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

November 14 through November 20, 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 November 14 through November 20, 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 "PM_{10}". Monitoring for PM_{10} was conducted 24 hours a day, 7 days a week from November 14 through November 20 at each of the community locations. Ambient air monitoring results were compared to the National Ambient Air Quality Standard (NAAQS) for PM_{10}, 24-hour time-weighted average of 150 micrograms per cubic meter (µg/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 PM_{10} concentrations were collected at each of the four monitoring locations throughout this reporting period. Monitoring was conducted 24 hours a day at each station except for instances of equipment faults and maintenance, as described below:

- Because of an equipment fault, the air monitoring period was interrupted at WW Pump Station #4 (AM-02) for one hour on November 20, resulting in the collection of 23 hours of PM_{10} data

The equipment fault on November 20 was the result of a disruption during one sampling interval within the 24-hour sampling period. The error code provided by the equipment (256) indicated the first sample cycle was less than one hour, which can be caused by many different factors. This disruption resulted in a

shortened monitoring duration which reduced the time weighted average (TWA) calculation to 23-hours for that day.

None of the PM_{10} monitoring results exceeded the 150 µg/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 November 18
- WW Pump Station #4 on November 18 and 19
- Lahaina Recreational Center on November 18

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/m^3) for respirable dust, and 10 mg/m^3 and 15 mg/m^3 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 (PM_{10}) 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 1.3 miles per hour and were generally from a south-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.

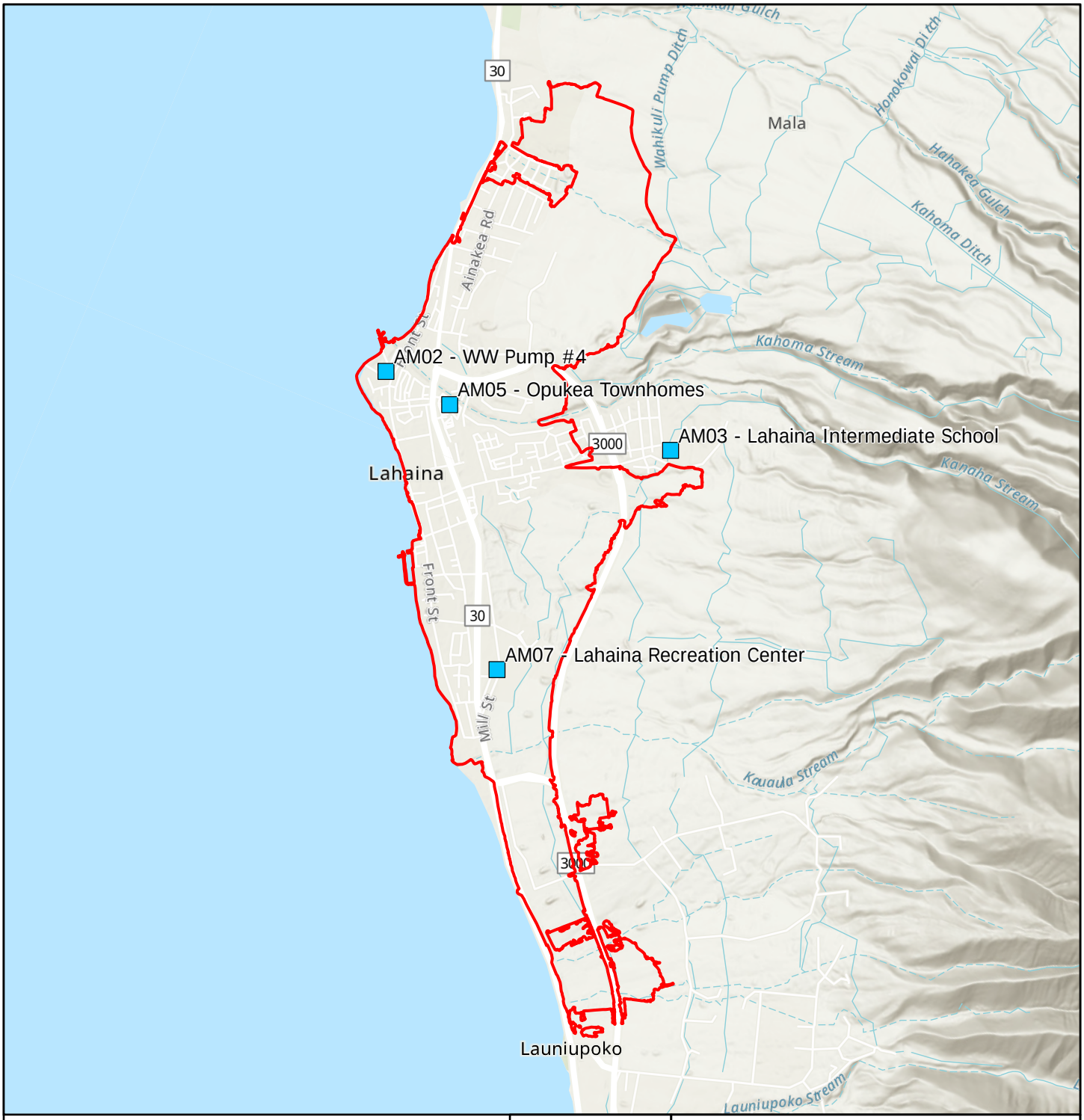
Sampling for metals occurred using Tisch Environmental High Volume Air Samplers (or equivalent) in accordance with the following methods:

