/mm ²)	Concentration (S/cc)	95 % Confidence Interval (S/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile	CD	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total Amphibole	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Actinolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Amosite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Anthophyllite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Crocidolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Tremolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total Asbestos Structures	CD/ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Other Minerals	-	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total All Structures	-	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	

PCM EQUIVALENT (PCMe) Fibers (>5 microns in length with >3:1 Aspect Ratio)							
	Minimum ID Level	Fibers Detected		Density (F/mm ²)	Concentration (F/cc)	95 % Confidence Interval (F/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile (PCMe)	CD	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total Amphibole (PCMe)	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Actinolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Amosite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Anthophyllite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Crocidolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Tremolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total Asbestos Structures (PCMe)	CD/ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Other Minerals	-	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total All Structures (PCMe)	-	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	

Comment

Approved Signatory

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Client: Tetra Tech

Project ID: Maui Fires Lahaina

ISO 10312 Determination of Asbestos Fibers Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID:		000004308-0007		Customer Sample:		MFL-AM05-121024-AB					
Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
E2	A7	None Detected									
E2	D6	None Detected									
E2	G8	None Detected									
E3	A10	None Detected									
E3	G6	None Detected									

Abbreviations used:

XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled

XCGBLD - Crosses Countable Grid Bar Length Doubled



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Received Date: 12/14/2024 11:15 AM
Analysis Date: 12/24/2024
Report Date: 12/30/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	MFL-AM02-121024-AB	Sample Description:	DL692782
EMSL Sample Number:	000004308-0008	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L):	7054.8
Aspect ratio for fiber definition:	3:1	Area of original collection filter (mm ²):	385
Minimum Length (µm):	≥ 0.5	Grid Opening Area (mm ²):	0.0130
Chi ² Test for Random Distribution on Filter:	N/A (N/A)	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD	Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX		
Estimated Particulate Loading on Filter %:	5		
Target Analytical Sensitivity (Structures/cc):	0.001		
Analytical Sensitivity (Structures/cc):	0.0008	Limit of Detection (Structures/cc):	0.0024

TOTAL STRUCTURES (All Sizes)							
	Minimum ID Level	Structures Detected		Density (S/mm ²)	Concentration (S/cc)	95 % Confidence Interval (S/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile	CD	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total Amphibole	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Actinolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Amosite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Anthophyllite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Crocidolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Tremolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total Asbestos Structures	CD/ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Other Minerals	-	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total All Structures	-	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	

PCM EQUIVALENT (PCMe) Fibers (>5 microns in length with >3:1 Aspect Ratio)							
	Minimum ID Level	Fibers Detected		Density (F/mm ²)	Concentration (F/cc)	95 % Confidence Interval (F/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile (PCMe)	CD	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total Amphibole (PCMe)	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Actinolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Amosite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Anthophyllite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Crocidolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Tremolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total Asbestos Structures (PCMe)	CD/ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Other Minerals	-	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total All Structures (PCMe)	-	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	

Comment

Approved Signatory

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Client: Tetra Tech

Project ID: Maui Fires Lahaina

ISO 10312 Determination of Asbestos Fibers Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID:		000004308-0008		Customer Sample:		MFL-AM02-121024-AB					
Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
E5	B7	None Detected									
E5	E4	None Detected									
E5	I2	None Detected									
E6	B2	None Detected									
E6	G4	None Detected									

Abbreviations used:

XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled

XCGBLD - Crosses Countable Grid Bar Length Doubled



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Analysis Date: 12/24/2024
Report Date: 12/30/2024

Project: Maui Fires Lahaina

**ISO 10312 Determination of Asbestos Fibers
 Direct Transfer Transmission Electron Microscopy**

Customer Sample Number: MFL-AM03-121024-AB **Sample Description:** DL692813

EMSL Sample Number: 000004308-0009 Sample Matrix: Air
 Magnification used for fiber counting: 20,000 Volume (L): 7229.2
 Aspect ratio for fiber definition: 3:1 Area of original collection filter (mm²): 385
 Minimum Length (µm): ≥ 0.5 Grid Opening Area (mm²): 0.0130
 Chi² Test for Random Distribution on Filter: N/A (N/A) Grid Openings Analyzed: 5
 Minimum Level of analysis (chrysotile): CD Analyst: P. Harrison
 Minimum Level of analysis (amphibole): ADX

Estimated Particulate Loading on Filter %: 3
 Target Analytical Sensitivity (Structures/cc): 0.001

Analytical Sensitivity (Structures/cc): 0.0008 Limit of Detection (Structures/cc): 0.0024

TOTAL STRUCTURES (All Sizes)							
	Minimum ID Level	Structures Detected		Density (S/mm ²)	Concentration (S/cc)	95 % Confidence Interval (S/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile	CD	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total Amphibole	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Actinolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Amosite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Anthophyllite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Crocidolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Tremolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total Asbestos Structures	CD/ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Other Minerals	-	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total All Structures	-	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	

PCM EQUIVALENT (PCMe) Fibers (>5 microns in length with >3:1 Aspect Ratio)							
	Minimum ID Level	Fibers Detected		Density (F/mm ²)	Concentration (F/cc)	95 % Confidence Interval (F/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile (PCMe)	CD	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total Amphibole (PCMe)	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Actinolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Amosite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Anthophyllite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Crocidolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Tremolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total Asbestos Structures (PCMe)	CD/ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Other Minerals	-	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total All Structures (PCMe)	-	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	

Comment

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EMSL Order ID: 000004308
Client: Tetra Tech
Project ID: Maui Fires Lahaina

**ISO 10312 Determination of Asbestos Fibers
 Direct Transfer Transmission Electron Microscopy**

Analytical Bench Sheet Data

EMSL Sample ID: 000004308-0009			Customer Sample: MFL-AM03-121024-AB								
Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
F2	A5	None Detected									
F2	C8	None Detected									
F2	G6	None Detected									
F3	B7	None Detected									
F3	G5	None Detected									

Abbreviations used:
 XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled
 XCGBLD - Crosses Countable Grid Bar Length Doubled



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Customer ID: TTDC42
Customer PO: 1207085
Project ID: N/A

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Phone: (703) 489-2674
Fax: N/A
Received Date: 12/14/2024 11:15 AM
Analysis Date: 12/24/2024
Report Date: 12/30/2024

Project: Maui Fires Lahaina

ISO 10312 Determination of Asbestos Fibers Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	MFL-AM07-121024-AB	Sample Description:	DL692809
EMSL Sample Number:	000004308-0010	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L):	7317.2
Aspect ratio for fiber definition:	3:1	Area of original collection filter (mm ²):	385
Minimum Length (µm):	≥ 0.5	Grid Opening Area (mm ²):	0.0130
Chi ² Test for Random Distribution on Filter:	N/A (N/A)	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD	Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX		
Estimated Particulate Loading on Filter %:	8		
Target Analytical Sensitivity (Structures/cc):	0.001		
Analytical Sensitivity (Structures/cc):	0.0008	Limit of Detection (Structures/cc):	0.0024

TOTAL STRUCTURES (All Sizes)							
	Minimum ID Level	Structures Detected		Density (S/mm ²)	Concentration (S/cc)	95 % Confidence Interval (S/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile	CD	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total Amphibole	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Actinolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Amosite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Anthophyllite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Crocidolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Tremolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total Asbestos Structures	CD/ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Other Minerals	-	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total All Structures	-	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	

PCM EQUIVALENT (PCMe) Fibers (>5 microns in length with >3:1 Aspect Ratio)							
	Minimum ID Level	Fibers Detected		Density (F/mm ²)	Concentration (F/cc)	95 % Confidence Interval (F/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile (PCMe)	CD	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total Amphibole (PCMe)	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Actinolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Amosite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Anthophyllite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Crocidolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Tremolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total Asbestos Structures (PCMe)	CD/ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Other Minerals	-	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total All Structures (PCMe)	-	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	

Comment
 Numerous gypsum fibers present

Approved Signatory

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EMSL Order ID: 000004308

Client: Tetra Tech

Project ID: Maui Fires Lahaina

ISO 10312 Determination of Asbestos Fibers Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 000004308-0010		Customer Sample: MFL-AM07-121024-AB									
Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
F5	H4	None Detected									
F5	E7	None Detected									
F5	C9	None Detected									
F6	C2	None Detected									
F6	G4	None Detected									

Abbreviations used:

XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled

XCGBLD - Crosses Countable Grid Bar Length Doubled



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Analysis Date: 12/24/2024
Report Date: 12/30/2024

Project: Maui Fires Lahaina

**ISO 10312 Determination of Asbestos Fibers
 Direct Transfer Transmission Electron Microscopy**

Customer Sample Number: MFL-FB01-121024-AB **Sample Description:** DL692814

EMSL Sample Number: 000004308-0011 Sample Matrix: Air
 Magnification used for fiber counting: 20,000 Volume (L): 0.0
 Aspect ratio for fiber definition: 3:1 Area of original collection filter (mm²): 385
 Minimum Length (µm): ≥ 0.5 Grid Opening Area (mm²): 0.0130
 Chi² Test for Random Distribution on Filter: N/A (N/A) Grid Openings Analyzed: 10
 Minimum Level of analysis (chrysotile): CD Analyst: P. Harrison
 Minimum Level of analysis (amphibole): ADX

Estimated Particulate Loading on Filter %: 1
 Target Analytical Sensitivity (Structures/cc): 0.001

Analytical Sensitivity (Structures/cc): N/A **Limit of Detection (Structures/cc):** N/A

TOTAL STRUCTURES (All Sizes)							
	Minimum ID Level	Structures Detected		Density (S/mm ²)	Concentration (S/cc)	95 % Confidence Interval (S/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile	CD	0	0	< 23.00			
Total Amphibole	ADX	0	0	< 23.00			
Actinolite	ADX	0	0	< 23.00			
Amosite	ADX	0	0	< 23.00			
Anthophyllite	ADX	0	0	< 23.00			
Crocidolite	ADX	0	0	< 23.00			
Tremolite	ADX	0	0	< 23.00			
Total Asbestos Structures	CD/ADX	0	0	< 23.00			
Other Minerals	-	0	0	< 23.00			
Total All Structures	-	0	0	< 23.00			

PCM EQUIVALENT (PCMe) Fibers (>5 microns in length with >3:1 Aspect Ratio)							
	Minimum ID Level	Fibers Detected		Density (F/mm ²)	Concentration (F/cc)	95 % Confidence Interval (F/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile (PCMe)	CD	0	0	< 23.00			
Total Amphibole (PCMe)	ADX	0	0	< 23.00			
Actinolite	ADX	0	0	< 23.00			
Amosite	ADX	0	0	< 23.00			
Anthophyllite	ADX	0	0	< 23.00			
Crocidolite	ADX	0	0	< 23.00			
Tremolite	ADX	0	0	< 23.00			
Total Asbestos Structures (PCMe)	CD/ADX	0	0	< 23.00			
Other Minerals	-	0	0	< 23.00			
Total All Structures (PCMe)	-	0	0	< 23.00			

Comment

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EMSL Order ID: 000004308

Client: Tetra Tech

Project ID: Maui Fires Lahaina

ISO 10312 Determination of Asbestos Fibers Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 000004308-0011		Customer Sample: MFL-FB01-121024-AB									
Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
G2	A8	None Detected									
G2	C10	None Detected									
G2	E8	None Detected									
G2	G6	None Detected									
G2	I7	None Detected									
G3	J1	None Detected									
G3	H5	None Detected									
G3	F2	None Detected									
G3	D1	None Detected									
G3	B6	None Detected									

Abbreviations used:

XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled

XCGBLD - Crosses Countable Grid Bar Length Doubled



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Project ID: N/A

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Project: Maui Fires Lahaina

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Fax: N/A
Received Date: 12/14/2024 11:15 AM
Analysis Date: 12/24/2024
Report Date: 12/30/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	MFL-AM05-121124-AB	Sample Description:	DL692761
EMSL Sample Number:	000004308-0012	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L):	7110.5
Aspect ratio for fiber definition:	3:1	Area of original collection filter (mm ²):	385
Minimum Length (µm):	≥ 0.5	Grid Opening Area (mm ²):	0.0130
Chi ² Test for Random Distribution on Filter:	N/A (N/A)	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD	Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX		
Estimated Particulate Loading on Filter %:	3		
Target Analytical Sensitivity (Structures/cc):	0.001		
Analytical Sensitivity (Structures/cc):	0.0008	Limit of Detection (Structures/cc):	0.0024

TOTAL STRUCTURES (All Sizes)							
	Minimum ID Level	Structures Detected		Density (S/mm ²)	Concentration (S/cc)	95 % Confidence Interval (S/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile	CD	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total Amphibole	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Actinolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Amosite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Anthophyllite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Crocidolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Tremolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total Asbestos Structures	CD/ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Other Minerals	-	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total All Structures	-	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	

PCM EQUIVALENT (PCMe) Fibers (>5 microns in length with >3:1 Aspect Ratio)							
	Minimum ID Level	Fibers Detected		Density (F/mm ²)	Concentration (F/cc)	95 % Confidence Interval (F/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile (PCMe)	CD	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total Amphibole (PCMe)	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Actinolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Amosite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Anthophyllite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Crocidolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Tremolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total Asbestos Structures (PCMe)	CD/ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Other Minerals	-	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total All Structures (PCMe)	-	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	

Comment

Approved Signatory

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EMSL Order ID: **000004308**
 Client: **Tetra Tech**
 Project ID: **Maui Fires Lahaina**

**ISO 10312 Determination of Asbestos Fibers
 Direct Transfer Transmission Electron Microscopy**

Analytical Bench Sheet Data

EMSL Sample ID: 000004308-0012			Customer Sample: MFL-AM05-121124-AB								
Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
G5	I5	None Detected									
G5	G3	None Detected									
G5	D3	None Detected									
G6	I4	None Detected									
G6	E4	None Detected									

Abbreviations used:
 XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled
 XCGBLD - Crosses Countable Grid Bar Length Doubled



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Received Date: 12/14/2024 11:15 AM
Analysis Date: 12/24/2024
Report Date: 12/30/2024

Project: Maui Fires Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: MFL-AM02-121124-AB **Sample Description:** DL692792

EMSL Sample Number: 000004308-0013 Sample Matrix: Air
 Magnification used for fiber counting: 20,000 Volume (L): 6953.6
 Aspect ratio for fiber definition: 3:1 Area of original collection filter (mm²): 385
 Minimum Length (µm): ≥ 0.5 Grid Opening Area (mm²): 0.0130
 Chi² Test for Random Distribution on Filter: N/A (N/A) Grid Openings Analyzed: 5
 Minimum Level of analysis (chrysotile): CD Analyst: P. Harrison
 Minimum Level of analysis (amphibole): ADX

Estimated Particulate Loading on Filter %: 5
 Target Analytical Sensitivity (Structures/cc): 0.001

Analytical Sensitivity (Structures/cc): 0.0009 Limit of Detection (Structures/cc): 0.0027

TOTAL STRUCTURES (All Sizes)							
	Minimum ID Level	Structures Detected		Density (S/mm ²)	Concentration (S/cc)	95 % Confidence Interval (S/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile	CD	0	0	< 46.00	< 0.0027	Not Applicable - 0.0027	
Total Amphibole	ADX	0	0	< 46.00	< 0.0027	Not Applicable - 0.0027	
Actinolite	ADX	0	0	< 46.00	< 0.0027	Not Applicable - 0.0027	
Amosite	ADX	0	0	< 46.00	< 0.0027	Not Applicable - 0.0027	
Anthophyllite	ADX	0	0	< 46.00	< 0.0027	Not Applicable - 0.0027	
Crocidolite	ADX	0	0	< 46.00	< 0.0027	Not Applicable - 0.0027	
Tremolite	ADX	0	0	< 46.00	< 0.0027	Not Applicable - 0.0027	
Total Asbestos Structures	CD/ADX	0	0	< 46.00	< 0.0027	Not Applicable - 0.0027	
Other Minerals	-	0	0	< 46.00	< 0.0027	Not Applicable - 0.0027	
Total All Structures	-	0	0	< 46.00	< 0.0027	Not Applicable - 0.0027	

PCM EQUIVALENT (PCMe) Fibers (>5 microns in length with >3:1 Aspect Ratio)							
	Minimum ID Level	Fibers Detected		Density (F/mm ²)	Concentration (F/cc)	95 % Confidence Interval (F/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile (PCMe)	CD	0	0	< 46.00	< 0.0027	Not Applicable - 0.0027	
Total Amphibole (PCMe)	ADX	0	0	< 46.00	< 0.0027	Not Applicable - 0.0027	
Actinolite	ADX	0	0	< 46.00	< 0.0027	Not Applicable - 0.0027	
Amosite	ADX	0	0	< 46.00	< 0.0027	Not Applicable - 0.0027	
Anthophyllite	ADX	0	0	< 46.00	< 0.0027	Not Applicable - 0.0027	
Crocidolite	ADX	0	0	< 46.00	< 0.0027	Not Applicable - 0.0027	
Tremolite	ADX	0	0	< 46.00	< 0.0027	Not Applicable - 0.0027	
Total Asbestos Structures (PCMe)	CD/ADX	0	0	< 46.00	< 0.0027	Not Applicable - 0.0027	
Other Minerals	-	0	0	< 46.00	< 0.0027	Not Applicable - 0.0027	
Total All Structures (PCMe)	-	0	0	< 46.00	< 0.0027	Not Applicable - 0.0027	

Comment

Approved Signatory

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Client: Tetra Tech

Project ID: Maui Fires Lahaina

ISO 10312 Determination of Asbestos Fibers Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID:		000004308-0013		Customer Sample:		MFL-AM02-121124-AB					
Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
H2	J2	None Detected									
H2	G3	None Detected									
H2	C2	None Detected									
H3	I2	None Detected									
H3	C5	None Detected									

Abbreviations used:

XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled

XCGBLD - Crosses Countable Grid Bar Length Doubled



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Report Date: 12/30/2024

Project: Maui Fires Lahaina

**ISO 10312 Determination of Asbestos Fibers
 Direct Transfer Transmission Electron Microscopy**

Customer Sample Number: MFL-AM03-121124-AB **Sample Description:** DL692765

EMSL Sample Number: 000004308-0014 Sample Matrix: Air
 Magnification used for fiber counting: 20,000 Volume (L): 7215.6
 Aspect ratio for fiber definition: 3:1 Area of original collection filter (mm²): 385
 Minimum Length (µm): ≥ 0.5 Grid Opening Area (mm²): 0.0130
 Chi² Test for Random Distribution on Filter: N/A (N/A) Grid Openings Analyzed: 5
 Minimum Level of analysis (chrysotile): CD Analyst: P. Harrison
 Minimum Level of analysis (amphibole): ADX

Estimated Particulate Loading on Filter %: 3
 Target Analytical Sensitivity (Structures/cc): 0.001

Analytical Sensitivity (Structures/cc): 0.0008 Limit of Detection (Structures/cc): 0.0024

TOTAL STRUCTURES (All Sizes)							
	Minimum ID Level	Structures Detected		Density (S/mm ²)	Concentration (S/cc)	95 % Confidence Interval (S/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile	CD	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total Amphibole	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Actinolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Amosite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Anthophyllite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Crocidolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Tremolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total Asbestos Structures	CD/ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Other Minerals	-	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total All Structures	-	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	

PCM EQUIVALENT (PCMe) Fibers (>5 microns in length with >3:1 Aspect Ratio)							
	Minimum ID Level	Fibers Detected		Density (F/mm ²)	Concentration (F/cc)	95 % Confidence Interval (F/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile (PCMe)	CD	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total Amphibole (PCMe)	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Actinolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Amosite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Anthophyllite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Crocidolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Tremolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total Asbestos Structures (PCMe)	CD/ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Other Minerals	-	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total All Structures (PCMe)	-	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	

Comment

Approved Signatory

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EMSL Analytical, Inc.