- EPA Compendium Method IO-2.1, Sampling of Ambient Air for Total Suspended Particulate Matter (SPM) and for PM_{10} 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

N

0 0.3 0.6
Miles

TETRA TECH

Figure 1
Air Sampling Locations

Hawaii DOH
2023 Lahaina Wildfire

Basemap: ESRI ArcGIS World Street Map

Table 1
State of Hawaii, Department of Health, Clean Air Branch
Particulate Monitoring Results for PM_{10}
Maui Wildfires, Lahaina
November 14 through November 20, 2024

Screening Level		TWA Results 150 ($\mu g/m^3$)
11/14/2024	Opukea Townhomes (AM-05)	9.4
	WW Pump Station #4 (AM-02)	8.6
	Lahaina Intermediate School (AM-03)	104
	Lahaina Recreation Center (AM-07)	8.1
11/15/2024	Opukea Townhomes (AM-05)	10
	WW Pump Station #4 (AM-02)	8.7
	Lahaina Intermediate School (AM-03)	8.8
	Lahaina Recreation Center (AM-07)	8.4
11/16/2024	Opukea Townhomes (AM-05)	15
	WW Pump Station #4 (AM-02)	11
	Lahaina Intermediate School (AM-03)	13
	Lahaina Recreation Center (AM-07)	10
11/17/2024	Opukea Townhomes (AM-05)	10
	WW Pump Station #4 (AM-02)	7.9
	Lahaina Intermediate School (AM-03)	7.9
	Lahaina Recreation Center (AM-07)	7.1
11/18/2024	Opukea Townhomes (AM-05)	8.4
	WW Pump Station #4 (AM-02)	7.6
	Lahaina Intermediate School (AM-03)	6.6
	Lahaina Recreation Center (AM-07)	7.4
11/19/2024	Opukea Townhomes (AM-05)	9.6
	WW Pump Station #4 (AM-02)	8.0
	Lahaina Intermediate School (AM-03)	8.1
	Lahaina Recreation Center (AM-07)	6.7
11/20/2024	Opukea Townhomes (AM-05)	7.0
	WW Pump Station #4 (AM-02)	6.7*
	Lahaina Intermediate School (AM-03)	6.0
	Lahaina Recreation Center (AM-07)	5.9

Notes:
$\mu g/m^3$ = micrograms per cubic meter
TWA = 24-Hour Time-Weighted Average
TWA calculation results are shown in two significant figures
* Data provided were from a reduced (23-hr) TWA calculation because of an equipment fault

Table 2
State of Hawaii, Department of Health, Clean Air Branch
Asbestos and Metals Sampling Results
Maui Wildfires, Lahaina
November 14 through November 20, 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	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	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
11/14/2024	Opukea Townhomes (AM-05)	<0.0024	0.000117	0.000395	0.00659	0.0000287	ND	0.00488	0.00106	0.0289	0.000869	0.0287	0.00133	0.00335	0.000174	0.00000186	0.00310	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.000163	0.000831	0.00950	0.0000413	0.000139	0.00563	0.00146	0.0327	0.00305	0.0390	0.00109	0.00376	0.000201	0.00000207	0.00436	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000588	0.000149	0.00281	0.0000206	ND	0.00302	0.000380	0.0452	0.000435	0.00879	0.00217	0.00147	0.000131	0.000000893	0.000961	ND
	Lahaina Recreation Center (AM-07)	<0.0024	0.000110	0.000849	0.00585	0.0000311	ND	0.00452	0.00108	0.0146	0.000696	0.0365	0.000720	0.00248	0.000181	0.00000196	0.00285	ND
11/15/2024	Opukea Townhomes (AM-05)	<0.0024	0.000125	0.000295	0.00548	0.0000179	ND	0.00352	0.000713	0.0350	0.000577	0.0177	0.00192	0.00227	0.000217	0.00000115	0.00203	ND
	WW Pump Station #4 (AM-02)	<0.0027	0.000225	0.000531	0.00804	0.0000286	0.000149	0.00445	0.000996	0.0439	0.00146	0.0260	0.00165	0.00316	0.000238	0.00000139	0.00313	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000876	0.000117	0.00274	0.0000178	ND	0.00215	0.000325	0.0413	0.000341	0.00759	0.00237	0.00119	0.000209	0.000000699	0.000971	ND
	Lahaina Recreation Center (AM-07)	<0.0024	0.0000848	0.000593	0.00458	0.0000230	ND	0.00367	0.000808	0.0182	0.000386	0.0259	0.000926	0.00201	0.000224	0.00000131	0.00223	ND
11/16/2024	Opukea Townhomes (AM-05)	<0.0024	0.000165	0.000193	0.00524	0.0000141	ND	0.00238	0.000472	0.0392	0.000435	0.0134	0.00207	0.00140	0.000250	0.000000998	0.00153	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.000290	0.000855	0.00771	0.0000212	ND	0.00315	0.000735	0.0407	0.00152	0.0212	0.00183	0.00199	0.000264	0.00000137	0.00227	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.000136	0.0000845	0.00235	0.0000104	ND	ND	0.000224	0.0248	ND	0.00620	0.00152	0.000846	0.000178	0.000000553	0.000663	ND
	Lahaina Recreation Center (AM-07)	<0.0024	0.0000798	0.000189	0.00324	0.0000140	ND	0.00278	0.000368	0.0222	0.000251	0.0115	0.00110	0.00132	0.000225	0.000000820	0.00109	ND
11/17/2024	Opukea Townhomes (AM-05)	<0.0024	0.000125	0.000426	0.00635	0.0000288	ND	0.00441	0.000988	0.0458	0.00123	0.0271	0.00223	0.00249	0.000232	0.00000194	0.00275	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.000167	0.000690	0.00768	0.0000390	0.000606	0.00549	0.00124	0.0434	0.00212	0.0343	0.00117	0.00310	0.000243	0.00000214	0.00376	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000416	0.000322	0.00638	0.000164	ND	0.00932	0.00202	0.0395	0.000793	0.0421	0.00122	0.00517	0.000279	0.00000241	0.00524	ND
	Lahaina Recreation Center (AM-07)	<0.0024	0.000104	0.000489	0.00479	0.0000395	0.000416	0.00687	0.00138	0.0281	0.00111	0.0348	0.000808	0.00347	0.000235	0.00000186	0.00343	ND
11/18/2024	Opukea Townhomes (AM-05)	<0.0024	0.000114	0.000241	0.00396	0.0000143	ND	0.00562	0.000423	0.0475	0.000604	0.0132	0.00237	0.00146	0.000176	0.00000119	0.00138	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.000244	0.000248	0.00454	0.0000129	ND	0.00221	0.000438	0.0393	0.00229	0.0109	0.00172	0.00139	0.000179	0.000000874	0.00135	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000556	0.000103	0.00214	0.0000163	ND	0.00271	0.000286	0.0482	0.000261	0.00710	0.00214	0.00148	0.000168	0.000000865	0.000767	ND
	Lahaina Recreation Center (AM-07)	<0.0024	0.0000692	0.000327	0.00307	0.0000174	ND	0.00274	0.000560	0.0243	0.000293	0.0175	0.00100	0.00146	0.000177	0.00000120	0.00157	ND
11/19/2024	Opukea Townhomes (AM-05)	<0.0024	0.000194	0.000550	0.00630	0.0000198	ND	0.00354	0.000774	0.0487	0.000942	0.0185	0.00201	0.00237	0.000228	0.00000180	0.00243	ND
	WW Pump Station #4 (AM-02)	<0.0027	0.000307	0.000381	0.00776	0.0000243	ND	0.00432	0.000911	0.0422	0.000942	0.0228	0.00159	0.00287	0.000222	0.00000174	0.00307	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000795	0.000133	0.00279	0.0000168	ND	0.00241	0.000323	0.0581	0.000320	0.00829	0.00247	0.00143	0.000198	0.00000119	0.00103	ND
	Lahaina Recreation Center (AM-07)	<0.0024	0.000118	0.000429	0.00391	0.0000176	ND	0.00366	0.000584	0.0291	0.000342	0.0188	0.00128	0.00225	0.000208	0.00000151	0.00178	ND
11/20/2024	Opukea Townhomes (AM-05)	<0.0024	0.000148	0.000478	0.00473	0.0000146	ND	0.00254	0.000465	0.0423	0.00103	0.0133	0.00181	0.00172	0.000181	0.00000144	0.00151	ND
	WW Pump Station #4 (AM-02)	<0.0027	0.000184	0.000299	0.00628	0.0000214	ND	0.00293	0.000703	0.0398	0.000857	0.0203	0.00147	0.00195	0.000197	0.00000135	0.00250	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000651	0.000152	0.00280	0.0000219	ND	0.00275	0.000396	0.0570	0.000344	0.0104	0.00234	0.00164	0.000172	0.00000107	0.00112	ND
	Lahaina Recreation Center (AM-07)	<0.0024	0.0000691	0.000600	0.00427	0.0000234	ND	0.00320	0.000692	0.0280	0.000420	0.0242	0.00114	0.00181	0.000206	0.00000166	0.00207	ND
95% Upper Confidence Limit[2]		NA	0.000160	0.000530	0.00592	0.0000310	0.000593	0.00442	0.000920	0.0253	0.000119	0.0253	0.00185	0.00254	0.000220	0.00000160	0.00270	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
November 14, through November 20, 2024