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Tel/Fax: (800) 220-3675 / (856) 786-5974

<http://www.EMSL.com> / cinnasblab@EMSL.com

EMSL Order ID: 000004308

Client: Tetra Tech

Project ID: Maui Fires Lahaina

ISO 10312 Determination of Asbestos Fibers Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID:		000004308-0014		Customer Sample:		MFL-AM03-121124-AB					
Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
H5	A5	None Detected									
H5	E7	None Detected									
H5	I4	None Detected									
H6	I7	None Detected									
H6	D4	None Detected									

Abbreviations used:

XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled

XCGBLD - Crosses Countable Grid Bar Length Doubled



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<http://www.EMSL.com> / cinnaaslab@EMSL.com

EMSL Order: 04308
Customer ID: TTDC42
Customer PO: 1207085
Project ID: N/A

Attn: Chelsea Saber
 Tetra Tech
 1560 Broadway, Suite 1400
 Denver, CO, 80202

Phone: (703) 489-2674
Fax: N/A
Received Date: 12/14/2024 11:15 AM
Analysis Date: 12/24/2024
Report Date: 12/30/2024

Project: Maui Fires Lahaina

**ISO 10312 Determination of Asbestos Fibers
 Direct Transfer Transmission Electron Microscopy**

Customer Sample Number: MFL-AM07-121124-AB **Sample Description:** DL692805

EMSL Sample Number: 000004308-0015 Sample Matrix: Air
 Magnification used for fiber counting: 20,000 Volume (L): 7204.0
 Aspect ratio for fiber definition: 3:1 Area of original collection filter (mm²): 385
 Minimum Length (µm): ≥ 0.5 Grid Opening Area (mm²): 0.0130
 Chi² Test for Random Distribution on Filter: N/A (N/A) Grid Openings Analyzed: 5
 Minimum Level of analysis (chrysotile): CD Analyst: P. Harrison
 Minimum Level of analysis (amphibole): ADX

Estimated Particulate Loading on Filter %: 8
 Target Analytical Sensitivity (Structures/cc): 0.001

Analytical Sensitivity (Structures/cc): 0.0008 Limit of Detection (Structures/cc): 0.0024

TOTAL STRUCTURES (All Sizes)							
	Minimum ID Level	Structures Detected		Density (S/mm ²)	Concentration (S/cc)	95 % Confidence Interval (S/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile	CD	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total Amphibole	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Actinolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Amosite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Anthophyllite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Crocidolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Tremolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total Asbestos Structures	CD/ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Other Minerals	-	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total All Structures	-	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	

PCM EQUIVALENT (PCMe) Fibers (>5 microns in length with >3:1 Aspect Ratio)							
	Minimum ID Level	Fibers Detected		Density (F/mm ²)	Concentration (F/cc)	95 % Confidence Interval (F/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile (PCMe)	CD	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total Amphibole (PCMe)	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Actinolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Amosite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Anthophyllite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Crocidolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Tremolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total Asbestos Structures (PCMe)	CD/ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Other Minerals	-	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total All Structures (PCMe)	-	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	

Comment

Approved Signatory

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EMSL Analytical, Inc.

200 Route 130 North Cinnaminson, NJ 08077

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<http://www.EMSL.com> / cinnaslab@EMSL.com

EMSL Order ID: 000004308

Client: Tetra Tech

Project ID: Maui Fires Lahaina

ISO 10312 Determination of Asbestos Fibers Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 000004308-0015		Customer Sample: MFL-AM07-121124-AB									
Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
I2	I4	None Detected									
I2	F2	None Detected									
I2	D5	None Detected									
I3	B4	None Detected									
I3	J9	None Detected									

Abbreviations used:

XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled

XCGBLD - Crosses Countable Grid Bar Length Doubled



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EMSL Order: 04308
Customer ID: TTDC42
Customer PO: 1207085
Project ID: N/A

Attn: Chelsea Saber
 Tetra Tech
 1560 Broadway, Suite 1400
 Denver, CO, 80202

Phone: (703) 489-2674
Fax: N/A
Received Date: 12/14/2024 11:15 AM
Analysis Date: 12/24/2024
Report Date: 12/30/2024

Project: Maui Fires Lahaina

**ISO 10312 Determination of Asbestos Fibers
 Direct Transfer Transmission Electron Microscopy**

Customer Sample Number: MFL-FB01-121124-AB **Sample Description:** DL692795

EMSL Sample Number: 000004308-0016 Sample Matrix: Air
 Magnification used for fiber counting: 20,000 Volume (L): 0.0
 Aspect ratio for fiber definition: 3:1 Area of original collection filter (mm²): 385
 Minimum Length (µm): ≥ 0.5 Grid Opening Area (mm²): 0.0130
 Chi² Test for Random Distribution on Filter: N/A (N/A) Grid Openings Analyzed: 10
 Minimum Level of analysis (chrysotile): CD Analyst: P. Harrison
 Minimum Level of analysis (amphibole): ADX

Estimated Particulate Loading on Filter %: 1
 Target Analytical Sensitivity (Structures/cc): 0.001

Analytical Sensitivity (Structures/cc): N/A **Limit of Detection (Structures/cc):** N/A

TOTAL STRUCTURES (All Sizes)							
	Minimum ID Level	Structures Detected		Density (S/mm ²)	Concentration (S/cc)	95 % Confidence Interval (S/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile	CD	0	0	< 23.00			
Total Amphibole	ADX	0	0	< 23.00			
Actinolite	ADX	0	0	< 23.00			
Amosite	ADX	0	0	< 23.00			
Anthophyllite	ADX	0	0	< 23.00			
Crocidolite	ADX	0	0	< 23.00			
Tremolite	ADX	0	0	< 23.00			
Total Asbestos Structures	CD/ADX	0	0	< 23.00			
Other Minerals	-	0	0	< 23.00			
Total All Structures	-	0	0	< 23.00			

PCM EQUIVALENT (PCMe) Fibers (>5 microns in length with >3:1 Aspect Ratio)							
	Minimum ID Level	Fibers Detected		Density (F/mm ²)	Concentration (F/cc)	95 % Confidence Interval (F/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile (PCMe)	CD	0	0	< 23.00			
Total Amphibole (PCMe)	ADX	0	0	< 23.00			
Actinolite	ADX	0	0	< 23.00			
Amosite	ADX	0	0	< 23.00			
Anthophyllite	ADX	0	0	< 23.00			
Crocidolite	ADX	0	0	< 23.00			
Tremolite	ADX	0	0	< 23.00			
Total Asbestos Structures (PCMe)	CD/ADX	0	0	< 23.00			
Other Minerals	-	0	0	< 23.00			
Total All Structures (PCMe)	-	0	0	< 23.00			

Comment

Approved Signatory

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<http://www.EMSL.com> / cinnaslab@EMSL.com

EMSL Order ID: 000004308

Client: Tetra Tech

Project ID: Maui Fires Lahaina

ISO 10312 Determination of Asbestos Fibers Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 000004308-0016		Customer Sample: MFL-FB01-121124-AB									
Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
I5	J8	None Detected									
I5	H10	None Detected									
I5	F7	None Detected									
I5	D9	None Detected									
I5	B7	None Detected									
I6	J9	None Detected									
I6	H10	None Detected									
I6	F7	None Detected									
I6	D10	None Detected									
I6	B8	None Detected									

Abbreviations used:

XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled

XCGBLD - Crosses Countable Grid Bar Length Doubled



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EMSL Order: 04308
Customer ID: TTDC42
Customer PO: 1207085
Project ID: N/A

Attn: Chelsea Saber
 Tetra Tech
 1560 Broadway, Suite 1400
 Denver, CO, 80202

Phone: (703) 489-2674
Fax: N/A
Received Date: 12/14/2024 11:15 AM
Analysis Date: 12/24/2024
Report Date: 12/30/2024

Project: Maui Fires Lahaina

**ISO 10312 Determination of Asbestos Fibers
 Direct Transfer Transmission Electron Microscopy**

Customer Sample Number:	Lab Blank	Sample Description: Lab Blank
EMSL Sample Number:	000004308-0017	Sample Matrix: Air
Magnification used for fiber counting:	20,000	Volume (L): 0.0
Aspect ratio for fiber definition:	3:1	Area of original collection filter (mm ²): 385
Minimum Length (µm):	≥ 0.5	Grid Opening Area (mm ²): 0.0130
Chi ² Test for Random Distribution on Filter:	N/A (N/A)	Grid Openings Analyzed: 10
Minimum Level of analysis (chrysotile):	CD	Analyst: P. Harrison
Minimum Level of analysis (amphibole):	ADX	
Estimated Particulate Loading on Filter %:	1	
Target Analytical Sensitivity (Structures/cc):	0.001	
Analytical Sensitivity (Structures/cc):	N/A	Limit of Detection (Structures/cc): N/A

TOTAL STRUCTURES (All Sizes)							
	Minimum ID Level	Structures Detected		Density (S/mm ²)	Concentration (S/cc)	95 % Confidence Interval (S/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile	CD	0	0	< 23.00			
Total Amphibole	ADX	0	0	< 23.00			
Actinolite	ADX	0	0	< 23.00			
Amosite	ADX	0	0	< 23.00			
Anthophyllite	ADX	0	0	< 23.00			
Crocidolite	ADX	0	0	< 23.00			
Tremolite	ADX	0	0	< 23.00			
Total Asbestos Structures	CD/ADX	0	0	< 23.00			
Other Minerals	-	0	0	< 23.00			
Total All Structures	-	0	0	< 23.00			

PCM EQUIVALENT (PCMe) Fibers (>5 microns in length with >3:1 Aspect Ratio)							
	Minimum ID Level	Fibers Detected		Density (F/mm ²)	Concentration (F/cc)	95 % Confidence Interval (F/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile (PCMe)	CD	0	0	< 23.00			
Total Amphibole (PCMe)	ADX	0	0	< 23.00			
Actinolite	ADX	0	0	< 23.00			
Amosite	ADX	0	0	< 23.00			
Anthophyllite	ADX	0	0	< 23.00			
Crocidolite	ADX	0	0	< 23.00			
Tremolite	ADX	0	0	< 23.00			
Total Asbestos Structures (PCMe)	CD/ADX	0	0	< 23.00			
Other Minerals	-	0	0	< 23.00			
Total All Structures (PCMe)	-	0	0	< 23.00			

Comment

Approved Signatory

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http://www.EMSL.com / cinnaslab@EMSL.com

EMSL Order ID: 000004308

Client: Tetra Tech

Project ID: Maui Fires Lahaina

ISO 10312 Determination of Asbestos Fibers Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID:		000004308-0017		Customer Sample:		Lab Blank					
Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
A1	A8	None Detected									
A1	C6	None Detected									
A1	E9	None Detected									
A1	G10	None Detected									
A1	I8	None Detected									
A2	J1	None Detected									
A2	H4	None Detected									
A2	F3	None Detected									
A2	D5	None Detected									
A2	B3	None Detected									

Abbreviations used:

XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled

XCGBLD - Crosses Countable Grid Bar Length Doubled



Asbestos Chain of Custody (Air, Bulk, Soil)

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

EMSL Order Number / Lab Use Only

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

PHONE: (800) 220-3675
EMAIL: CinnAslab@EMSL.com

RECEIVED
EMSL
CINNAMINSON, NJ
24 DEC 14 AM 11:14

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

Customer Information	Customer ID:	Billing ID:
	Company Name: Tetra Tech	Company Name:
	Contact Name: Chelsea Saber	Billing Contact:
	Street Address: 1560 Broadway Ave STE 1400	Street Address:
	City, State, Zip: Denver CO 80202 Country: USA	City, State, Zip: Country:
Phone: (703) 489-2674	Phone:	
Email(s) for Report: chelsea.saber@tetra.tech	Email(s) for Invoice:	

Project Name/No: Maui Fires Lahaina		Purchase Order: 1207085
EMSL LIMS Project ID: (If applicable, EMSL will provide)	US State where samples collected: HI	State of Connecticut (CT) must select project location: <input type="checkbox"/> Commercial (Taxable) <input type="checkbox"/> Residential (Non-Taxable)
Sampled By Name: Shaina Epstein	Sampled By Signature: <i>[Signature]</i>	No. of Samples in Shipment: 16

Turn-Around-Time (TAT)

3 Hour 4-4.5 Hour (AHERA ONLY) 6 Hour 24 Hour 32 Hour 48 Hour 72 Hour 96 Hour 1 Week 2 Week

TEM Air 3-6 Hour, please call ahead to schedule. 32 Hour TAT available for select tests only; samples must be submitted by 11:30 am.

<p>PCM Air</p> <input type="checkbox"/> NIOSH 7400 <input type="checkbox"/> NIOSH 7400 w/ 8hr. TWA <p>PLM - Bulk (reporting limit)</p> <input type="checkbox"/> PLM EPA 600/R-93/116 (<1%) <input type="checkbox"/> PLM EPA NOB (<1%) <input type="checkbox"/> POINT COUNT <input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1,000 (<0.1%) POINT COUNT w/ GRAVIMETRIC <input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1,000 (<0.1%) <input type="checkbox"/> NIOSH 9002 (<1%) <input type="checkbox"/> NYS 198.1 (Friable - NY) <input type="checkbox"/> NYS 198.6 NOB (Non-Friable - NY) <input type="checkbox"/> NYS 198.8 (Vermiculite SM-V)	<p>TEM - Air</p> <input type="checkbox"/> AHERA 40 CFR, Part 763 <input type="checkbox"/> NIOSH 7402 <input type="checkbox"/> EPA Level II <input checked="" type="checkbox"/> ISO 10312* <p>TEM - Bulk</p> <input type="checkbox"/> TEM EPA NOB <input type="checkbox"/> NYS NOB 198.4 (Non-Friable-NY) <input type="checkbox"/> TEM EPA 600/R-93/116 w Milling Prep (0.1%) <p>Other Test (please specify)</p>	<p>TEM - Settled Dust</p> <input type="checkbox"/> Microvac - ASTM D5755 <input type="checkbox"/> Wipe - ASTM D6480 <input type="checkbox"/> Qualitative via Filtration Prep <input type="checkbox"/> Qualitative via Drop Mount Prep <p>Soil - Rock - Vermiculite (reporting limit)*</p> <input type="checkbox"/> PLM EPA 600/R-93/116 with milling prep (<0.25%) <input type="checkbox"/> PLM EPA 600/R-93/116 with milling prep (<0.1%) <input type="checkbox"/> TEM EPA 600/R-93/116 with milling prep (<0.1%) <input type="checkbox"/> TEM Qualitative via Filtration Prep <input type="checkbox"/> TEM Qualitative via Drop Mount Prep
--	---	--

*Please call with your project-specific requirements.

Positive Stop - Clearly Identified Homogeneous Areas (HA) Filter Pore Size (Air Samples) 0.8um 0.45um

Sample Number	Sample Location / Description	Volume, Area or Homogeneous Area	Date / Time Sampled (Air Monitoring Only)
1	MFL-AM05-120924-AB DL698538	7,158.388	12/09/24 1057
2	MFL-AM02-120924-AB DL692798	6,947.294	12/09/24 1113
3	MFL-AM03-120924-AB DL692789	7,182.978	12/09/24 1253
4	MFL-AM07-120924-AB DL692801	7,193.875	12/09/24 1310
5	MFL-FB01-120924-AB DL692812	0	12/09/24 1200
6	MFL-LB01-120924-AB DL692793	0	12/09/24 1200
7	MFL-AM05-121024-AB DL692791	7,201.648	12/10/24 1058
8	MFL-AM02-121024-AB DL692782	7,054.827	12/10/24 1120

Special Instructions and/or Regulatory Requirements (Sample Specifications, Processing Methods, Limits of Detection, etc.)

All samples received acceptable for analysis.

Method of Shipment: Fedex	Sample Condition Upon Receipt:
Relinquished by: Shaina Epstein Date/Time: 12/12/24 1100	Received by: <i>[Signature]</i> Date/Time: 12/14/24 11:15pm

Controlled Document - COC-05 Asbestos R16 10/28/2021 AGREE TO ELECTRONIC SIGNATURE (By checking, I consent to signing this Chain of Custody document by electronic signature.)

EMSL Analytical, Inc.'s Laboratory Terms and Conditions are incorporated into this Chain of Custody by reference in their entirety. Submission of samples to EMSL Analytical, Inc. constitutes acceptance and acknowledgment of all terms and conditions by Customer.

Stage 1 Data Verification Checklist – Asbestos
HDOH CAB – Ambient Community Air Sampling – Lahaina
Task Order No. 23141

Reviewed by:

Kierra Johnson 12/30/2024 and Shanna Vasser 01/03/2025

Laboratory: EMSL Analytical, Inc. – North Cinnaminson, NJ

Collection date(s): 12/09/2024 – 12/11/2024

Report No: 04-308

- √ 1. Chain of custody (CoC) documentation is present.
- √ 2. Sample receipt condition information is present and acceptable.
- √ 3. Laboratory conducting the analysis is identified.
- √ 4. All samples submitted to the laboratory are accounted for.
- √ 5. Requested analytical methods were performed.
- √ 6. Analysis dates are provided.
- √ 7. Analyte results are provided.
- NA 8. Result qualifiers and definitions are provided.
- √ 9. Result units are reported.
- √ 10. Requested reporting limits are present.
- NA 11. Method detection limits are present.
- √ 12. Sample collection date and time are present.
- √ 13. No detections in field QC blanks (lot/media blanks, field blanks, etc.).

Discrepancies: None.

Notes: None.



Eastern Research Group
601 Keystone Park Drive
Suite 700
Morrisville, NC 27560

December 26, 2024

Ms. Chelsea Saber
Tetra Tech, Inc.
1777 Sentry Pkwy, Bldg 12
Blue Bell, PA 19422
Project Name: Lahaina fires

Dear Ms. Chelsea Saber,

This report contains the analytical results for the sample(s) received under chain(s) of custody by Eastern Research Group on 12/16/24 10:25.

Values below the MDL for QC results in this report are recorded as ND, however the actual values are reported in the accompanying Excel report with a "U" flag (Under the detection limit). The actual values are reported in AQS.

This test is accredited under the 2016 TNI Standard for Environmental Laboratories (FL DOH Certification # E87673). All analyses were performed as described in the US EPA-approved QAPP, under the contract for National Hazardous Air Pollutant Support (US EPA Contract No. 68HERH22D0002). This cover page is an integral part of this report, and any exceptions or comments are noted on the last page.

Release of the data contained in this data package and in the data submitted in the electronic data deliverable, has been authorized by the Program Manager, or the Program Manager's designee as verified by the following signature.

The issuance of the final Certificate of Analysis takes precedence over any previous Report. If you have any questions, please contact me at 919-468-7924.

Sincerely,

Julie Swift
Program Manager
julie.swift@erg.com

The information contained in this report and its attachment(s) are intended only for the use of the individual to whom it is addressed and may contain information that is privileged, confidential, or exempt from disclosure. If the reader of this message is not the intended recipient, you are hereby notified that any dissemination, distribution, or copying of this report is strictly prohibited. If you have received this report in error, please notify julie.swift@erg.com and delete the report without retaining any copies.



CERTIFICATE OF ANALYSIS

Tetra Tech, Inc.
1777 Sentry Pkwy, Bldg 12
Blue Bell, PA 19422

ATTN: Ms. Chelsea Saber

PHONE: (703) 885-5495 **FAX:**

FILE #: 4205.00.003.001

REPORTED: 12/26/24 10:37

SUBMITTED: 12/16/24

AQS SITE CODE:

SITE CODE: Lahaina fires

ANALYTICAL REPORT FOR SAMPLES

<u>SampleName</u>	<u>LabNumber</u>	<u>Matrix</u>	<u>Sampled</u>	<u>Received</u>
MFL-AM05-120524-HM	4121638-01	Air	12/05/24 23:59	12/16/24 10:25
MFL-AM02-120524-HM	4121638-02	Air	12/05/24 23:59	12/16/24 10:25
MFL-AM03-120524-HM	4121638-03	Air	12/05/24 23:59	12/16/24 10:25
MFL-AM07-120524-HM	4121638-04	Air	12/05/24 23:59	12/16/24 10:25
MFL-AM05-120624-HM	4121638-05	Air	12/06/24 23:59	12/16/24 10:25
MFL-AM02-120624-HM	4121638-06	Air	12/06/24 23:59	12/16/24 10:25
MFL-AM03-120624-HM	4121638-07	Air	12/06/24 23:59	12/16/24 10:25
MFL-AM07-120624-HM	4121638-08	Air	12/06/24 23:59	12/16/24 10:25
MFL-FB01-120624-HM	4121638-09	Air	12/06/24 00:00	12/16/24 10:25
MFL-AM05-120724-HM	4121638-10	Air	12/07/24 23:59	12/16/24 10:25
MFL-AM02-120724-HM	4121638-11	Air	12/07/24 23:59	12/16/24 10:25
MFL-AM03-120724-HM	4121638-12	Air	12/07/24 23:59	12/16/24 10:25
MFL-AM07-120724-HM	4121638-13	Air	12/07/24 23:59	12/16/24 10:25
MFL-AM05-120824-HM	4121638-14	Air	12/08/24 23:59	12/16/24 10:25
MFL-AM02-120824-HM	4121638-15	Air	12/08/24 23:59	12/16/24 10:25
MFL-AM03-120824-HM	4121638-16	Air	12/08/24 23:59	12/16/24 10:25
MFL-AM07-120824-HM	4121638-17	Air	12/08/24 23:59	12/16/24 10:25
MFL-FB01-120824-HM	4121638-18	Air	12/08/24 00:00	12/16/24 10:25
MFL-AM05-120924-HM	4121638-19	Air	12/09/24 23:59	12/16/24 10:25
MFL-AM02-120924-HM	4121638-20	Air	12/09/24 23:59	12/16/24 10:25
MFL-AM03-120924-HM	4121638-21	Air	12/09/24 23:59	12/16/24 10:25



CERTIFICATE OF ANALYSIS

Tetra Tech, Inc.
1777 Sentry Pkwy, Bldg 12
Blue Bell, PA 19422
ATTN: Ms. Chelsea Saber

FILE #: 4205.00.003.001
REPORTED: 12/26/24 10:37
SUBMITTED: 12/16/24
AQS SITE CODE:

PHONE: (703) 885-5495	FAX:			SITE CODE:	Lahaina fires
MFL-AM07-120924-HM	4121638-22	Air	12/09/24 23:59	12/16/24 10:25	
MFL-LB01-120924-HM	4121638-23	Air	12/09/24 00:00	12/16/24 10:25	
MFL-AM05-121024-HM	4121638-24	Air	12/10/24 23:59	12/16/24 10:25	
MFL-AM02-121024-HM	4121638-25	Air	12/10/24 23:59	12/16/24 10:25	
MFL-AM03-121024-HM	4121638-26	Air	12/10/24 23:59	12/16/24 10:25	
MFL-AM07-121024-HM	4121638-27	Air	12/10/24 23:59	12/16/24 10:25	
MFL-FB01-121024-HM	4121638-28	Air	12/10/24 00:00	12/16/24 10:25	
MFL-AM05-121124-HM	4121638-29	Air	12/11/24 23:59	12/16/24 10:25	
MFL-AM02-121124-HM	4121638-30	Air	12/11/24 23:59	12/16/24 10:25	
MFL-AM03-121124-HM	4121638-31	Air	12/11/24 23:59	12/16/24 10:25	
MFL-AM07-121124-HM	4121638-32	Air	12/11/24 23:59	12/16/24 10:25	



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FILE #: 4205.00.003.001
 REPORTED: 12/26/24 10:37
 SUBMITTED: 12/16/24
 AQS SITE CODE:
 SITE CODE: Lahaina fires

Description: MFL-AM05-120524-HM **Lab ID:** 4121638-01 **Sampled:** 12/05/24 23:59
Matrix: Air **Sample Volume:** 1933.225 m³ **Received:** 12/16/24 10:25
Filter ID: **Analysis Date:** 12/18/24 00:11
Comments: Q9552305 - Received in good condition.

Inorganics by Compendium Method IO-3.5

<u>Analyte</u>	<u>CAS Number</u>	<u>Results</u>		<u>MDL</u>	
		<u>ng/m³ Air</u>	<u>Flag</u>	<u>ng/m³ Air</u>	
Antimony	7440-36-0	0.206	SL	0.0325	
Arsenic	7440-38-2	0.417		0.00789	
Barium	7440-39-3	7.59	QB-01	0.901	
Beryllium	7440-41-7	0.0250		0.00269	
Cadmium	7440-43-9	0.0403	U	0.0624	
Chromium	7440-47-3	3.95		1.86	
Cobalt	7440-48-4	0.805		0.0367	
Copper	7440-50-8	29.6		2.21	
Lead	7439-92-1	0.826		0.180	
Manganese	7439-96-5	26.8		1.59	
Molybdenum	7439-98-7	1.56		0.302	
Nickel	7440-02-0	2.04		0.549	
Selenium	7782-49-2	0.220		0.00754	
Thallium	7440-28-0	0.00257		4.96E-4	
Vanadium	7440-62-2	2.71		0.0445	
Zinc	7440-66-6	20.2	U	64.6	



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FILE #: 4205.00.003.001
 REPORTED: 12/26/24 10:37
 SUBMITTED: 12/16/24
 AQS SITE CODE:
 SITE CODE: Lahaina fires

Description: MFL-AM02-120524-HM **Lab ID:** 4121638-02 **Sampled:** 12/05/24 23:59
Matrix: Air **Sample Volume:** 2143.229 m³ **Received:** 12/16/24 10:25
Filter ID: **Analysis Date:** 12/17/24 17:45
Comments: Q9552304 MS/MSD - Received in good condition.

Inorganics by Compendium Method IO-3.5

<u>Analyte</u>	<u>CAS Number</u>	<u>Results</u>		<u>MDL</u>	
		<u>ng/m³ Air</u>	<u>Flag</u>	<u>ng/m³ Air</u>	
Antimony	7440-36-0	0.234	SL	0.0293	
Arsenic	7440-38-2	0.320		0.00711	
Barium	7440-39-3	7.22	QB-01	0.812	
Beryllium	7440-41-7	0.0193		0.00243	
Cadmium	7440-43-9	0.0147	U	0.0563	
Chromium	7440-47-3	3.94		1.68	
Cobalt	7440-48-4	0.564		0.0331	
Copper	7440-50-8	56.0	QM-07	2.00	
Lead	7439-92-1	1.17		0.162	
Manganese	7439-96-5	18.2		1.43	
Molybdenum	7439-98-7	2.85	QM-07	0.273	
Nickel	7440-02-0	1.85		0.495	
Selenium	7782-49-2	0.213	SRD-01	0.00680	
Thallium	7440-28-0	0.00180		4.47E-4	
Vanadium	7440-62-2	2.05		0.0402	
Zinc	7440-66-6	22.6	U	58.3	



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 SUBMITTED: 12/16/24
 AQS SITE CODE:
 SITE CODE: Lahaina fires

Description: MFL-AM03-120524-HM **Lab ID:** 4121638-03 **Sampled:** 12/05/24 23:59
Matrix: Air **Sample Volume:** 1945.851 m³ **Received:** 12/16/24 10:25
Filter ID: **Analysis Date:** 12/18/24 00:27
Comments: Q9552300 - Received in good condition.

Inorganics by Compendium Method IO-3.5

<u>Analyte</u>	<u>CAS Number</u>	<u>Results</u>		<u>MDL</u>	
		<u>ng/m³ Air</u>	<u>Flag</u>	<u>ng/m³ Air</u>	
Antimony	7440-36-0	0.0714	SL	0.0323	
Arsenic	7440-38-2	0.140		0.00783	
Barium	7440-39-3	2.80	QB-01	0.895	
Beryllium	7440-41-7	0.0205		0.00268	
Cadmium	7440-43-9	0.0109	U	0.0620	
Chromium	7440-47-3	3.08		1.85	
Cobalt	7440-48-4	0.521		0.0365	
Copper	7440-50-8	42.8		2.20	
Lead	7439-92-1	0.247		0.179	
Manganese	7439-96-5	12.8		1.58	
Molybdenum	7439-98-7	2.82		0.300	
Nickel	7440-02-0	1.66		0.545	
Selenium	7782-49-2	0.185		0.00749	
Thallium	7440-28-0	0.00138		4.92E-4	
Vanadium	7440-62-2	1.39		0.0442	
Zinc	7440-66-6	7.63	U	64.2	



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 REPORTED: 12/26/24 10:37
 SUBMITTED: 12/16/24
 AQS SITE CODE:
 SITE CODE: Lahaina fires

Description: MFL-AM07-120524-HM **Lab ID:** 4121638-04 **Sampled:** 12/05/24 23:59
Matrix: Air **Sample Volume:** 1587.532 m³ **Received:** 12/16/24 10:25
Filter ID: **Analysis Date:** 12/18/24 00:41
Comments: Q9552299 - Received in good condition.

Inorganics by Compendium Method IO-3.5

<u>Analyte</u>	<u>CAS Number</u>	<u>Results</u>		<u>MDL</u>	
		<u>ng/m³ Air</u>	<u>Flag</u>	<u>ng/m³ Air</u>	
Antimony	7440-36-0	0.102	SL	0.0396	
Arsenic	7440-38-2	0.513		0.00960	
Barium	7440-39-3	6.74	QB-01	1.10	
Beryllium	7440-41-7	0.0400		0.00328	
Cadmium	7440-43-9	0.0225	U	0.0759	
Chromium	7440-47-3	5.15		2.26	
Cobalt	7440-48-4	1.19		0.0447	
Copper	7440-50-8	17.8		2.70	
Lead	7439-92-1	1.09		0.219	
Manganese	7439-96-5	40.3		1.94	
Molybdenum	7439-98-7	1.28		0.368	
Nickel	7440-02-0	2.70		0.668	
Selenium	7782-49-2	0.277		0.00918	
Thallium	7440-28-0	0.00246		6.04E-4	
Vanadium	7440-62-2	3.14		0.0542	
Zinc	7440-66-6	15.1	U	78.7	



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FILE #: 4205.00.003.001
 REPORTED: 12/26/24 10:37
 SUBMITTED: 12/16/24
 AQS SITE CODE:
 SITE CODE: Lahaina fires

Description: MFL-AM05-120624-HM **Lab ID:** 4121638-05 **Sampled:** 12/06/24 23:59
Matrix: Air **Sample Volume:** 1941.338 m³ **Received:** 12/16/24 10:25
Filter ID: **Analysis Date:** 12/18/24 00:56
Comments: Q9552297 - Received in good condition.

Inorganics by Compendium Method IO-3.5

<u>Analyte</u>	<u>CAS Number</u>	<u>Results</u>		<u>MDL</u>	
		<u>ng/m³ Air</u>	<u>Flag</u>	<u>ng/m³ Air</u>	
Antimony	7440-36-0	0.0879	SL	0.0323	
Arsenic	7440-38-2	0.184		0.00785	
Barium	7440-39-3	3.41	QB-01	0.897	
Beryllium	7440-41-7	0.00833		0.00268	
Cadmium	7440-43-9	0.0100	U	0.0621	
Chromium	7440-47-3	2.28		1.85	
Cobalt	7440-48-4	0.284		0.0365	
Copper	7440-50-8	46.1		2.20	
Lead	7439-92-1	0.620		0.179	
Manganese	7439-96-5	7.65		1.58	
Molybdenum	7439-98-7	2.46		0.301	
Nickel	7440-02-0	1.21		0.546	
Selenium	7782-49-2	0.201		0.00751	
Thallium	7440-28-0	0.00108		4.94E-4	
Vanadium	7440-62-2	1.60		0.0443	
Zinc	7440-66-6	13.6	U	64.4	



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FILE #: 4205.00.003.001
 REPORTED: 12/26/24 10:37
 SUBMITTED: 12/16/24
 AQS SITE CODE:
 SITE CODE: Lahaina fires

Description: MFL-AM02-120624-HM **Lab ID:** 4121638-06 **Sampled:** 12/06/24 23:59
Matrix: Air **Sample Volume:** 2135.181 m³ **Received:** 12/16/24 10:25
Filter ID: **Analysis Date:** 12/18/24 01:11
Comments: Q9552296 - Received in good condition.

Inorganics by Compendium Method IO-3.5

<u>Analyte</u>	<u>CAS Number</u>	<u>Results</u>		<u>MDL</u>	
		<u>ng/m³ Air</u>	<u>Flag</u>	<u>ng/m³ Air</u>	
Antimony	7440-36-0	0.202	SL	0.0294	
Arsenic	7440-38-2	0.617		0.00714	
Barium	7440-39-3	7.57	QB-01	0.815	
Beryllium	7440-41-7	0.0182		0.00244	
Cadmium	7440-43-9	0.0173	U	0.0565	
Chromium	7440-47-3	3.03		1.68	
Cobalt	7440-48-4	0.576		0.0332	
Copper	7440-50-8	48.5		2.00	
Lead	7439-92-1	1.06		0.163	
Manganese	7439-96-5	17.5		1.44	
Molybdenum	7439-98-7	2.31		0.274	
Nickel	7440-02-0	1.78		0.497	
Selenium	7782-49-2	0.245		0.00683	
Thallium	7440-28-0	0.00137		4.49E-4	
Vanadium	7440-62-2	2.56		0.0403	
Zinc	7440-66-6	20.9	U	58.5	



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FILE #: 4205.00.003.001
 REPORTED: 12/26/24 10:37
 SUBMITTED: 12/16/24
 AQS SITE CODE:
 SITE CODE: Lahaina fires

Description: MFL-AM03-120624-HM **Lab ID:** 4121638-07 **Sampled:** 12/06/24 23:59
Matrix: Air **Sample Volume:** 1949.109 m³ **Received:** 12/16/24 10:25
Filter ID: **Analysis Date:** 12/18/24 01:26
Comments: Q9552292 - Received in good condition.