Date	Station ID	Weather Station Name	Wind Speed (mph)	Wind Direction (angle)	Temperature (°F)	Rel Humidity (%)	Baro Pressure (mBar)
11/14/2024	AM-02	WW Pump Station #4	2.0	ESE	82	55	762.7
11/14/2024	AM-03	Lahaina Intermediate School	1.9	ESE	80	56	753.6
11/14/2024	AM-05	Opukea Townhomes	1.8	ESE	81	52	762.2
11/14/2024	AM-07	Lahaina Recreational Center	1.7	SSE	80	57	762.1
11/15/2024	AM-02	WW Pump Station #4	0.9	S	80	59	762.7
11/15/2024	AM-03	Lahaina Intermediate School	1.0	SE	78	57	753.6
11/15/2024	AM-05	Opukea Townhomes	1.0	SE	80	55	762.3
11/15/2024	AM-07	Lahaina Recreational Center	1.3	SSE	78	60	762.1
11/16/2024	AM-02	WW Pump Station #4	1.3	SSE	81	57	763.3
11/16/2024	AM-03	Lahaina Intermediate School	1.4	SE	78	56	754.1
11/16/2024	AM-05	Opukea Townhomes	1.2	SE	80	53	762.9
11/16/2024	AM-07	Lahaina Recreational Center	1.7	SSE	78	58	762.6
11/17/2024	AM-02	WW Pump Station #4	1.0	S	81	58	763.7
11/17/2024	AM-03	Lahaina Intermediate School	1.2	SSE	79	56	754.5
11/17/2024	AM-05	Opukea Townhomes	1.2	SE	80	54	763.3
11/17/2024	AM-07	Lahaina Recreational Center	1.8	SSW	79	58	763.0
11/18/2024	AM-02	WW Pump Station #4	1.0	S	80	63	763.4
11/18/2024	AM-03	Lahaina Intermediate School	1.1	SE	78	61	754.2
11/18/2024	AM-05	Opukea Townhomes	1.2	SE	79	60	762.9
11/18/2024	AM-07	Lahaina Recreational Center	1.4	SSE	78	64	762.7
11/19/2024	AM-02	WW Pump Station #4	0.9	S	79	67	762.3
11/19/2024	AM-03	Lahaina Intermediate School	1.1	ESE	77	66	753.2
11/19/2024	AM-05	Opukea Townhomes	1.2	SE	78	62	761.9
11/19/2024	AM-07	Lahaina Recreational Center	1.3	SE	77	68	761.7
11/20/2024	AM-02	WW Pump Station #4	1.0	SSE	78	58	761.7
11/20/2024	AM-03	Lahaina Intermediate School	1.1	ESE	77	54	752.5
11/20/2024	AM-05	Opukea Townhomes	1.3	ESE	77	55	761.2
11/20/2024	AM-07	Lahaina Recreational Center	1.4	SE	78	55	760.8

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.

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

EMSL Order:	042423952
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:	11/20/2024 10:00 AM
Analysis Date:	11/22/2024
Report Date:	11/26/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM05-111424-AB**		**Sample Description:**	**DL264110**
EMSL Sample Number:	042423952-0001		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7190.8
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):	0.0131
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 Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**

PCM EQUIVALENT (PCMe) Fibers
(>5 microns in length with >3:1 Aspect Ratio)

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**

Comment

Robyn Ray
Approved Signatory

EMSL Analytical, Inc.
200 Route 130 North Cinnaminson, NJ 08077
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EMSL Order ID: 042423952
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: 042423952-0001 **Customer Sample:** MFL-AM05-111424-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	J7	None Detected									
A5	H4	None Detected									
A5	C5	None Detected									
A6	G5	None Detected									
A6	C3	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:	042423952
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:	11/20/2024 10:00 AM
Analysis Date:	11/22/2024
Report Date:	11/26/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-111424-AB**		**Sample Description:**	**DL264118**
EMSL Sample Number:	042423952-0002		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7134.3
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):	0.0131
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 Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**

PCM EQUIVALENT (PCMe) Fibers
(>5 microns in length with >3:1 Aspect Ratio)

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**

Comment

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EMSL Order ID: 042423952
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: 042423952-0002 **Customer Sample:** MFL-AM02-111424-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	F4	None Detected									
B1	G9	None Detected									
B1	J6	None Detected									
B2	B7	None Detected									
B2	H9	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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Project: **Maui Fires Lahaina**

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Fax:	N/A
Received Date:	11/20/2024 10:00 AM
Analysis Date:	11/22/2024
Report Date:	11/26/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-111424-AB**	**Sample Description:**	**DL264142**
EMSL Sample Number:	042423952-0003	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L) :	7287.8
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):	0.0131
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 Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**

PCM EQUIVALENT (PCMe) Fibers
(>5 microns in length with >3:1 Aspect Ratio)

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 45.65**	**< 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: 042423952-0003 **Customer Sample:** MFL-AM03-111424-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	A6	None Detected									
B5	C5	None Detected									
B5	E8	None Detected									
B6	I2	None Detected									
B6	C3	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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Project: **Maui Fires Lahaina**

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Fax:	N/A
Received Date:	11/20/2024 10:00 AM
Analysis Date:	11/22/2024
Report Date:	11/26/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM07-111424-AB**	**Sample Description:**	**DL264201**
EMSL Sample Number:	042423952-0004	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L) :	7194.8
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):	0.0131
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 Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**