Inorganics by Compendium Method IO-3.5

<u>Analyte</u>	<u>CAS Number</u>	<u>Results</u>		<u>MDL</u>	
		<u>ng/m³ Air</u>	<u>Flag</u>	<u>ng/m³ Air</u>	
Antimony	7440-36-0	0.0589	SL	0.0322	
Arsenic	7440-38-2	0.131		0.00782	
Barium	7440-39-3	3.86	QB-01	0.893	
Beryllium	7440-41-7	0.0252		0.00267	
Cadmium	7440-43-9	0.0107	U	0.0619	
Chromium	7440-47-3	2.82		1.84	
Cobalt	7440-48-4	0.399		0.0364	
Copper	7440-50-8	53.2		2.20	
Lead	7439-92-1	0.281		0.179	
Manganese	7439-96-5	8.87		1.58	
Molybdenum	7439-98-7	2.54		0.300	
Nickel	7440-02-0	1.50		0.544	
Selenium	7782-49-2	0.220		0.00748	
Thallium	7440-28-0	9.72E-4		4.92E-4	
Vanadium	7440-62-2	1.69		0.0442	
Zinc	7440-66-6	9.43	U	64.1	



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 SUBMITTED: 12/16/24
 AQS SITE CODE:
 SITE CODE: Lahaina fires

Description: MFL-AM07-120624-HM **Lab ID:** 4121638-08 **Sampled:** 12/06/24 23:59
Matrix: Air **Sample Volume:** 1757.71 m³ **Received:** 12/16/24 10:25
Filter ID: **Analysis Date:** 12/18/24 01:40
Comments: Q9552291 - Received in good condition.

Inorganics by Compendium Method IO-3.5

<u>Analyte</u>	<u>CAS Number</u>	<u>Results</u>		<u>MDL</u>
		<u>ng/m³ Air</u>	<u>Flag</u>	<u>ng/m³ Air</u>
Antimony	7440-36-0	0.0679	SL	0.0357
Arsenic	7440-38-2	0.480		0.00867
Barium	7440-39-3	8.02	QB-01	0.990
Beryllium	7440-41-7	0.0464		0.00296
Cadmium	7440-43-9	0.0180	U	0.0686
Chromium	7440-47-3	5.72		2.05
Cobalt	7440-48-4	1.34		0.0404
Copper	7440-50-8	23.4		2.43
Lead	7439-92-1	1.28		0.198
Manganese	7439-96-5	42.0		1.75
Molybdenum	7439-98-7	1.26		0.332
Nickel	7440-02-0	3.28		0.604
Selenium	7782-49-2	0.330		0.00829
Thallium	7440-28-0	0.00222		5.45E-4
Vanadium	7440-62-2	4.11		0.0490
Zinc	7440-66-6	13.3	U	71.1



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FILE #: 4205.00.003.001
 REPORTED: 12/26/24 10:37
 SUBMITTED: 12/16/24
 AQS SITE CODE:
 SITE CODE: Lahaina fires

Description: MFL-FB01-120624-HM **Lab ID:** 4121638-09 **Sampled:** 12/06/24 00:00
Matrix: Air **Sample Volume:** 1941.338 m³ **Received:** 12/16/24 10:25
Filter ID: **Analysis Date:** 12/18/24 01:54
Comments: Q9552286 Field Blank - Received in good condition.

Inorganics by Compendium Method IO-3.5

<u>Analyte</u>	<u>CAS Number</u>	<u>Results</u>		<u>MDL</u>	
		<u>ng/m³ Air</u>	<u>Flag</u>	<u>ng/m³ Air</u>	
Antimony	7440-36-0	0.00977	SL, U	0.0323	
Arsenic	7440-38-2	0.00496	U	0.00785	
Barium	7440-39-3	0.834	QB-01, U	0.897	
Beryllium	7440-41-7	0.00107	U	0.00268	
Cadmium	7440-43-9	0.00220	U	0.0621	
Chromium	7440-47-3	1.37	U	1.85	
Cobalt	7440-48-4	0.0269	U	0.0365	
Copper	7440-50-8	2.37	FB-01	2.20	
Lead	7439-92-1	0.0524	U	0.179	
Manganese	7439-96-5	0.303	U	1.58	
Molybdenum	7439-98-7	0.333	FB-01	0.301	
Nickel	7440-02-0	0.371	U	0.546	
Selenium	7782-49-2	0.00564	U	0.00751	
Thallium	7440-28-0	3.19E-5	U	4.94E-4	
Vanadium	7440-62-2	0.0320	U	0.0443	
Zinc	7440-66-6	3.09	U	64.4	



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FILE #: 4205.00.003.001
 REPORTED: 12/26/24 10:37
 SUBMITTED: 12/16/24
 AQS SITE CODE:
 SITE CODE: Lahaina fires

Description: MFL-AM05-120724-HM **Lab ID:** 4121638-10 **Sampled:** 12/07/24 23:59
Matrix: Air **Sample Volume:** 1907.121 m³ **Received:** 12/16/24 10:25
Filter ID: **Analysis Date:** 12/18/24 02:08
Comments: Q9552290 - Received in good condition.

Inorganics by Compendium Method IO-3.5

<u>Analyte</u>	<u>CAS Number</u>	<u>Results</u>		<u>MDL</u>
		<u>ng/m³ Air</u>	<u>Flag</u>	<u>ng/m³ Air</u>
Antimony	7440-36-0	0.0857	SL	0.0329
Arsenic	7440-38-2	0.182		0.00799
Barium	7440-39-3	3.99	QB-01	0.913
Beryllium	7440-41-7	0.00881		0.00273
Cadmium	7440-43-9	0.0122	U	0.0632
Chromium	7440-47-3	2.13		1.89
Cobalt	7440-48-4	0.265		0.0372
Copper	7440-50-8	40.2		2.24
Lead	7439-92-1	0.477		0.183
Manganese	7439-96-5	8.66		1.61
Molybdenum	7439-98-7	2.40		0.306
Nickel	7440-02-0	1.18		0.556
Selenium	7782-49-2	0.183		0.00764
Thallium	7440-28-0	8.34E-4		5.02E-4
Vanadium	7440-62-2	1.72		0.0451
Zinc	7440-66-6	10.3	U	65.5



CERTIFICATE OF ANALYSIS

Tetra Tech, Inc.
 1777 Sentry Pkwy, Bldg 12
 Blue Bell, PA 19422
 ATTN: Ms. Chelsea Saber
 PHONE: (703) 885-5495 FAX:

FILE #: 4205.00.003.001
 REPORTED: 12/26/24 10:37
 SUBMITTED: 12/16/24
 AQS SITE CODE:
 SITE CODE: Lahaina fires

Description: MFL-AM02-120724-HM **Lab ID:** 4121638-11 **Sampled:** 12/07/24 23:59
Matrix: Air **Sample Volume:** 2115.55 m³ **Received:** 12/16/24 10:25
Filter ID: **Analysis Date:** 12/18/24 03:28
Comments: Q9552289 - Received in good condition.

Inorganics by Compendium Method IO-3.5

<u>Analyte</u>	<u>CAS Number</u>	<u>Results</u>		<u>MDL</u>
		<u>ng/m³ Air</u>	<u>Flag</u>	<u>ng/m³ Air</u>
Antimony	7440-36-0	0.134	SL	0.0297
Arsenic	7440-38-2	0.210		0.00721
Barium	7440-39-3	5.00	QB-01	0.823
Beryllium	7440-41-7	0.0119		0.00246
Cadmium	7440-43-9	0.00982	U	0.0570
Chromium	7440-47-3	2.21		1.70
Cobalt	7440-48-4	0.316		0.0335
Copper	7440-50-8	36.3		2.02
Lead	7439-92-1	0.746		0.165
Manganese	7439-96-5	10.7		1.45
Molybdenum	7439-98-7	1.90		0.276
Nickel	7440-02-0	1.21		0.501
Selenium	7782-49-2	0.184		0.00689
Thallium	7440-28-0	9.06E-4		4.53E-4
Vanadium	7440-62-2	1.86		0.0407
Zinc	7440-66-6	16.2	U	59.1



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Description: MFL-AM03-120724-HM **Lab ID:** 4121638-12 **Sampled:** 12/07/24 23:59
Matrix: Air **Sample Volume:** 1935.262 m³ **Received:** 12/16/24 10:25
Filter ID: **Analysis Date:** 12/18/24 03:44
Comments: Q9552287 - Received in good condition.

Inorganics by Compendium Method IO-3.5

<u>Analyte</u>	<u>CAS Number</u>	<u>Results</u>		<u>MDL</u>
		<u>ng/m³ Air</u>	<u>Flag</u>	<u>ng/m³ Air</u>
Antimony	7440-36-0	0.0499	SL	0.0325
Arsenic	7440-38-2	0.238		0.00788
Barium	7440-39-3	2.96	QB-01	0.900
Beryllium	7440-41-7	0.0172		0.00269
Cadmium	7440-43-9	0.00962	U	0.0623
Chromium	7440-47-3	2.40		1.86
Cobalt	7440-48-4	0.309		0.0367
Copper	7440-50-8	60.4		2.21
Lead	7439-92-1	0.275		0.180
Manganese	7439-96-5	9.11		1.59
Molybdenum	7439-98-7	3.06		0.302
Nickel	7440-02-0	1.19		0.548
Selenium	7782-49-2	0.172		0.00753
Thallium	7440-28-0	8.36E-4		4.95E-4
Vanadium	7440-62-2	1.52		0.0445
Zinc	7440-66-6	6.64	U	64.6



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 SUBMITTED: 12/16/24
 AQS SITE CODE:
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Description: MFL-AM07-120724-HM **Lab ID:** 4121638-13 **Sampled:** 12/07/24 23:59
Matrix: Air **Sample Volume:** 1813.937 m³ **Received:** 12/16/24 10:25
Filter ID: **Analysis Date:** 12/18/24 03:59
Comments: Q9552285 - Received in good condition.

Inorganics by Compendium Method IO-3.5

<u>Analyte</u>	<u>CAS Number</u>	<u>Results</u>		<u>MDL</u>
		<u>ng/m³ Air</u>	<u>Flag</u>	<u>ng/m³ Air</u>
Antimony	7440-36-0	0.0705	SL	0.0346
Arsenic	7440-38-2	0.472		0.00840
Barium	7440-39-3	6.50	QB-01	0.960
Beryllium	7440-41-7	0.0376		0.00287
Cadmium	7440-43-9	0.0189	U	0.0665
Chromium	7440-47-3	5.37		1.98
Cobalt	7440-48-4	0.917		0.0391
Copper	7440-50-8	23.6		2.36
Lead	7439-92-1	0.794		0.192
Manganese	7439-96-5	33.4		1.70
Molybdenum	7439-98-7	1.40		0.322
Nickel	7440-02-0	2.39		0.585
Selenium	7782-49-2	0.250		0.00804
Thallium	7440-28-0	0.00182		5.28E-4
Vanadium	7440-62-2	3.27		0.0474
Zinc	7440-66-6	12.4	U	68.9



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 AQS SITE CODE:
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Description: MFL-AM05-120824-HM **Lab ID:** 4121638-14 **Sampled:** 12/08/24 23:59
Matrix: Air **Sample Volume:** 1966.391 m³ **Received:** 12/16/24 10:25
Filter ID: **Analysis Date:** 12/18/24 04:13
Comments: Q9552284 - Received in good condition.

Inorganics by Compendium Method IO-3.5

<u>Analyte</u>	<u>CAS Number</u>	<u>Results</u>		<u>MDL</u>
		<u>ng/m³ Air</u>	<u>Flag</u>	<u>ng/m³ Air</u>
Antimony	7440-36-0	0.0548	SL	0.0319
Arsenic	7440-38-2	0.162		0.00775
Barium	7440-39-3	2.75	QB-01	0.885
Beryllium	7440-41-7	0.00595		0.00265
Cadmium	7440-43-9	0.0342	U	0.0613
Chromium	7440-47-3	2.72		1.83
Cobalt	7440-48-4	0.197		0.0361
Copper	7440-50-8	39.3		2.18
Lead	7439-92-1	0.387		0.177
Manganese	7439-96-5	5.93		1.56
Molybdenum	7439-98-7	2.27		0.297
Nickel	7440-02-0	1.41		0.539
Selenium	7782-49-2	0.148		0.00741
Thallium	7440-28-0	5.92E-4		4.87E-4
Vanadium	7440-62-2	0.822		0.0438
Zinc	7440-66-6	8.49	U	63.5



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 SUBMITTED: 12/16/24
 AQS SITE CODE:
 SITE CODE: Lahaina fires

Description: MFL-AM02-120824-HM **Lab ID:** 4121638-15 **Sampled:** 12/08/24 23:59
Matrix: Air **Sample Volume:** 2081.146 m³ **Received:** 12/16/24 10:25
Filter ID: **Analysis Date:** 12/18/24 04:27
Comments: Q9552282 - Received in good condition.

Inorganics by Compendium Method IO-3.5

<u>Analyte</u>	<u>CAS Number</u>	<u>Results</u>		<u>MDL</u>
		<u>ng/m³ Air</u>	<u>Flag</u>	<u>ng/m³ Air</u>
Antimony	7440-36-0	0.150	SL	0.0302
Arsenic	7440-38-2	0.281		0.00733
Barium	7440-39-3	6.04	QB-01	0.837
Beryllium	7440-41-7	0.0143		0.00250
Cadmium	7440-43-9	0.0125	U	0.0579
Chromium	7440-47-3	2.49		1.73
Cobalt	7440-48-4	0.417		0.0341
Copper	7440-50-8	41.1		2.06
Lead	7439-92-1	0.864		0.167
Manganese	7439-96-5	14.6		1.48
Molybdenum	7439-98-7	1.88		0.281
Nickel	7440-02-0	1.31		0.510
Selenium	7782-49-2	0.178		0.00700
Thallium	7440-28-0	8.80E-4		4.60E-4
Vanadium	7440-62-2	1.54		0.0414
Zinc	7440-66-6	14.6	U	60.0



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 SUBMITTED: 12/16/24
 AQS SITE CODE:
 SITE CODE: Lahaina fires

Description: MFL-AM03-120824-HM **Lab ID:** 4121638-16 **Sampled:** 12/08/24 23:59
Matrix: Air **Sample Volume:** 1906.629 m³ **Received:** 12/16/24 10:25
Filter ID: **Analysis Date:** 12/18/24 04:41
Comments: Q9552280 - Received in good condition.

Inorganics by Compendium Method IO-3.5

<u>Analyte</u>	<u>CAS Number</u>	<u>Results</u>		<u>MDL</u>	
		<u>ng/m³ Air</u>	<u>Flag</u>	<u>ng/m³ Air</u>	
Antimony	7440-36-0	0.0317	SL, U	0.0329	
Arsenic	7440-38-2	0.127		0.00800	
Barium	7440-39-3	2.32	QB-01	0.913	
Beryllium	7440-41-7	0.0120		0.00273	
Cadmium	7440-43-9	0.00627	U	0.0632	
Chromium	7440-47-3	2.19		1.89	
Cobalt	7440-48-4	0.229		0.0372	
Copper	7440-50-8	68.9		2.24	
Lead	7439-92-1	0.196		0.183	
Manganese	7439-96-5	5.94		1.61	
Molybdenum	7439-98-7	3.27		0.306	
Nickel	7440-02-0	0.921		0.556	
Selenium	7782-49-2	0.159		0.00765	
Thallium	7440-28-0	5.78E-4		5.03E-4	
Vanadium	7440-62-2	0.834		0.0451	
Zinc	7440-66-6	8.96	U	65.5	



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FILE #: 4205.00.003.001
 REPORTED: 12/26/24 10:37
 SUBMITTED: 12/16/24
 AQS SITE CODE:
 SITE CODE: Lahaina fires

Description: MFL-AM07-120824-HM **Lab ID:** 4121638-17 **Sampled:** 12/08/24 23:59
Matrix: Air **Sample Volume:** 1596.433 m³ **Received:** 12/16/24 10:25
Filter ID: **Analysis Date:** 12/18/24 04:55
Comments: Q9552277 - Received in good condition.

Inorganics by Compendium Method IO-3.5

<u>Analyte</u>	<u>CAS Number</u>	<u>Results</u>		<u>MDL</u>
		<u>ng/m³ Air</u>	<u>Flag</u>	<u>ng/m³ Air</u>
Antimony	7440-36-0	0.0676	SL	0.0393
Arsenic	7440-38-2	0.412		0.00955
Barium	7440-39-3	5.58	QB-01	1.09
Beryllium	7440-41-7	0.0331		0.00326
Cadmium	7440-43-9	0.0223	U	0.0755
Chromium	7440-47-3	4.61		2.25
Cobalt	7440-48-4	0.861		0.0444
Copper	7440-50-8	19.8		2.68
Lead	7439-92-1	0.828		0.218
Manganese	7439-96-5	28.3		1.93
Molybdenum	7439-98-7	1.26		0.366
Nickel	7440-02-0	2.26		0.664
Selenium	7782-49-2	0.243		0.00913
Thallium	7440-28-0	0.00142		6.00E-4
Vanadium	7440-62-2	2.47		0.0539
Zinc	7440-66-6	10.5	U	78.3



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FILE #: 4205.00.003.001
 REPORTED: 12/26/24 10:37
 SUBMITTED: 12/16/24
 AQS SITE CODE:
 SITE CODE: Lahaina fires

Description: MFL-FB01-120824-HM **Lab ID:** 4121638-18 **Sampled:** 12/08/24 00:00
Matrix: Air **Sample Volume:** 1966.391 m³ **Received:** 12/16/24 10:25
Filter ID: **Analysis Date:** 12/18/24 05:10
Comments: Q9552276 Field Blank - Received in good condition.

Inorganics by Compendium Method IO-3.5

<u>Analyte</u>	<u>CAS Number</u>	<u>Results</u>		<u>MDL</u>	
		<u>ng/m³ Air</u>	<u>Flag</u>	<u>ng/m³ Air</u>	
Antimony	7440-36-0	0.0112	SL, U	0.0319	
Arsenic	7440-38-2	0.00690	U	0.00775	
Barium	7440-39-3	0.802	QB-01, U	0.885	
Beryllium	7440-41-7	7.00E-4	U	0.00265	
Cadmium	7440-43-9	0.00215	U	0.0613	
Chromium	7440-47-3	1.65	U	1.83	
Cobalt	7440-48-4	0.0272	U	0.0361	
Copper	7440-50-8	0.420	U	2.18	
Lead	7439-92-1	0.0426	U	0.177	
Manganese	7439-96-5	0.247	U	1.56	
Molybdenum	7439-98-7	0.252	U	0.297	
Nickel	7440-02-0	0.523	U	0.539	
Selenium	7782-49-2	0.00477	U	0.00741	
Thallium	7440-28-0	1.72E-5	U	4.87E-4	
Vanadium	7440-62-2	0.0320	U	0.0438	
Zinc	7440-66-6	2.68	U	63.5	



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 AQS SITE CODE:
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Description: MFL-AM05-120924-HM **Lab ID:** 4121638-19 **Sampled:** 12/09/24 23:59
Matrix: Air **Sample Volume:** 1997.529 m³ **Received:** 12/16/24 10:25
Filter ID: **Analysis Date:** 12/18/24 05:24
Comments: Q8504491 - Received in good condition.

Inorganics by Compendium Method IO-3.5

<u>Analyte</u>	<u>CAS Number</u>	<u>Results</u>		<u>MDL</u>
		<u>ng/m³ Air</u>	<u>Flag</u>	<u>ng/m³ Air</u>
Antimony	7440-36-0	0.0919	SL	0.0314
Arsenic	7440-38-2	0.152		0.00763
Barium	7440-39-3	3.58	QB-01	0.872
Beryllium	7440-41-7	0.00762		0.00261
Cadmium	7440-43-9	0.0101	U	0.0604
Chromium	7440-47-3	2.23		1.80
Cobalt	7440-48-4	0.254		0.0355
Copper	7440-50-8	34.4		2.14
Lead	7439-92-1	0.350		0.174
Manganese	7439-96-5	7.25		1.54
Molybdenum	7439-98-7	2.12		0.292
Nickel	7440-02-0	1.13		0.531
Selenium	7782-49-2	0.235		0.00730
Thallium	7440-28-0	0.00118		4.80E-4
Vanadium	7440-62-2	1.09		0.0431
Zinc	7440-66-6	12.3	U	62.6



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Description: MFL-AM02-120924-HM **Lab ID:** 4121638-20 **Sampled:** 12/09/24 23:59
Matrix: Air **Sample Volume:** 2012.586 m³ **Received:** 12/16/24 10:25
Filter ID: **Analysis Date:** 12/18/24 05:38
Comments: Q8504490 - Received in good condition.

Inorganics by Compendium Method IO-3.5

<u>Analyte</u>	<u>CAS Number</u>	<u>Results</u>		<u>MDL</u>
		<u>ng/m³ Air</u>	<u>Flag</u>	<u>ng/m³ Air</u>
Antimony	7440-36-0	0.214	SL	0.0312
Arsenic	7440-38-2	0.306		0.00757
Barium	7440-39-3	7.50	QB-01	0.865
Beryllium	7440-41-7	0.0171		0.00259
Cadmium	7440-43-9	0.0115	U	0.0599
Chromium	7440-47-3	3.35		1.79
Cobalt	7440-48-4	0.586		0.0352
Copper	7440-50-8	45.3		2.13
Lead	7439-92-1	1.03		0.173
Manganese	7439-96-5	17.3		1.53
Molybdenum	7439-98-7	2.16		0.290
Nickel	7440-02-0	1.85		0.527
Selenium	7782-49-2	0.285		0.00724
Thallium	7440-28-0	0.00159		4.76E-4
Vanadium	7440-62-2	2.22		0.0428
Zinc	7440-66-6	18.2	U	62.1



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 SUBMITTED: 12/16/24
 AQS SITE CODE:
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Description: MFL-AM03-120924-HM **Lab ID:** 4121638-21 **Sampled:** 12/09/24 23:59
Matrix: Air **Sample Volume:** 1920.445 m³ **Received:** 12/16/24 10:25
Filter ID: **Analysis Date:** 12/17/24 21:27
Comments: Q8504489 MS/MSD - Received in good condition.

Inorganics by Compendium Method IO-3.5

<u>Analyte</u>	<u>CAS Number</u>	<u>Results</u>		<u>MDL</u>	
		<u>ng/m³ Air</u>	<u>Flag</u>	<u>ng/m³ Air</u>	
Antimony	7440-36-0	0.0572	SL	0.0327	
Arsenic	7440-38-2	0.128		0.00794	
Barium	7440-39-3	2.69	QB-01	0.907	
Beryllium	7440-41-7	0.0178		0.00271	
Cadmium	7440-43-9	0.0207	U	0.0628	
Chromium	7440-47-3	2.85		1.87	
Cobalt	7440-48-4	0.305		0.0369	
Copper	7440-50-8	73.4		2.23	
Lead	7439-92-1	0.365		0.181	
Manganese	7439-96-5	7.85		1.60	
Molybdenum	7439-98-7	3.43		0.304	
Nickel	7440-02-0	1.27		0.552	
Selenium	7782-49-2	0.252		0.00759	
Thallium	7440-28-0	0.00126		4.99E-4	
Vanadium	7440-62-2	1.10		0.0448	
Zinc	7440-66-6	9.49	U	65.1	



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Description: MFL-AM07-120924-HM **Lab ID:** 4121638-22 **Sampled:** 12/09/24 23:59
Matrix: Air **Sample Volume:** 1636.473 m³ **Received:** 12/16/24 10:25
Filter ID: **Analysis Date:** 12/18/24 07:06
Comments: Q8504488 - Received in good condition.

Inorganics by Compendium Method IO-3.5

<u>Analyte</u>	<u>CAS Number</u>	<u>Results</u>		<u>MDL</u>
		<u>ng/m³ Air</u>	<u>Flag</u>	<u>ng/m³ Air</u>
Antimony	7440-36-0	0.0966	SL	0.0384
Arsenic	7440-38-2	0.838		0.00932
Barium	7440-39-3	8.06	LJ, QB-01, QX	1.06
Beryllium	7440-41-7	0.0443		0.00318
Cadmium	7440-43-9	0.0202	U	0.0737
Chromium	7440-47-3	6.39		2.20
Cobalt	7440-48-4	1.36		0.0433
Copper	7440-50-8	22.3		2.61
Lead	7439-92-1	1.10		0.213
Manganese	7439-96-5	45.6		1.88
Molybdenum	7439-98-7	1.35		0.357
Nickel	7440-02-0	3.32		0.648
Selenium	7782-49-2	0.357		0.00891
Thallium	7440-28-0	0.00289	QB-04	5.86E-4
Vanadium	7440-62-2	4.03		0.0526
Zinc	7440-66-6	18.4	U	76.4



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 AQS SITE CODE:
 SITE CODE: Lahaina fires

Description: MFL-LB01-120924-HM **Lab ID:** 4121638-23 **Sampled:** 12/09/24 00:00
Matrix: Air **Sample Volume:** 1997.529 m³ **Received:** 12/16/24 10:25
Filter ID: **Analysis Date:** 12/18/24 07:24
Comments: Q8504508 Lot Blank - Received in good condition.

Inorganics by Compendium Method IO-3.5

<u>Analyte</u>	<u>CAS Number</u>	<u>Results</u>		<u>MDL</u>
		<u>ng/m³ Air</u>	<u>Flag</u>	<u>ng/m³ Air</u>
Antimony	7440-36-0	0.0155	SL, U	0.0314
Arsenic	7440-38-2	0.00304	U	0.00763
Barium	7440-39-3	1.18	LJ, QB-01, QX	0.872
Beryllium	7440-41-7	5.37E-4	U	0.00261
Cadmium	7440-43-9	8.70E-4	U	0.0604
Chromium	7440-47-3	1.08	U	1.80
Cobalt	7440-48-4	0.0132	U	0.0355
Copper	7440-50-8	0.500	U	2.14
Lead	7439-92-1	0.0403	U	0.174
Manganese	7439-96-5	0.222	U	1.54
Molybdenum	7439-98-7	0.170	U	0.292
Nickel	7440-02-0	0.400	U	0.531
Selenium	7782-49-2	0.00373	U	0.00730
Thallium	7440-28-0	1.59E-4	QB-04, U	4.80E-4
Vanadium	7440-62-2	0.0230	U	0.0431
Zinc	7440-66-6	2.34	U	62.6



CERTIFICATE OF ANALYSIS

Tetra Tech, Inc.
 1777 Sentry Pkwy, Bldg 12
 Blue Bell, PA 19422
 ATTN: Ms. Chelsea Saber
 PHONE: (703) 885-5495 FAX:

FILE #: 4205.00.003.001
 REPORTED: 12/26/24 10:37
 SUBMITTED: 12/16/24
 AQS SITE CODE:
 SITE CODE: Lahaina fires

Description: MFL-AM05-121024-HM **Lab ID:** 4121638-24 **Sampled:** 12/10/24 23:59
Matrix: Air **Sample Volume:** 2000.873 m³ **Received:** 12/16/24 10:25
Filter ID: **Analysis Date:** 12/18/24 07:38
Comments: Q8504506 - Received in good condition.

Inorganics by Compendium Method IO-3.5

<u>Analyte</u>	<u>CAS Number</u>	<u>Results</u>		<u>MDL</u>
		<u>ng/m³ Air</u>	<u>Flag</u>	<u>ng/m³ Air</u>
Antimony	7440-36-0	0.129	SL	0.0314
Arsenic	7440-38-2	0.338		0.00762
Barium	7440-39-3	6.69	LJ, QB-01, QX	0.870
Beryllium	7440-41-7	0.0180		0.00260
Cadmium	7440-43-9	0.0209	U	0.0603
Chromium	7440-47-3	3.78		1.80
Cobalt	7440-48-4	0.670		0.0355
Copper	7440-50-8	38.9		2.14
Lead	7439-92-1	0.696		0.174
Manganese	7439-96-5	18.4		1.54
Molybdenum	7439-98-7	2.07		0.292
Nickel	7440-02-0	2.15		0.530
Selenium	7782-49-2	0.226		0.00729
Thallium	7440-28-0	0.00176	QB-04	4.79E-4
Vanadium	7440-62-2	2.09		0.0430
Zinc	7440-66-6	16.2	U	62.4



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FILE #: 4205.00.003.001
 REPORTED: 12/26/24 10:37
 SUBMITTED: 12/16/24
 AQS SITE CODE:
 SITE CODE: Lahaina fires

Description: MFL-AM02-121024-HM **Lab ID:** 4121638-25 **Sampled:** 12/10/24 23:59
Matrix: Air **Sample Volume:** 2092.461 m³ **Received:** 12/16/24 10:25
Filter ID: **Analysis Date:** 12/18/24 07:53
Comments: Q8504504 - Received in good condition.

Inorganics by Compendium Method IO-3.5

<u>Analyte</u>	<u>CAS Number</u>	<u>Results</u>		<u>MDL</u>
		<u>ng/m³ Air</u>	<u>Flag</u>	<u>ng/m³ Air</u>
Antimony	7440-36-0	0.199	SL	0.0300
Arsenic	7440-38-2	0.424		0.00729
Barium	7440-39-3	8.50	LJ, QB-01, QX	0.832
Beryllium	7440-41-7	0.0268		0.00249
Cadmium	7440-43-9	0.0433	U	0.0576
Chromium	7440-47-3	4.42		1.72
Cobalt	7440-48-4	0.862		0.0339
Copper	7440-50-8	44.2		2.04
Lead	7439-92-1	1.44		0.166
Manganese	7439-96-5	24.6		1.47
Molybdenum	7439-98-7	1.58		0.279
Nickel	7440-02-0	2.56		0.507
Selenium	7782-49-2	0.260		0.00697
Thallium	7440-28-0	0.00181	QB-04	4.58E-4
Vanadium	7440-62-2	2.84		0.0411
Zinc	7440-66-6	21.4	U	59.7



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FILE #: 4205.00.003.001
 REPORTED: 12/26/24 10:37
 SUBMITTED: 12/16/24
 AQS SITE CODE:
 SITE CODE: Lahaina fires

Description: MFL-AM03-121024-HM **Lab ID:** 4121638-26 **Sampled:** 12/10/24 23:59
Matrix: Air **Sample Volume:** 1930.1 m³ **Received:** 12/16/24 10:25
Filter ID: **Analysis Date:** 12/18/24 08:08
Comments: Q8504503 - Received in good condition.

Inorganics by Compendium Method IO-3.5

<u>Analyte</u>	<u>CAS Number</u>	<u>Results</u>		<u>MDL</u>
		<u>ng/m³ Air</u>	<u>Flag</u>	<u>ng/m³ Air</u>
Antimony	7440-36-0	0.0727	SL	0.0325
Arsenic	7440-38-2	0.213		0.00790
Barium	7440-39-3	4.69	LJ, QB-01, QX	0.902
Beryllium	7440-41-7	0.0380		0.00270
Cadmium	7440-43-9	0.0119	U	0.0625
Chromium	7440-47-3	3.93		1.86
Cobalt	7440-48-4	0.634		0.0368
Copper	7440-50-8	60.6		2.22
Lead	7439-92-1	0.394		0.180
Manganese	7439-96-5	15.0		1.59
Molybdenum	7439-98-7	3.04		0.303
Nickel	7440-02-0	2.02		0.550
Selenium	7782-49-2	0.228		0.00755
Thallium	7440-28-0	0.00160	QB-04	4.97E-4
Vanadium	7440-62-2	1.76		0.0446
Zinc	7440-66-6	9.74	U	64.7



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FILE #: 4205.00.003.001
 REPORTED: 12/26/24 10:37
 SUBMITTED: 12/16/24
 AQS SITE CODE:
 SITE CODE: Lahaina fires

Description: MFL-AM07-121024-HM **Lab ID:** 4121638-27 **Sampled:** 12/10/24 23:59
Matrix: Air **Sample Volume:** 1579.979 m³ **Received:** 12/16/24 10:25
Filter ID: **Analysis Date:** 12/18/24 08:24
Comments: Q8504500 - Received in good condition.

Inorganics by Compendium Method IO-3.5

<u>Analyte</u>	<u>CAS Number</u>	<u>Results</u>		<u>MDL</u>
		<u>ng/m³ Air</u>	<u>Flag</u>	<u>ng/m³ Air</u>
Antimony	7440-36-0	0.113	SL	0.0397
Arsenic	7440-38-2	1.21		0.00965
Barium	7440-39-3	12.0	LJ, QB-01, QX	1.10
Beryllium	7440-41-7	0.0665		0.00330
Cadmium	7440-43-9	0.0334	U	0.0763
Chromium	7440-47-3	8.27		2.28
Cobalt	7440-48-4	1.91		0.0449
Copper	7440-50-8	24.5		2.71
Lead	7439-92-1	1.37		0.220
Manganese	7439-96-5	67.3		1.95
Molybdenum	7439-98-7	1.44		0.370
Nickel	7440-02-0	4.40		0.671
Selenium	7782-49-2	0.397		0.00923
Thallium	7440-28-0	0.00345	QB-04	6.07E-4
Vanadium	7440-62-2	5.20		0.0545
Zinc	7440-66-6	32.4	U	79.1



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FILE #: 4205.00.003.001
 REPORTED: 12/26/24 10:37
 SUBMITTED: 12/16/24
 AQS SITE CODE:
 SITE CODE: Lahaina fires

Description: MFL-FB01-121024-HM **Lab ID:** 4121638-28 **Sampled:** 12/10/24 00:00
Matrix: Air **Sample Volume:** 2000.873 m³ **Received:** 12/16/24 10:25
Filter ID: **Analysis Date:** 12/18/24 08:58
Comments: Q8504497 Field Blank - Received in good condition.

Inorganics by Compendium Method IO-3.5

<u>Analyte</u>	<u>CAS Number</u>	<u>Results</u>		<u>MDL</u>	
		<u>ng/m³ Air</u>	<u>Flag</u>	<u>ng/m³ Air</u>	
Antimony	7440-36-0	0.0162	SL, U	0.0314	
Arsenic	7440-38-2	0.00805	FB-01	0.00762	
Barium	7440-39-3	1.93	FB-01, LJ, QB-01, QX	0.870	
Beryllium	7440-41-7	6.12E-4	U	0.00260	
Cadmium	7440-43-9	0.00142	U	0.0603	
Chromium	7440-47-3	1.12	U	1.80	
Cobalt	7440-48-4	0.0188	U	0.0355	
Copper	7440-50-8	1.12	U	2.14	
Lead	7439-92-1	0.0515	U	0.174	
Manganese	7439-96-5	0.347	U	1.54	
Molybdenum	7439-98-7	0.242	U	0.292	
Nickel	7440-02-0	0.542	FB-01	0.530	
Selenium	7782-49-2	0.00681	U	0.00729	
Thallium	7440-28-0	8.24E-5	QB-04, U	4.79E-4	
Vanadium	7440-62-2	0.0383	U	0.0430	
Zinc	7440-66-6	3.84	U	62.4	



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FILE #: 4205.00.003.001
 REPORTED: 12/26/24 10:37
 SUBMITTED: 12/16/24
 AQS SITE CODE:
 SITE CODE: Lahaina fires

Description: MFL-AM05-121124-HM **Lab ID:** 4121638-29 **Sampled:** 12/11/24 23:59
Matrix: Air **Sample Volume:** 1985.823 m³ **Received:** 12/16/24 10:25
Filter ID: **Analysis Date:** 12/18/24 09:12
Comments: Q8504499 - Received in good condition.