PCM EQUIVALENT (PCMe) Fibers
(>5 microns in length with >3:1 Aspect Ratio)

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**

Comment

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EMSL Order ID: 042423952
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: 042423952-0004 **Customer Sample:** MFL-AM07-111424-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	G3	None Detected									
C1	D2	None Detected									
C1	B6	None Detected									
C2	B5	None Detected									
C2	G7	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:	042423952
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

Attn: **Chelsea Saber**
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1560 Broadway, Suite 1400
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Project: **Maui Fires Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	11/20/2024 10:00 AM
Analysis Date:	11/22/2024
Report Date:	11/26/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-111424-AB** **Sample Description:** **DL264156**

EMSL Sample Number:	042423952-0005		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):	0.0131
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 Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	95 % Confidence Interval (S/cc) Upper
Total Chrysotile	**CD**	**0**	**0**	**< 22.82**			
Total Amphibole	**ADX**	**0**	**0**	**< 22.82**			
Actinolite	ADX	0	0	< 22.82			
Amosite	ADX	0	0	< 22.82			
Anthophyllite	ADX	0	0	< 22.82			
Crocidolite	ADX	0	0	< 22.82			
Tremolite	ADX	0	0	< 22.82			
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 22.82**			
Other Minerals	-	0	0	< 22.82			
Total All Structures	**-**	**0**	**0**	**< 22.82**			

PCM EQUIVALENT (PCMe) Fibers
(>5 microns in length with >3:1 Aspect Ratio)

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	95 % Confidence Interval (F/cc) Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 22.82**			
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 22.82**			
Actinolite	ADX	0	0	< 22.82			
Amosite	ADX	0	0	< 22.82			
Anthophyllite	ADX	0	0	< 22.82			
Crocidolite	ADX	0	0	< 22.82			
Tremolite	ADX	0	0	< 22.82			
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 22.82**			
Other Minerals	-	0	0	< 22.82			
Total All Structures (PCMe)	**-**	**0**	**0**	**< 22.82**			

Comment


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EMSL Order ID:	**042423952**
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: 042423952-0005 **Customer Sample:** MFL-FB01-111424-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	A8	None Detected									
C5	C7	None Detected									
C5	E8	None Detected									
C5	G9	None Detected									
C5	I10	None Detected									
C6	J4	None Detected									
C6	H6	None Detected									
C6	F4	None Detected									
C6	D1	None Detected									
C6	B5	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:	042423952
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

Attn: **Chelsea Saber**
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Fax:	N/A
Received Date:	11/20/2024 10:00 AM
Analysis Date:	11/22/2024
Report Date:	11/26/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM05-111524-AB**		**Sample Description:**	**DL264200**
EMSL Sample Number:	042423952-0006		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7164.0
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):	0.0131
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 Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**

PCM EQUIVALENT (PCMe) Fibers
(>5 microns in length with >3:1 Aspect Ratio)

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**

Comment

Robyn Ray
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EMSL Order ID: 042423952
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: 042423952-0006 **Customer Sample:** MFL-AM05-111524-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	J5	None Detected									
D1	G6	None Detected									
D1	D8	None Detected									
D2	B4	None Detected									
D2	F3	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:	042423952
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:	11/20/2024 10:00 AM
Analysis Date:	11/22/2024
Report Date:	11/26/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-111524-AB**		**Sample Description:**	**DL264141**
EMSL Sample Number:	042423952-0007		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	6424.9
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):	0.0131
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):	**0.0009**		**Limit of Detection (Structures/cc):**	**0.0027**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 45.65**	**< 0.0027**	**Not Applicable**	**0.0027**
Total Amphibole	**ADX**	**0**	**0**	**< 45.65**	**< 0.0027**	**Not Applicable**	**0.0027**
Actinolite	ADX	0	0	< 45.65	< 0.0027	Not Applicable	0.0027
Amosite	ADX	0	0	< 45.65	< 0.0027	Not Applicable	0.0027
Anthophyllite	ADX	0	0	< 45.65	< 0.0027	Not Applicable	0.0027
Crocidolite	ADX	0	0	< 45.65	< 0.0027	Not Applicable	0.0027
Tremolite	ADX	0	0	< 45.65	< 0.0027	Not Applicable	0.0027
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 45.65**	**< 0.0027**	**Not Applicable**	**0.0027**
Other Minerals	-	0	0	< 45.65	< 0.0027	Not Applicable	0.0027
Total All Structures	**-**	**0**	**0**	**< 45.65**	**< 0.0027**	**Not Applicable**	**0.0027**

PCM EQUIVALENT (PCMe) Fibers
(>5 microns in length with >3:1 Aspect Ratio)

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 45.65**	**< 0.0027**	**Not Applicable**	**0.0027**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 45.65**	**< 0.0027**	**Not Applicable**	**0.0027**
Actinolite	ADX	0	0	< 45.65	< 0.0027	Not Applicable	0.0027
Amosite	ADX	0	0	< 45.65	< 0.0027	Not Applicable	0.0027
Anthophyllite	ADX	0	0	< 45.65	< 0.0027	Not Applicable	0.0027
Crocidolite	ADX	0	0	< 45.65	< 0.0027	Not Applicable	0.0027
Tremolite	ADX	0	0	< 45.65	< 0.0027	Not Applicable	0.0027
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 45.65**	**< 0.0027**	**Not Applicable**	**0.0027**
Other Minerals	-	0	0	< 45.65	< 0.0027	Not Applicable	0.0027
Total All Structures (PCMe)	**-**	**0**	**0**	**< 45.65**	**< 0.0027**	**Not Applicable**	**0.0027**

Comment

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EMSL Order ID: 042423952
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: 042423952-0007 **Customer Sample:** MFL-AM02-111524-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	J8	None Detected									
D5	G8	None Detected									
D5	D7	None Detected									
D6	I5	None Detected									
D6	E4	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:	11/20/2024 10:00 AM
Analysis Date:	11/22/2024
Report Date:	11/26/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-111524-AB**	**Sample Description:**	**DL264130**
EMSL Sample Number:	042423952-0008	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L) :	7197.1
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):	0.0131
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 Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**

PCM EQUIVALENT (PCMe) Fibers
(>5 microns in length with >3:1 Aspect Ratio)

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 45.65**	**< 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: 042423952-0008 **Customer Sample:** MFL-AM03-111524-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	A7	None Detected									
E1	C10	None Detected									
E1	F7	None Detected									
E2	I5	None Detected									
E2	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 ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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Received Date:	11/20/2024 10:00 AM
Analysis Date:	11/22/2024
Report Date:	11/26/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM07-111524-AB**	**Sample Description:**	**DL264140**
EMSL Sample Number:	042423952-0009	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L) :	7212.8
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):	0.0131
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 Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**

PCM EQUIVALENT (PCMe) Fibers
(>5 microns in length with >3:1 Aspect Ratio)

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**

Comment

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EMSL Order ID: 042423952
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: 042423952-0009 **Customer Sample:** MFL-AM07-111524-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	A6	None Detected									
E5	D5	None Detected									
E5	H3	None Detected									
E6	H8	None Detected									
E6	D9	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:	042423952
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

Attn: **Chelsea Saber**
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Project: **Maui Fires Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	11/20/2024 10:00 AM
Analysis Date:	11/22/2024
Report Date:	11/26/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-111524-AB** **Sample Description: DL264133**

EMSL Sample Number:	042423952-0010		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):	0.0131
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 Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	95 % Confidence Interval (S/cc) Upper
Total Chrysotile	**CD**	**0**	**0**	**< 22.82**			
Total Amphibole	**ADX**	**0**	**0**	**< 22.82**			
Actinolite	ADX	0	0	< 22.82			
Amosite	ADX	0	0	< 22.82			
Anthophyllite	ADX	0	0	< 22.82			
Crocidolite	ADX	0	0	< 22.82			
Tremolite	ADX	0	0	< 22.82			
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 22.82**			
Other Minerals	-	0	0	< 22.82			
Total All Structures	**-**	**0**	**0**	**< 22.82**			

PCM EQUIVALENT (PCMe) Fibers
(>5 microns in length with >3:1 Aspect Ratio)

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	95 % Confidence Interval (F/cc) Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 22.82**			
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 22.82**			
Actinolite	ADX	0	0	< 22.82			
Amosite	ADX	0	0	< 22.82			
Anthophyllite	ADX	0	0	< 22.82			
Crocidolite	ADX	0	0	< 22.82			
Tremolite	ADX	0	0	< 22.82			
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 22.82**			
Other Minerals	-	0	0	< 22.82			
Total All Structures (PCMe)	**-**	**0**	**0**	**< 22.82**			

Comment

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EMSL Order ID:	**042423952**
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: 042423952-0010 **Customer Sample:** MFL-FB01-111524-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	A1	None Detected									
F2	C3	None Detected									
F2	E3	None Detected									
F2	G4	None Detected									
F2	I7	None Detected									
F3	A2	None Detected									
F3	C3	None Detected									
F3	E4	None Detected									
F3	G2	None Detected									
F3	I6	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:	042423952
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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Received Date:	11/20/2024 10:00 AM
Analysis Date:	11/22/2024
Report Date:	11/26/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM05-111624-AB** **Sample Description: DL264154**

EMSL Sample Number:	042423952-0011		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	6925.1
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):	0.0131
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 Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**

PCM EQUIVALENT (PCMe) Fibers
(>5 microns in length with >3:1 Aspect Ratio)

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**

Comment

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EMSL Order ID: 042423952
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: 042423952-0011 **Customer Sample:** MFL-AM05-111624-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					
F6	J6	None Detected									
F6	G3	None Detected									
F6	D5	None Detected									
F7	F1	None Detected									
F7	A3	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:	042423952
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

Attn: **Chelsea Saber**
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Project: **Maui Fires Lahaina**