Inorganics by Compendium Method IO-3.5

<u>Analyte</u>	<u>CAS Number</u>	<u>Results</u>		<u>MDL</u>
		<u>ng/m³ Air</u>	<u>Flag</u>	<u>ng/m³ Air</u>
Antimony	7440-36-0	0.183	SL	0.0316
Arsenic	7440-38-2	0.696		0.00768
Barium	7440-39-3	13.2	LJ, QB-01, QX	0.877
Beryllium	7440-41-7	0.0432		0.00262
Cadmium	7440-43-9	0.0526	U	0.0607
Chromium	7440-47-3	8.26		1.81
Cobalt	7440-48-4	1.80		0.0357
Copper	7440-50-8	41.9		2.15
Lead	7439-92-1	1.80		0.175
Manganese	7439-96-5	48.2		1.55
Molybdenum	7439-98-7	2.17		0.294
Nickel	7440-02-0	4.94		0.534
Selenium	7782-49-2	0.266		0.00734
Thallium	7440-28-0	0.00263	QB-04	4.83E-4
Vanadium	7440-62-2	5.45		0.0433
Zinc	7440-66-6	26.6	U	62.9



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FILE #: 4205.00.003.001
 REPORTED: 12/26/24 10:37
 SUBMITTED: 12/16/24
 AQS SITE CODE:
 SITE CODE: Lahaina fires

Description: MFL-AM02-121124-HM **Lab ID:** 4121638-30 **Sampled:** 12/11/24 23:59
Matrix: Air **Sample Volume:** 2095.679 m³ **Received:** 12/16/24 10:25
Filter ID: **Analysis Date:** 12/18/24 09:27
Comments: Q8504494 - Received in good condition.

Inorganics by Compendium Method IO-3.5

<u>Analyte</u>	<u>CAS Number</u>	<u>Results</u>		<u>MDL</u>
		<u>ng/m³ Air</u>	<u>Flag</u>	<u>ng/m³ Air</u>
Antimony	7440-36-0	0.188	SL	0.0300
Arsenic	7440-38-2	0.977		0.00727
Barium	7440-39-3	19.5	LJ, QB-01, QX	0.831
Beryllium	7440-41-7	0.0731		0.00248
Cadmium	7440-43-9	0.206		0.0575
Chromium	7440-47-3	10.8		1.72
Cobalt	7440-48-4	2.48		0.0338
Copper	7440-50-8	55.9		2.04
Lead	7439-92-1	3.65		0.166
Manganese	7439-96-5	67.9		1.47
Molybdenum	7439-98-7	1.68		0.279
Nickel	7440-02-0	6.76		0.506
Selenium	7782-49-2	0.344		0.00696
Thallium	7440-28-0	0.00309	QB-04	4.57E-4
Vanadium	7440-62-2	8.05		0.0411
Zinc	7440-66-6	46.9	U	59.6



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FILE #: 4205.00.003.001
 REPORTED: 12/26/24 10:37
 SUBMITTED: 12/16/24
 AQS SITE CODE:
 SITE CODE: Lahaina fires

Description: MFL-AM03-121124-HM **Lab ID:** 4121638-31 **Sampled:** 12/11/24 23:59
Matrix: Air **Sample Volume:** 1922.859 m³ **Received:** 12/16/24 10:25
Filter ID: **Analysis Date:** 12/18/24 11:41
Comments: Q8504493 - Received in good condition.

Inorganics by Compendium Method IO-3.5

<u>Analyte</u>	<u>CAS Number</u>	<u>Results</u>		<u>MDL</u>
		<u>ng/m³ Air</u>	<u>Flag</u>	<u>ng/m³ Air</u>
Antimony	7440-36-0	0.0556	SL	0.0327
Arsenic	7440-38-2	0.274		0.00793
Barium	7440-39-3	6.24	LJ, QB-01, QX	0.905
Beryllium	7440-41-7	0.0637		0.00271
Cadmium	7440-43-9	0.0201	U	0.0627
Chromium	7440-47-3	5.59		1.87
Cobalt	7440-48-4	1.02		0.0369
Copper	7440-50-8	61.8		2.23
Lead	7439-92-1	0.748		0.181
Manganese	7439-96-5	24.9		1.60
Molybdenum	7439-98-7	3.15	LJ, QX	0.304
Nickel	7440-02-0	2.89		0.552
Selenium	7782-49-2	0.230		0.00758
Thallium	7440-28-0	0.00192	QB-04	4.98E-4
Vanadium	7440-62-2	2.70		0.0448
Zinc	7440-66-6	11.9	LJ, QX, U	65.0



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 REPORTED: 12/26/24 10:37
 SUBMITTED: 12/16/24
 AQS SITE CODE:
 SITE CODE: Lahaina fires

Description: MFL-AM07-121124-HM **Lab ID:** 4121638-32 **Sampled:** 12/11/24 23:59
Matrix: Air **Sample Volume:** 1323.743 m³ **Received:** 12/16/24 10:25
Filter ID: **Analysis Date:** 12/18/24 11:59
Comments: Q8504492 - Received in good condition.

Inorganics by Compendium Method IO-3.5

<u>Analyte</u>	<u>CAS Number</u>	<u>Results</u>		<u>MDL</u>
		<u>ng/m³ Air</u>	<u>Flag</u>	<u>ng/m³ Air</u>
Antimony	7440-36-0	0.110	SL	0.0474
Arsenic	7440-38-2	1.73		0.0115
Barium	7440-39-3	17.4	LJ, QB-01, QX	1.32
Beryllium	7440-41-7	0.107		0.00393
Cadmium	7440-43-9	0.0895	U	0.0911
Chromium	7440-47-3	14.5		2.72
Cobalt	7440-48-4	3.23		0.0536
Copper	7440-50-8	24.7		3.23
Lead	7439-92-1	2.33		0.263
Manganese	7439-96-5	104		2.32
Molybdenum	7439-98-7	1.28	LJ, QX	0.441
Nickel	7440-02-0	7.36		0.801
Selenium	7782-49-2	0.487		0.0110
Thallium	7440-28-0	0.00526	QB-04	7.24E-4
Vanadium	7440-62-2	8.28		0.0650
Zinc	7440-66-6	36.7	LJ, QX, U	94.4



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FILE #: 4205.00.003.001
REPORTED: 12/26/24 10:37
SUBMITTED: 12/16/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Inorganics by Compendium Method IO-3.5 - Quality Control

Batch 2412046 - B4L1708

Calibration Blank (2412046-CCB1)

Prepared & Analyzed: 12/17/24

Antimony	0.707		ng/l							
Arsenic	-0.526		ng/l							U
Barium	0.00926		ng/l							
Beryllium	-0.512		ng/l							U
Cadmium	0.146		ng/l							
Chromium	3.47		ng/l							
Cobalt	0.244		ng/l							
Copper	19.1		ng/l							
Lead	2.78		ng/l							
Manganese	3.69		ng/l							
Molybdenum	24.2		ng/l							
Nickel	-1.61		ng/l							U
Selenium	7.21		ng/l							
Thallium	1.10		ng/l							
Vanadium	46.2		ng/l							
Zinc	-42.3		ng/l							U

Calibration Blank (2412046-CCB2)

Prepared & Analyzed: 12/17/24

Antimony	0.550		ng/l							
Arsenic	0.906		ng/l							
Barium	1.65		ng/l							
Beryllium	-0.827		ng/l							U
Cadmium	0.115		ng/l							
Chromium	2.87		ng/l							
Cobalt	0.217		ng/l							
Copper	9.60		ng/l							
Lead	1.91		ng/l							
Manganese	3.14		ng/l							
Molybdenum	5.93		ng/l							
Nickel	-0.775		ng/l							U
Selenium	6.48		ng/l							
Thallium	1.11		ng/l							
Vanadium	39.8		ng/l							
Zinc	-45.0		ng/l							U

Calibration Blank (2412046-CCB3)

Prepared & Analyzed: 12/17/24

Antimony	0.661		ng/l							
Arsenic	1.28		ng/l							
Barium	2.07		ng/l							
Beryllium	-1.05		ng/l							U

Eastern Research Group

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FILE #: 4205.00.003.001
 REPORTED: 12/26/24 10:37
 SUBMITTED: 12/16/24
 AQS SITE CODE:
 SITE CODE: Lahaina fires

Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Inorganics by Compendium Method IO-3.5 - Quality Control

Batch 2412046 - B4L1708

Calibration Blank (2412046-CCB3) Contin

Prepared & Analyzed: 12/17/24

Cadmium	0.147		ng/l							
Chromium	3.65		ng/l							
Cobalt	0.535		ng/l							
Copper	19.1		ng/l							
Lead	3.12		ng/l							
Manganese	5.27		ng/l							
Molybdenum	5.49		ng/l							
Nickel	-0.223		ng/l							U
Selenium	15.0		ng/l							
Thallium	1.05		ng/l							
Vanadium	7.04		ng/l							
Zinc	-46.3		ng/l							U

Calibration Blank (2412046-CCB4)

Prepared: 12/17/24 Analyzed: 12/18/24

Antimony	0.395		ng/l							
Arsenic	0.148		ng/l							
Barium	0.151		ng/l							
Beryllium	-1.12		ng/l							U
Cadmium	0.120		ng/l							
Chromium	3.25		ng/l							
Cobalt	0.342		ng/l							
Copper	13.9		ng/l							
Lead	2.40		ng/l							
Manganese	3.85		ng/l							
Molybdenum	6.48		ng/l							
Nickel	0.592		ng/l							
Selenium	19.6		ng/l							
Thallium	0.966		ng/l							
Vanadium	-22.9		ng/l							U
Zinc	-59.5		ng/l							U

Calibration Blank (2412046-CCB5)

Prepared: 12/17/24 Analyzed: 12/18/24

Antimony	1.26		ng/l							
Arsenic	-0.0522		ng/l							U
Barium	2.57		ng/l							
Beryllium	-1.24		ng/l							U
Cadmium	0.300		ng/l							
Chromium	3.57		ng/l							
Cobalt	0.296		ng/l							
Copper	23.3		ng/l							

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 Blue Bell, PA 19422
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 PHONE: (703) 885-5495 FAX:

FILE #: 4205.00.003.001
 REPORTED: 12/26/24 10:37
 SUBMITTED: 12/16/24
 AQS SITE CODE:
 SITE CODE: Lahaina fires

Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Inorganics by Compendium Method IO-3.5 - Quality Control

Batch 2412046 - B4L1708

Calibration Blank (2412046-CCB5) Contin

Prepared: 12/17/24 Analyzed: 12/18/24

Lead	3.27		ng/l							
Manganese	6.44		ng/l							
Molybdenum	8.27		ng/l							
Nickel	2.73		ng/l							
Selenium	9.33		ng/l							
Thallium	1.33		ng/l							
Vanadium	-30.6		ng/l							U
Zinc	-37.7		ng/l							U

Calibration Blank (2412046-CCB6)

Prepared: 12/17/24 Analyzed: 12/18/24

Antimony	1.38		ng/l							
Arsenic	-1.47		ng/l							U
Barium	3.72		ng/l							
Beryllium	-1.13		ng/l							U
Cadmium	0.223		ng/l							
Chromium	3.89		ng/l							
Cobalt	0.316		ng/l							
Copper	30.8		ng/l							
Lead	4.95		ng/l							
Manganese	7.68		ng/l							
Molybdenum	12.1		ng/l							
Nickel	0.125		ng/l							
Selenium	0.604		ng/l							
Thallium	1.78		ng/l							QB-04
Vanadium	-40.0		ng/l							U
Zinc	-36.2		ng/l							U

Calibration Blank (2412046-CCB7)

Prepared: 12/17/24 Analyzed: 12/18/24

Antimony	1.34		ng/l							
Arsenic	-1.10		ng/l							U
Barium	3.74		ng/l							
Beryllium	-1.17		ng/l							U
Cadmium	0.332		ng/l							
Chromium	4.61		ng/l							
Cobalt	0.600		ng/l							
Copper	31.9		ng/l							
Lead	4.53		ng/l							
Manganese	8.30		ng/l							
Molybdenum	9.79		ng/l							
Nickel	1.16		ng/l							

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Inorganics by Compendium Method IO-3.5 - Quality Control

Batch 2412046 - B4L1708

Calibration Blank (2412046-CCB7) Contin

Prepared: 12/17/24 Analyzed: 12/18/24

Selenium	8.65		ng/l							
Thallium	1.77		ng/l							QB-04
Vanadium	-36.2		ng/l							U
Zinc	-34.0		ng/l							U

Calibration Check (2412046-CCV1)

Prepared & Analyzed: 12/17/24

Antimony	20400		ng/l	20000		102	90-110			
Arsenic	20100		ng/l	20000		100	90-110			
Barium	200000		ng/l	200000		100	90-110			
Beryllium	4990		ng/l	5000.0		99.8	90-110			
Cadmium	20600		ng/l	20000		103	90-110			
Chromium	241000		ng/l	240000		100	90-110			
Cobalt	51100		ng/l	50000		102	90-110			
Copper	2.06E6		ng/l	2.0000E6		103	90-110			
Lead	202000		ng/l	200000		101	90-110			
Manganese	501000		ng/l	500000		100	90-110			
Molybdenum	50900		ng/l	50000		102	90-110			
Nickel	123000		ng/l	120000		102	90-110			
Selenium	20000		ng/l	20000		99.8	90-110			
Thallium	504		ng/l	500.00		101	90-110			
Vanadium	19900		ng/l	20000		99.5	90-110			
Zinc	538000		ng/l	500000		108	90-110			

Calibration Check (2412046-CCV2)

Prepared & Analyzed: 12/17/24

Antimony	20400		ng/l	20000		102	90-110			
Arsenic	20100		ng/l	20000		101	90-110			
Barium	199000		ng/l	200000		99.4	90-110			
Beryllium	4770		ng/l	5000.0		95.4	90-110			
Cadmium	20800		ng/l	20000		104	90-110			
Chromium	243000		ng/l	240000		101	90-110			
Cobalt	50800		ng/l	50000		102	90-110			
Copper	2.06E6		ng/l	2.0000E6		103	90-110			
Lead	203000		ng/l	200000		101	90-110			
Manganese	504000		ng/l	500000		101	90-110			
Molybdenum	50800		ng/l	50000		102	90-110			
Nickel	123000		ng/l	120000		102	90-110			
Selenium	20100		ng/l	20000		101	90-110			
Thallium	493		ng/l	500.00		98.6	90-110			
Vanadium	20000		ng/l	20000		100	90-110			
Zinc	541000		ng/l	500000		108	90-110			

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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Inorganics by Compendium Method IO-3.5 - Quality Control

Batch 2412046 - B4L1708

Calibration Check (2412046-CCV3)

Prepared & Analyzed: 12/17/24

Antimony	20700		ng/l	20000		103	90-110			
Arsenic	20100		ng/l	20000		101	90-110			
Barium	200000		ng/l	200000		100	90-110			
Beryllium	5050		ng/l	5000.0		101	90-110			
Cadmium	20700		ng/l	20000		104	90-110			
Chromium	242000		ng/l	240000		101	90-110			
Cobalt	50300		ng/l	50000		101	90-110			
Copper	2.05E6		ng/l	2.0000E6		102	90-110			
Lead	202000		ng/l	200000		101	90-110			
Manganese	503000		ng/l	500000		101	90-110			
Molybdenum	51100		ng/l	50000		102	90-110			
Nickel	121000		ng/l	120000		101	90-110			
Selenium	20400		ng/l	20000		102	90-110			
Thallium	486		ng/l	500.00		97.2	90-110			
Vanadium	20300		ng/l	20000		101	90-110			
Zinc	539000		ng/l	500000		108	90-110			

Calibration Check (2412046-CCV4)

Prepared: 12/17/24 Analyzed: 12/18/24

Antimony	21100		ng/l	20000		106	90-110			
Arsenic	20400		ng/l	20000		102	90-110			
Barium	205000		ng/l	200000		103	90-110			
Beryllium	5140		ng/l	5000.0		103	90-110			
Cadmium	21300		ng/l	20000		107	90-110			
Chromium	248000		ng/l	240000		103	90-110			
Cobalt	51300		ng/l	50000		103	90-110			
Copper	2.10E6		ng/l	2.0000E6		105	90-110			
Lead	207000		ng/l	200000		104	90-110			
Manganese	515000		ng/l	500000		103	90-110			
Molybdenum	52200		ng/l	50000		104	90-110			
Nickel	124000		ng/l	120000		103	90-110			
Selenium	20400		ng/l	20000		102	90-110			
Thallium	494		ng/l	500.00		98.7	90-110			
Vanadium	20600		ng/l	20000		103	90-110			
Zinc	548000		ng/l	500000		110	90-110			

Calibration Check (2412046-CCV5)

Prepared: 12/17/24 Analyzed: 12/18/24

Antimony	21200		ng/l	20000		106	90-110			
Arsenic	20600		ng/l	20000		103	90-110			
Barium	202000		ng/l	200000		101	90-110			
Beryllium	5100		ng/l	5000.0		102	90-110			

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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Inorganics by Compendium Method IO-3.5 - Quality Control

Batch 2412046 - B4L1708

Calibration Check (2412046-CCV5) Contin

Prepared: 12/17/24 Analyzed: 12/18/24

Cadmium	21200		ng/l	20000		106	90-110			
Chromium	250000		ng/l	240000		104	90-110			
Cobalt	51600		ng/l	50000		103	90-110			
Copper	2.12E6		ng/l	2.0000E6		106	90-110			
Lead	208000		ng/l	200000		104	90-110			
Manganese	518000		ng/l	500000		104	90-110			
Molybdenum	52100		ng/l	50000		104	90-110			
Nickel	124000		ng/l	120000		104	90-110			
Selenium	20300		ng/l	20000		102	90-110			
Thallium	495		ng/l	500.00		98.9	90-110			
Vanadium	20700		ng/l	20000		103	90-110			
Zinc	552000		ng/l	500000		110	90-110			

Calibration Check (2412046-CCV6)

Prepared: 12/17/24 Analyzed: 12/18/24

Antimony	20800		ng/l	20000		104	90-110			
Arsenic	20400		ng/l	20000		102	90-110			
Barium	224000		ng/l	200000		112	90-110			LJ, QX
Beryllium	5180		ng/l	5000.0		104	90-110			
Cadmium	21000		ng/l	20000		105	90-110			
Chromium	249000		ng/l	240000		104	90-110			
Cobalt	51200		ng/l	50000		102	90-110			
Copper	2.10E6		ng/l	2.0000E6		105	90-110			
Lead	207000		ng/l	200000		103	90-110			
Manganese	505000		ng/l	500000		101	90-110			
Molybdenum	54800		ng/l	50000		110	90-110			
Nickel	123000		ng/l	120000		103	90-110			
Selenium	20400		ng/l	20000		102	90-110			
Thallium	491		ng/l	500.00		98.2	90-110			
Vanadium	20600		ng/l	20000		103	90-110			
Zinc	549000		ng/l	500000		110	90-110			

Calibration Check (2412046-CCV7)

Prepared: 12/17/24 Analyzed: 12/18/24

Antimony	21300		ng/l	20000		107	90-110			
Arsenic	20600		ng/l	20000		103	90-110			
Barium	232000		ng/l	200000		116	90-110			LJ, QX
Beryllium	5210		ng/l	5000.0		104	90-110			
Cadmium	21800		ng/l	20000		109	90-110			
Chromium	258000		ng/l	240000		108	90-110			
Cobalt	52400		ng/l	50000		105	90-110			
Copper	2.16E6		ng/l	2.0000E6		108	90-110			

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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Inorganics by Compendium Method IO-3.5 - Quality Control

Batch 2412046 - B4L1708

Calibration Check (2412046-CCV7) Contin

Prepared: 12/17/24 Analyzed: 12/18/24

Lead	211000		ng/l	200000		105	90-110			
Manganese	518000		ng/l	500000		104	90-110			
Molybdenum	55700		ng/l	50000		111	90-110			LJ, QX
Nickel	126000		ng/l	120000		105	90-110			
Selenium	20500		ng/l	20000		103	90-110			
Thallium	504		ng/l	500.00		101	90-110			
Vanadium	21200		ng/l	20000		106	90-110			
Zinc	562000		ng/l	500000		112	90-110			LJ, QX

High Cal Check (2412046-HCV1)

Prepared & Analyzed: 12/17/24

Antimony	40400		ng/l	40000		101	95-105			
Arsenic	40100		ng/l	40000		100	95-105			
Barium	400000		ng/l	400000		99.9	95-105			
Beryllium	9830		ng/l	10000		98.3	95-105			
Cadmium	40100		ng/l	40000		100	95-105			
Chromium	478000		ng/l	480000		99.6	95-105			
Cobalt	99400		ng/l	100000		99.4	95-105			
Copper	3.96E6		ng/l	4.0000E6		99.1	95-105			
Lead	404000		ng/l	400000		101	95-105			
Manganese	996000		ng/l	1.0000E6		99.6	95-105			
Molybdenum	101000		ng/l	100000		101	95-105			
Nickel	238000		ng/l	240000		99.1	95-105			
Selenium	40000		ng/l	40000		100	95-105			
Thallium	1000		ng/l	1000.0		100	95-105			
Vanadium	40000		ng/l	40000		100	95-105			
Zinc	989000		ng/l	1.0000E6		98.9	95-105			

Initial Cal Blank (2412046-ICB1)

Prepared & Analyzed: 12/17/24

Antimony	0.770		ng/l							
Arsenic	-0.230		ng/l							U
Barium	-0.298		ng/l							U
Beryllium	-0.716		ng/l							U
Cadmium	-0.00366		ng/l							U
Chromium	3.12		ng/l							
Cobalt	0.103		ng/l							
Copper	12.7		ng/l							
Lead	5.13		ng/l							
Manganese	4.81		ng/l							
Molybdenum	10.8		ng/l							
Nickel	-0.784		ng/l							U

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Inorganics by Compendium Method IO-3.5 - Quality Control

Batch 2412046 - B4L1708

Initial Cal Blank (2412046-ICB1) Continuu

Prepared & Analyzed: 12/17/24

Selenium	7.29		ng/l							
Thallium	0.907		ng/l							
Vanadium	90.2		ng/l							
Zinc	-52.6		ng/l							U

Initial Cal Check (2412046-ICV1)

Prepared & Analyzed: 12/17/24

Antimony	19500		ng/l	20000		97.6	90-110			
Arsenic	19300		ng/l	20000		96.6	90-110			
Barium	198000		ng/l	200000		99.2	90-110			
Beryllium	5070		ng/l	5000.0		101	90-110			
Cadmium	20100		ng/l	20000		101	90-110			
Chromium	237000		ng/l	240000		98.9	90-110			
Cobalt	47800		ng/l	50000		95.6	90-110			
Copper	2.02E6		ng/l	2.0000E6		101	90-110			
Lead	200000		ng/l	200000		100	90-110			
Manganese	483000		ng/l	500000		96.7	90-110			
Molybdenum	50300		ng/l	50000		101	90-110			
Nickel	120000		ng/l	120000		99.9	90-110			
Selenium	20000		ng/l	20000		100	90-110			
Thallium	497		ng/l	500.00		99.3	90-110			
Vanadium	20100		ng/l	20000		100	90-110			
Zinc	537000		ng/l	500000		107	90-110			

Interference Check A (2412046-IFA1)

Prepared & Analyzed: 12/17/24

Antimony	0.00		ng/l				80-120			U
Arsenic	0.00		ng/l				80-120			U
Barium	0.00		ng/l				80-120			U
Beryllium	0.00		ng/l				80-120			U
Cadmium	0.00		ng/l				80-120			U
Chromium	0.00		ng/l				80-120			U
Cobalt	0.00		ng/l				80-120			U
Copper	0.00		ng/l				80-120			U
Lead	0.00		ng/l				80-120			U
Manganese	0.00		ng/l				80-120			U
Molybdenum	316000		ng/l	300000		105	80-120			
Nickel	0.00		ng/l				80-120			U
Selenium	0.00		ng/l				80-120			U
Thallium	0.00		ng/l				80-120			U
Vanadium	0.00		ng/l				80-120			U
Zinc	0.00		ng/l				80-120			U

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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Inorganics by Compendium Method IO-3.5 - Quality Control

Batch 2412046 - B4L1708

Interference Check B (2412046-IFB1)

Prepared & Analyzed: 12/17/24

Antimony	20600		ng/l	20000		103	80-120			
Arsenic	20600		ng/l	20000		103	80-120			
Barium	200000		ng/l	200000		99.8	80-120			
Beryllium	4380		ng/l	5000.0		87.6	80-120			
Cadmium	20000		ng/l	20000		100	80-120			
Chromium	234000		ng/l	240000		97.5	80-120			
Cobalt	50600		ng/l	50000		101	80-120			
Copper	1.94E6		ng/l	2.0000E6		97.2	80-120			
Lead	209000		ng/l	200000		104	80-120			
Manganese	509000		ng/l	500000		102	80-120			
Molybdenum	376000		ng/l	350000		107	80-120			
Nickel	119000		ng/l	120000		98.8	80-120			
Selenium	19100		ng/l	20000		95.5	80-120			
Thallium	524		ng/l	500.00		105	80-120			
Vanadium	19300		ng/l	20000		96.6	80-120			
Zinc	495000		ng/l	500000		99.0	80-120			

Batch B4L1708 - ICP-MS Extraction

Blank (B4L1708-BLK1)

Prepared & Analyzed: 12/17/24

Antimony	ND	0.0386	ng/m ³ Air							SL, U
Arsenic	ND	0.00937	ng/m ³ Air							U
Barium	ND	1.07	ng/m ³ Air							QB-01, U
Beryllium	ND	0.00320	ng/m ³ Air							U
Cadmium	ND	0.0741	ng/m ³ Air							U
Chromium	ND	2.21	ng/m ³ Air							U
Cobalt	ND	0.0436	ng/m ³ Air							U
Copper	ND	2.63	ng/m ³ Air							U
Lead	ND	0.214	ng/m ³ Air							U
Manganese	ND	1.89	ng/m ³ Air							U
Molybdenum	ND	0.359	ng/m ³ Air							U
Nickel	ND	0.652	ng/m ³ Air							U
Selenium	ND	0.00896	ng/m ³ Air							U
Thallium	ND	5.89E-4	ng/m ³ Air							U
Vanadium	ND	0.0529	ng/m ³ Air							U
Zinc	ND	76.8	ng/m ³ Air							U

LCS (B4L1708-BS1)

Prepared & Analyzed: 12/17/24

Antimony	0.770	0.0386	ng/m ³ Air	1.3829		55.7	80-120			SL
Arsenic	2.73	0.00937	ng/m ³ Air	2.7658		98.7	80-120			
Barium	28.7	1.07	ng/m ³ Air	27.658		104	80-120			QB-01

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Tetra Tech, Inc.
 1777 Sentry Pkwy, Bldg 12
 Blue Bell, PA 19422
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 PHONE: (703) 885-5495 FAX:

FILE #: 4205.00.003.001
 REPORTED: 12/26/24 10:37
 SUBMITTED: 12/16/24
 AQS SITE CODE:
 SITE CODE: Lahaina fires

Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Inorganics by Compendium Method IO-3.5 - Quality Control

Batch B4L1708 - ICP-MS Extraction

LCS (B4L1708-BS1) Continued

Prepared & Analyzed: 12/17/24

Beryllium	1.35	0.00320	ng/m ³ Air	1.3829		97.8	80-120			
Cadmium	1.43	0.0741	ng/m ³ Air	1.3829		103	80-120			
Chromium	15.5	2.21	ng/m ³ Air	13.829		112	80-120			
Cobalt	1.37	0.0436	ng/m ³ Air	1.3829		99.0	80-120			
Copper	29.9	2.63	ng/m ³ Air	27.658		108	80-120			
Lead	14.1	0.214	ng/m ³ Air	13.829		102	80-120			
Manganese	8.64	1.89	ng/m ³ Air	8.2975		104	80-120			
Molybdenum	1.55	0.359	ng/m ³ Air	1.3829		112	80-120			
Nickel	3.24	0.652	ng/m ³ Air	2.7658		117	80-120			
Selenium	2.77	0.00896	ng/m ³ Air	2.7658		100	80-120			
Thallium	0.142	5.89E-4	ng/m ³ Air	0.13829		102	80-120			
Vanadium	2.79	0.0529	ng/m ³ Air	2.7658		101	80-120			
Zinc	96.5	76.8	ng/m ³ Air	82.975		116	80-120			

LCS (B4L1708-BS2)

Prepared & Analyzed: 12/17/24

Antimony	0.758	0.0386	ng/m ³ Air	1.3829		54.8	80-120			SL
Arsenic	2.71	0.00937	ng/m ³ Air	2.7658		97.9	80-120			
Barium	28.6	1.07	ng/m ³ Air	27.658		103	80-120			QB-01
Beryllium	1.34	0.00320	ng/m ³ Air	1.3829		96.9	80-120			
Cadmium	1.42	0.0741	ng/m ³ Air	1.3829		103	80-120			
Chromium	15.4	2.21	ng/m ³ Air	13.829		112	80-120			
Cobalt	1.35	0.0436	ng/m ³ Air	1.3829		97.7	80-120			
Copper	29.7	2.63	ng/m ³ Air	27.658		108	80-120			
Lead	13.9	0.214	ng/m ³ Air	13.829		100	80-120			
Manganese	8.60	1.89	ng/m ³ Air	8.2975		104	80-120			
Molybdenum	1.54	0.359	ng/m ³ Air	1.3829		111	80-120			
Nickel	3.21	0.652	ng/m ³ Air	2.7658		116	80-120			
Selenium	2.69	0.00896	ng/m ³ Air	2.7658		97.4	80-120			
Thallium	0.140	5.89E-4	ng/m ³ Air	0.13829		101	80-120			
Vanadium	2.78	0.0529	ng/m ³ Air	2.7658		100	80-120			
Zinc	94.8	76.8	ng/m ³ Air	82.975		114	80-120			

Duplicate (B4L1708-DUP1)

Source: 4121638-02

Prepared & Analyzed: 12/17/24

Antimony	0.239	0.0293	ng/m ³ Air		0.234		2.25	10		SL
Arsenic	0.304	0.00711	ng/m ³ Air		0.320		5.06	10		
Barium	7.09	0.812	ng/m ³ Air		7.22		1.71	10		QB-01
Beryllium	0.0188	0.00243	ng/m ³ Air		0.0193		2.74	10		
Cadmium	ND	0.0563	ng/m ³ Air		ND			10		U
Chromium	2.85	1.68	ng/m ³ Air		3.94		32.3	10		
Cobalt	0.542	0.0331	ng/m ³ Air		0.564		3.97	10		

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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Inorganics by Compendium Method IO-3.5 - Quality Control

Batch B4L1708 - ICP-MS Extraction

Duplicate (B4L1708-DUP1) Continued Source: 4121638-02 Prepared & Analyzed: 12/17/24

Copper	56.5	2.00	ng/m ³ Air		56.0			0.892	10	
Lead	1.10	0.162	ng/m ³ Air		1.17			6.22	10	
Manganese	17.7	1.43	ng/m ³ Air		18.2			2.39	10	
Molybdenum	2.82	0.273	ng/m ³ Air		2.85			0.979	10	
Nickel	1.68	0.495	ng/m ³ Air		1.85			9.89	10	
Selenium	0.202	0.00680	ng/m ³ Air		0.213			5.25	10	
Thallium	0.00173	4.47E-4	ng/m ³ Air		0.00180			3.86	10	
Vanadium	2.01	0.0402	ng/m ³ Air		2.05			1.79	10	
Zinc	ND	58.3	ng/m ³ Air		ND				10	U

Duplicate (B4L1708-DUP2) Source: 4121638-21 Prepared & Analyzed: 12/17/24

Antimony	0.0519	0.0327	ng/m ³ Air		0.0572			9.74	10	SL
Arsenic	0.124	0.00794	ng/m ³ Air		0.128			3.31	10	
Barium	2.71	0.907	ng/m ³ Air		2.69			0.591	10	QB-01
Beryllium	0.0174	0.00271	ng/m ³ Air		0.0178			2.09	10	
Cadmium	ND	0.0628	ng/m ³ Air		ND				10	U
Chromium	2.90	1.87	ng/m ³ Air		2.85			1.45	10	
Cobalt	0.297	0.0369	ng/m ³ Air		0.305			2.51	10	
Copper	71.4	2.23	ng/m ³ Air		73.4			2.76	10	
Lead	0.244	0.181	ng/m ³ Air		0.365			39.7	10	
Manganese	7.51	1.60	ng/m ³ Air		7.85			4.40	10	
Molybdenum	3.41	0.304	ng/m ³ Air		3.43			0.564	10	
Nickel	1.23	0.552	ng/m ³ Air		1.27			3.33	10	
Selenium	0.248	0.00759	ng/m ³ Air		0.252			1.57	10	
Thallium	0.00121	4.99E-4	ng/m ³ Air		0.00126			3.94	10	
Vanadium	1.09	0.0448	ng/m ³ Air		1.10			1.34	10	
Zinc	ND	65.1	ng/m ³ Air		ND				10	U

Duplicate (B4L1708-DUP3) Source: 4121638-10 Prepared: 12/17/24 Analyzed: 12/18/24

Antimony	0.0856	0.0329	ng/m ³ Air		0.0857			0.185	10	SL
Arsenic	0.176	0.00799	ng/m ³ Air		0.182			3.56	10	
Barium	3.93	0.913	ng/m ³ Air		3.99			1.54	10	QB-01
Beryllium	0.00882	0.00273	ng/m ³ Air		0.00881			0.117	10	
Cadmium	ND	0.0632	ng/m ³ Air		ND				10	U
Chromium	2.11	1.89	ng/m ³ Air		2.13			1.04	10	
Cobalt	0.263	0.0372	ng/m ³ Air		0.265			0.772	10	
Copper	39.5	2.24	ng/m ³ Air		40.2			1.71	10	
Lead	0.474	0.183	ng/m ³ Air		0.477			0.654	10	
Manganese	8.58	1.61	ng/m ³ Air		8.66			0.941	10	
Molybdenum	2.38	0.306	ng/m ³ Air		2.40			1.17	10	

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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Inorganics by Compendium Method IO-3.5 - Quality Control

Batch B4L1708 - ICP-MS Extraction

Duplicate (B4L1708-DUP3) Continued		Source: 4121638-10		Prepared: 12/17/24		Analyzed: 12/18/24	
Nickel	1.18	0.556	ng/m ³ Air	1.18		0.771	10
Selenium	0.176	0.00764	ng/m ³ Air	0.183		3.82	10
Thallium	8.24E-4	5.02E-4	ng/m ³ Air	8.34E-4		1.25	10
Vanadium	1.71	0.0451	ng/m ³ Air	1.72		0.702	10
Zinc	ND	65.5	ng/m ³ Air	ND			10 U

Duplicate (B4L1708-DUP4)		Source: 4121638-27		Prepared: 12/17/24		Analyzed: 12/18/24	
Antimony	0.111	0.0397	ng/m ³ Air	0.113		2.16	10 SL
Arsenic	1.21	0.00965	ng/m ³ Air	1.21		0.139	10
Barium	11.9	1.10	ng/m ³ Air	12.0		0.667	10 LJ, QB-01, QX
Beryllium	0.0676	0.00330	ng/m ³ Air	0.0665		1.71	10
Cadmium	ND	0.0763	ng/m ³ Air	ND			10 U
Chromium	8.24	2.28	ng/m ³ Air	8.27		0.395	10
Cobalt	1.91	0.0449	ng/m ³ Air	1.91		0.0202	10
Copper	24.5	2.71	ng/m ³ Air	24.5		0.0612	10
Lead	1.37	0.220	ng/m ³ Air	1.37		0.0148	10
Manganese	66.9	1.95	ng/m ³ Air	67.3		0.532	10
Molybdenum	1.44	0.370	ng/m ³ Air	1.44		0.576	10
Nickel	4.39	0.671	ng/m ³ Air	4.40		0.357	10
Selenium	0.400	0.00923	ng/m ³ Air	0.397		0.739	10
Thallium	0.00357	6.07E-4	ng/m ³ Air	0.00345		3.47	10 QB-04
Vanadium	5.19	0.0545	ng/m ³ Air	5.20		0.131	10
Zinc	ND	79.1	ng/m ³ Air	ND			10 U