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Fax:	N/A
Received Date:	11/20/2024 10:00 AM
Analysis Date:	11/22/2024
Report Date:	11/26/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-111624-AB**	**Sample Description:**	**DL264155**
EMSL Sample Number:	042423952-0012	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L) :	7051.0
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):	0.0131
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 Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**

PCM EQUIVALENT (PCMe) Fibers
(>5 microns in length with >3:1 Aspect Ratio)

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**

Comment

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EMSL Order ID: 042423952
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: 042423952-0012 **Customer Sample:** MFL-AM02-111624-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	B7	None Detected									
G1	E9	None Detected									
G1	H6	None Detected									
G2	C6	None Detected									
G2	H5	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:	042423952
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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Received Date:	11/20/2024 10:00 AM
Analysis Date:	11/22/2024
Report Date:	11/26/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-111624-AB**		**Sample Description:**	**DL264138**
EMSL Sample Number:	042423952-0013		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7127.9
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):	0.0131
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 Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**

PCM EQUIVALENT (PCMe) Fibers
(>5 microns in length with >3:1 Aspect Ratio)

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 45.65**	**< 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: 042423952-0013 **Customer Sample:** MFL-AM03-111624-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	B6	None Detected									
G5	E2	None Detected									
G5	F7	None Detected									
G6	A5	None Detected									
G6	J2	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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Project: **Maui Fires Lahaina**

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Fax:	N/A
Received Date:	11/20/2024 10:00 AM
Analysis Date:	11/22/2024
Report Date:	11/26/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM07-111624-AB** **Sample Description: DL264125**

EMSL Sample Number:	042423952-0014		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7197.7
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):	0.0131
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 Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**

PCM EQUIVALENT (PCMe) Fibers
(>5 microns in length with >3:1 Aspect Ratio)

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 45.65**	**< 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: 042423952-0014 **Customer Sample:** MFL-AM07-111624-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	H9	None Detected									
H1	E7	None Detected									
H1	D3	None Detected									
H2	B8	None Detected									
H2	F7	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:	042423952
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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Analysis Date:	11/22/2024
Report Date:	11/26/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-111624-AB** **Sample Description:** **DL264083**

EMSL Sample Number:	042423952-0015		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 (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0131
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 Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	95 % Confidence Interval (S/cc) Upper
Total Chrysotile	**CD**	**0**	**0**	**< 22.82**			
Total Amphibole	**ADX**	**0**	**0**	**< 22.82**			
Actinolite	ADX	0	0	< 22.82			
Amosite	ADX	0	0	< 22.82			
Anthophyllite	ADX	0	0	< 22.82			
Crocidolite	ADX	0	0	< 22.82			
Tremolite	ADX	0	0	< 22.82			
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 22.82**			
Other Minerals	-	0	0	< 22.82			
Total All Structures	**-**	**0**	**0**	**< 22.82**			

PCM EQUIVALENT (PCMe) Fibers
(>5 microns in length with >3:1 Aspect Ratio)

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	95 % Confidence Interval (F/cc) Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 22.82**			
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 22.82**			
Actinolite	ADX	0	0	< 22.82			
Amosite	ADX	0	0	< 22.82			
Anthophyllite	ADX	0	0	< 22.82			
Crocidolite	ADX	0	0	< 22.82			
Tremolite	ADX	0	0	< 22.82			
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 22.82**			
Other Minerals	-	0	0	< 22.82			
Total All Structures (PCMe)	**-**	**0**	**0**	**< 22.82**			

Comment

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EMSL Order ID: 042423952
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: 042423952-0015 **Customer Sample:** MFL-FB01-111624-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	J2	None Detected									
H5	H5	None Detected									
H5	F1	None Detected									
H5	D5	None Detected									
H5	B4	None Detected									
H6	A7	None Detected									
H6	C8	None Detected									
H6	E3	None Detected									
H6	G7	None Detected									
H6	I8	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:	042423952
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

Attn: **Chelsea Saber**
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Received Date:	11/20/2024 10:00 AM
Analysis Date:	11/22/2024
Report Date:	11/26/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM05-111724-AB** **Sample Description: DL264073**

EMSL Sample Number:	042423952-0016		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	6931.9
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):	0.0131
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 Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**

PCM EQUIVALENT (PCMe) Fibers
(>5 microns in length with >3:1 Aspect Ratio)

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**

Comment

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EMSL Order ID: 042423952
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: 042423952-0016 **Customer Sample:** MFL-AM05-111724-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	A7	None Detected									
I2	D4	None Detected									
I2	H8	None Detected									
I3	D8	None Detected									
I3	I6	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:	042423952
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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Project: **Maui Fires Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	11/20/2024 10:00 AM
Analysis Date:	11/22/2024
Report Date:	11/26/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-111724-AB**	**Sample Description:**	**DL264120**
EMSL Sample Number:	042423952-0017	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L) :	7082.2
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):	0.0131
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 Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**

PCM EQUIVALENT (PCMe) Fibers
(>5 microns in length with >3:1 Aspect Ratio)