Matrix Spike (B4L1708-MS1)		Source: 4121638-02		Prepared & Analyzed: 12/17/24			
Antimony	0.737	0.0293	ng/m ³ Air	1.0498	0.234	47.9	80-120 SL
Arsenic	2.33	0.00711	ng/m ³ Air	2.0996	0.320	95.7	80-120
Barium	28.2	0.812	ng/m ³ Air	20.996	7.22	100	80-120 QB-01
Beryllium	1.04	0.00243	ng/m ³ Air	1.0498	0.0193	97.5	80-120
Cadmium	1.08	0.0563	ng/m ³ Air	1.0498	ND	103	80-120
Chromium	13.6	1.68	ng/m ³ Air	10.498	3.94	91.8	80-120
Cobalt	1.58	0.0331	ng/m ³ Air	1.0498	0.564	97.0	80-120
Copper	79.6	2.00	ng/m ³ Air	20.996	56.0	112	80-120
Lead	11.8	0.162	ng/m ³ Air	10.498	1.17	101	80-120
Manganese	24.6	1.43	ng/m ³ Air	6.2989	18.2	102	80-120
Molybdenum	3.98	0.273	ng/m ³ Air	1.0498	2.85	108	80-120
Nickel	3.66	0.495	ng/m ³ Air	2.0996	1.85	85.8	80-120
Selenium	2.22	0.00680	ng/m ³ Air	2.0996	0.213	95.4	80-120
Thallium	0.104	4.47E-4	ng/m ³ Air	0.10498	0.00180	97.8	80-120
Vanadium	4.10	0.0402	ng/m ³ Air	2.0996	2.05	97.8	80-120

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Inorganics by Compendium Method IO-3.5 - Quality Control

Batch B4L1708 - ICP-MS Extraction

Matrix Spike (B4L1708-MS1) Continued Source: 4121638-02 Prepared & Analyzed: 12/17/24

Zinc	89.2	58.3	ng/m ³ Air	62.989	ND	142	80-120			
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Matrix Spike (B4L1708-MS2) Source: 4121638-21 Prepared & Analyzed: 12/17/24

Antimony	0.652	0.0327	ng/m ³ Air	1.1716	0.0572	50.8	80-120			SL
Arsenic	2.40	0.00794	ng/m ³ Air	2.3432	0.128	97.1	80-120			
Barium	25.8	0.907	ng/m ³ Air	23.432	2.69	98.4	80-120			QB-01
Beryllium	1.15	0.00271	ng/m ³ Air	1.1716	0.0178	96.5	80-120			
Cadmium	1.21	0.0628	ng/m ³ Air	1.1716	ND	103	80-120			
Chromium	14.8	1.87	ng/m ³ Air	11.716	2.85	102	80-120			
Cobalt	1.43	0.0369	ng/m ³ Air	1.1716	0.305	96.2	80-120			
Copper	96.5	2.23	ng/m ³ Air	23.432	73.4	98.8	80-120			
Lead	12.0	0.181	ng/m ³ Air	11.716	0.365	99.3	80-120			
Manganese	14.6	1.60	ng/m ³ Air	7.0296	7.85	96.3	80-120			
Molybdenum	4.57	0.304	ng/m ³ Air	1.1716	3.43	96.9	80-120			
Nickel	3.52	0.552	ng/m ³ Air	2.3432	1.27	95.6	80-120			
Selenium	2.49	0.00759	ng/m ³ Air	2.3432	0.252	95.5	80-120			
Thallium	0.116	4.99E-4	ng/m ³ Air	0.11716	0.00126	98.0	80-120			
Vanadium	3.38	0.0448	ng/m ³ Air	2.3432	1.10	97.2	80-120			
Zinc	83.1	65.1	ng/m ³ Air	70.296	ND	118	80-120			

Matrix Spike Dup (B4L1708-MSD1) Source: 4121638-02 Prepared & Analyzed: 12/17/24

Antimony	0.735	0.0293	ng/m ³ Air	1.0498	0.234	47.7	80-120	0.293	20	SL
Arsenic	2.35	0.00711	ng/m ³ Air	2.0996	0.320	96.9	80-120	1.03	20	
Barium	28.2	0.812	ng/m ³ Air	20.996	7.22	99.9	80-120	0.157	20	QB-01
Beryllium	1.06	0.00243	ng/m ³ Air	1.0498	0.0193	98.7	80-120	1.14	20	
Cadmium	1.09	0.0563	ng/m ³ Air	1.0498	ND	104	80-120	1.06	20	
Chromium	14.1	1.68	ng/m ³ Air	10.498	3.94	96.3	80-120	3.39	20	
Cobalt	1.61	0.0331	ng/m ³ Air	1.0498	0.564	100	80-120	1.99	20	
Copper	83.4	2.00	ng/m ³ Air	20.996	56.0	131	80-120	4.68	20	QM-07
Lead	11.9	0.162	ng/m ³ Air	10.498	1.17	102	80-120	0.730	20	
Manganese	24.8	1.43	ng/m ³ Air	6.2989	18.2	105	80-120	0.790	20	
Molybdenum	4.16	0.273	ng/m ³ Air	1.0498	2.85	125	80-120	4.40	20	QM-07
Nickel	3.87	0.495	ng/m ³ Air	2.0996	1.85	96.2	80-120	5.81	20	
Selenium	2.26	0.00680	ng/m ³ Air	2.0996	0.213	97.6	80-120	2.03	20	
Thallium	0.105	4.47E-4	ng/m ³ Air	0.10498	0.00180	98.3	80-120	0.536	20	
Vanadium	4.15	0.0402	ng/m ³ Air	2.0996	2.05	99.8	80-120	1.01	20	
Zinc	90.1	58.3	ng/m ³ Air	62.989	ND	143	80-120	0.910	20	

Matrix Spike Dup (B4L1708-MSD2) Source: 4121638-21 Prepared & Analyzed: 12/17/24

Antimony	0.684	0.0327	ng/m ³ Air	1.1716	0.0572	53.5	80-120	4.69	20	SL
Arsenic	2.42	0.00794	ng/m ³ Air	2.3432	0.128	98.0	80-120	0.871	20	

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Inorganics by Compendium Method IO-3.5 - Quality Control

Batch B4L1708 - ICP-MS Extraction

Matrix Spike Dup (B4L1708-MSD2) ContirSource: 4121638-21 Prepared & Analyzed: 12/17/24

Barium	26.3	0.907	ng/m ³ Air	23.432	2.69	101	80-120	2.16	20	QB-01
Beryllium	1.16	0.00271	ng/m ³ Air	1.1716	0.0178	97.3	80-120	0.717	20	
Cadmium	1.23	0.0628	ng/m ³ Air	1.1716	ND	105	80-120	1.92	20	
Chromium	15.0	1.87	ng/m ³ Air	11.716	2.85	103	80-120	0.962	20	
Cobalt	1.46	0.0369	ng/m ³ Air	1.1716	0.305	98.4	80-120	1.79	20	
Copper	95.4	2.23	ng/m ³ Air	23.432	73.4	93.9	80-120	1.18	20	
Lead	12.3	0.181	ng/m ³ Air	11.716	0.365	102	80-120	2.54	20	
Manganese	14.5	1.60	ng/m ³ Air	7.0296	7.85	95.1	80-120	0.590	20	
Molybdenum	4.58	0.304	ng/m ³ Air	1.1716	3.43	98.3	80-120	0.350	20	
Nickel	3.58	0.552	ng/m ³ Air	2.3432	1.27	98.6	80-120	1.95	20	
Selenium	2.59	0.00759	ng/m ³ Air	2.3432	0.252	99.8	80-120	4.01	20	
Thallium	0.119	4.99E-4	ng/m ³ Air	0.11716	0.00126	101	80-120	2.79	20	
Vanadium	3.37	0.0448	ng/m ³ Air	2.3432	1.10	97.0	80-120	0.144	20	
Zinc	83.7	65.1	ng/m ³ Air	70.296	ND	119	80-120	0.738	20	

Post Spike (B4L1708-PS1) Source: 4121638-02 Prepared & Analyzed: 12/17/24

Antimony	0.446	0.0293	ng/m ³ Air	0.20996	0.234	101	75-125			SL
Arsenic	1.33	0.00711	ng/m ³ Air	1.0498	0.320	96.3	75-125			
Barium	9.19	0.812	ng/m ³ Air	2.0996	7.22	94.0	75-125			QB-01
Beryllium	0.231	0.00243	ng/m ³ Air	0.20996	0.0193	101	75-125			
Cadmium	0.124	0.0563	ng/m ³ Air	0.10498	ND	118	75-125			
Chromium	4.99	1.68	ng/m ³ Air	1.0498	3.94	99.4	75-125			
Cobalt	0.775	0.0331	ng/m ³ Air	0.20996	0.564	100	75-125			
Copper	67.6	2.00	ng/m ³ Air	10.498	56.0	110	75-125			
Lead	22.8	0.162	ng/m ³ Air	20.996	1.17	103	75-125			
Manganese	20.3	1.43	ng/m ³ Air	2.0996	18.2	102	75-125			
Molybdenum	3.94	0.273	ng/m ³ Air	1.0498	2.85	104	75-125			
Nickel	3.97	0.495	ng/m ³ Air	2.0996	1.85	101	75-125			
Selenium	1.24	0.00680	ng/m ³ Air	1.0498	0.213	97.7	75-125			
Thallium	0.0541	4.47E-4	ng/m ³ Air	5.2491E-2	0.00180	99.7	75-125			
Vanadium	3.08	0.0402	ng/m ³ Air	1.0498	2.05	98.2	75-125			
Zinc	ND	58.3	ng/m ³ Air	20.996	ND		75-125			U

Post Spike (B4L1708-PS2) Source: 4121638-21 Prepared & Analyzed: 12/17/24

Antimony	0.290	0.0327	ng/m ³ Air	0.23432	0.0572	99.4	75-125			SL
Arsenic	1.25	0.00794	ng/m ³ Air	1.1716	0.128	95.5	75-125			
Barium	4.96	0.907	ng/m ³ Air	2.3432	2.69	96.8	75-125			QB-01
Beryllium	0.248	0.00271	ng/m ³ Air	0.23432	0.0178	98.4	75-125			
Cadmium	0.141	0.0628	ng/m ³ Air	0.11716	ND	120	75-125			
Chromium	4.02	1.87	ng/m ³ Air	1.1716	2.85	99.4	75-125			

Eastern Research Group

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CERTIFICATE OF ANALYSIS

Tetra Tech, Inc.
 1777 Sentry Pkwy, Bldg 12
 Blue Bell, PA 19422
 ATTN: Ms. Chelsea Saber
 PHONE: (703) 885-5495 FAX:

FILE #: 4205.00.003.001
 REPORTED: 12/26/24 10:37
 SUBMITTED: 12/16/24
 AQS SITE CODE:
 SITE CODE: Lahaina fires

Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Inorganics by Compendium Method IO-3.5 - Quality Control

Batch B4L1708 - ICP-MS Extraction

Post Spike (B4L1708-PS2) Continued **Source: 4121638-21** Prepared & Analyzed: 12/17/24

Cobalt	0.530	0.0369	ng/m ³ Air	0.23432	0.305	95.9	75-125			
Copper	86.3	2.23	ng/m ³ Air	11.716	73.4	110	75-125			
Lead	24.1	0.181	ng/m ³ Air	23.432	0.365	101	75-125			
Manganese	10.2	1.60	ng/m ³ Air	2.3432	7.85	99.7	75-125			
Molybdenum	4.55	0.304	ng/m ³ Air	1.1716	3.43	95.4	75-125			
Nickel	3.59	0.552	ng/m ³ Air	2.3432	1.27	98.6	75-125			
Selenium	1.38	0.00759	ng/m ³ Air	1.1716	0.252	96.3	75-125			
Thallium	0.0586	4.99E-4	ng/m ³ Air	5.8580E-2	0.00126	97.9	75-125			
Vanadium	2.25	0.0448	ng/m ³ Air	1.1716	1.10	98.6	75-125			
Zinc	ND	65.1	ng/m ³ Air	23.432	ND		75-125			U

Dilution Check (B4L1708-SRL1) **Source: 4121638-02** Prepared & Analyzed: 12/17/24

Antimony	0.231	0.147	ng/m ³ Air		0.234			1.54	10	SL
Arsenic	0.320	0.0356	ng/m ³ Air		0.320			0.0475	10	
Barium	7.20	4.06	ng/m ³ Air		7.22			0.201	10	QB-01
Beryllium	0.0186	0.0121	ng/m ³ Air		0.0193			3.59	10	
Cadmium	ND	0.281	ng/m ³ Air		ND				10	U
Chromium	ND	8.39	ng/m ³ Air		ND				10	U
Cobalt	0.582	0.165	ng/m ³ Air		0.564			3.20	10	
Copper	59.8	9.98	ng/m ³ Air		56.0			6.43	10	
Lead	1.14	0.812	ng/m ³ Air		1.17			2.75	10	
Manganese	18.5	7.17	ng/m ³ Air		18.2			1.99	10	
Molybdenum	2.91	1.36	ng/m ³ Air		2.85			1.99	10	
Nickel	ND	2.47	ng/m ³ Air		ND				10	U
Selenium	0.242	0.0340	ng/m ³ Air		0.213			12.7	10	SRD-01
Thallium	0.00361	0.00224	ng/m ³ Air		ND			67.0	10	
Vanadium	2.13	0.201	ng/m ³ Air		2.05			3.62	10	
Zinc	ND	292	ng/m ³ Air		ND				10	U

Dilution Check (B4L1708-SRL2) **Source: 4121638-21** Prepared & Analyzed: 12/17/24

Antimony	ND	0.164	ng/m ³ Air		ND				10	SL, U
Arsenic	0.126	0.0397	ng/m ³ Air		0.128			1.42	10	
Barium	ND	4.53	ng/m ³ Air		ND				10	QB-01, U
Beryllium	0.0177	0.0136	ng/m ³ Air		0.0178			0.635	10	
Cadmium	ND	0.314	ng/m ³ Air		ND				10	U
Chromium	ND	9.36	ng/m ³ Air		ND				10	U
Cobalt	0.311	0.185	ng/m ³ Air		0.305			1.82	10	
Copper	77.2	11.1	ng/m ³ Air		73.4			5.07	10	
Lead	ND	0.907	ng/m ³ Air		ND				10	U
Manganese	8.03	8.01	ng/m ³ Air		ND			2.26	10	

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 AQS SITE CODE:
 SITE CODE: Lahaina fires

Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Inorganics by Compendium Method IO-3.5 - Quality Control

Batch B4L1708 - ICP-MS Extraction

Dilution Check (B4L1708-SRL2) Continue Source: 4121638-21 Prepared & Analyzed: 12/17/24

Molybdenum	3.43	1.52	ng/m ³ Air		3.43			0.0588	10	
Nickel	ND	2.76	ng/m ³ Air		ND				10	U
Selenium	0.268	0.0380	ng/m ³ Air		0.252			6.15	10	
Thallium	0.00281	0.00250	ng/m ³ Air		ND			75.9	10	
Vanadium	1.18	0.224	ng/m ³ Air		1.10			7.42	10	
Zinc	ND	325	ng/m ³ Air		ND				10	U



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SITE CODE: Lahaina fires

Notes and Definitions

U	Under Detection Limit
SRD-01	Serial dilution exceeds the control limits.
SL	The spike recovery was outside acceptance limits. Reported value may be biased low.
QX	Compound does not meet QC criteria. Results should be considered an estimate.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD.
QB-04	Analyte exceeds continuing calibration blank criteria
QB-01	Analyte exceeds method blank criteria
LJ	Identification of analyte is acceptable; reported value is an estimate.
FB-01	Analyte exceeds Field Blank criteria.
ND	Analyte NOT DETECTED
NR	Not Reported
MDL	Method Detection Limit
RPD	Relative Percent Difference

Note: This test is accredited under the 2016 TNI Standard.

Stage 1 Data Verification Checklist – Metals
HDOH CAB – Ambient Community Air Sampling – Lahaina
Task Order No. 23141

Reviewed by:

Kierra Johnson 12/30/2024 and Shanna Vasser 01/03/2025

Laboratory: Eastern Research Group – Morrisville, NC

Collection date(s): 12/05/2024 – 12/11/2024

Report No: 4121638

- ✓ 1. Chain of custody (CoC) documentation is present.
- ✓ 2. Sample receipt condition information is present and acceptable.
- ✓ 3. Laboratory conducting the analysis is identified.
- ✓ 4. All samples submitted to the laboratory are accounted for.
- ✓ 5. Requested analytical methods were performed.
- ✓ 6. Analysis dates are provided.
- ✓ 7. Analyte results are provided.
- ✓ 8. Result qualifiers and definitions are provided.
- ✓ 9. Result units are reported.
- NA 10. Requested reporting limits are present.
- ✓ 11. Method detection limits are present.
- ✓ 12. Sample collection date and time are present.
- X 13. No detections in field QC blanks (lot/media blanks, field blanks, etc.).

Discrepancies:

- 13. Field blank detections above the method detection limit were reported for copper and molybdenum in MFL-FB01-120624-HM; for barium in MFL-LB01-120924-HM; and for arsenic, barium, and nickel in MFL-FB01-121024-HM.

Notes: None.