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**

Comment

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EMSL Order ID: 042423952
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: 042423952-0017 **Customer Sample:** MFL-AM02-111724-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	H6	None Detected									
I5	F8	None Detected									
I5	D4	None Detected									
I6	C7	None Detected									
I6	I5	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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Received Date:	11/20/2024 10:00 AM
Analysis Date:	11/22/2024
Report Date:	11/26/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-111724-AB**	**Sample Description:**	**DL264076**
EMSL Sample Number:	042423952-0018	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L) :	7342.2
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):	0.0131
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 Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**

PCM EQUIVALENT (PCMe) Fibers
(>5 microns in length with >3:1 Aspect Ratio)

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 45.65**	**< 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: 042423952-0018 **Customer Sample:** MFL-AM03-111724-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	B6	None Detected									
J1	D7	None Detected									
J1	G7	None Detected									
J2	C8	None Detected									
J2	H6	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:	11/20/2024 10:00 AM
Analysis Date:	11/22/2024
Report Date:	11/26/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM07-111724-AB**	**Sample Description:**	**DL264070**
EMSL Sample Number:	042423952-0019	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L) :	7255.9
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):	0.0131
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 Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**

PCM EQUIVALENT (PCMe) Fibers
(>5 microns in length with >3:1 Aspect Ratio)

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 45.65**	**< 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: 042423952-0019 **Customer Sample:** MFL-AM07-111724-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	A8	None Detected									
J5	E10	None Detected									
J5	H7	None Detected									
J6	D7	None Detected									
J6	G3	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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Received Date:	11/20/2024 10:00 AM
Analysis Date:	11/22/2024
Report Date:	11/26/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-111724-AB** **Sample Description: DL264119**

EMSL Sample Number:	042423952-0020		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 (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0131
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 Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	95 % Confidence Interval (S/cc) Upper
Total Chrysotile	**CD**	**0**	**0**	**< 22.82**			
Total Amphibole	**ADX**	**0**	**0**	**< 22.82**			
Actinolite	ADX	0	0	< 22.82			
Amosite	ADX	0	0	< 22.82			
Anthophyllite	ADX	0	0	< 22.82			
Crocidolite	ADX	0	0	< 22.82			
Tremolite	ADX	0	0	< 22.82			
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 22.82**			
Other Minerals	-	0	0	< 22.82			
Total All Structures	**-**	**0**	**0**	**< 22.82**			

PCM EQUIVALENT (PCMe) Fibers
(>5 microns in length with >3:1 Aspect Ratio)

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	95 % Confidence Interval (F/cc) Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 22.82**			
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 22.82**			
Actinolite	ADX	0	0	< 22.82			
Amosite	ADX	0	0	< 22.82			
Anthophyllite	ADX	0	0	< 22.82			
Crocidolite	ADX	0	0	< 22.82			
Tremolite	ADX	0	0	< 22.82			
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 22.82**			
Other Minerals	-	0	0	< 22.82			
Total All Structures (PCMe)	**-**	**0**	**0**	**< 22.82**			

Comment

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EMSL Order ID: 042423952
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: 042423952-0020 **Customer Sample:** MFL-FB01-111724-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	A4	None Detected									
K1	C6	None Detected									
K1	E3	None Detected									
K1	G3	None Detected									
K1	I5	None Detected									
K2	J7	None Detected									
K2	H9	None Detected									
K2	F7	None Detected									
K2	D4	None Detected									
K2	B4	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:	042423952
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:	11/20/2024 10:00 AM
Analysis Date:	11/22/2024
Report Date:	11/26/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-LB01-111624-AB** **Sample Description: DL264063**

EMSL Sample Number:	042423952-0021		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):	0.0131
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 Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	95 % Confidence Interval (S/cc) Upper
Total Chrysotile	**CD**	**0**	**0**	**< 22.82**			
Total Amphibole	**ADX**	**0**	**0**	**< 22.82**			
Actinolite	ADX	0	0	< 22.82			
Amosite	ADX	0	0	< 22.82			
Anthophyllite	ADX	0	0	< 22.82			
Crocidolite	ADX	0	0	< 22.82			
Tremolite	ADX	0	0	< 22.82			
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 22.82**			
Other Minerals	-	0	0	< 22.82			
Total All Structures	**-**	**0**	**0**	**< 22.82**			

PCM EQUIVALENT (PCMe) Fibers
(>5 microns in length with >3:1 Aspect Ratio)

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	95 % Confidence Interval (F/cc) Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 22.82**			
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 22.82**			
Actinolite	ADX	0	0	< 22.82			
Amosite	ADX	0	0	< 22.82			
Anthophyllite	ADX	0	0	< 22.82			
Crocidolite	ADX	0	0	< 22.82			
Tremolite	ADX	0	0	< 22.82			
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 22.82**			
Other Minerals	-	0	0	< 22.82			
Total All Structures (PCMe)	**-**	**0**	**0**	**< 22.82**			

Comment

Approved Signatory

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

EMSL Order ID:	**042423952**
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: 042423952-0021 **Customer Sample:** MFL-LB01-111624-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					
K5	J7	None Detected									
K5	H5	None Detected									
K5	F7	None Detected									
K5	D5	None Detected									
K5	B6	None Detected									
K6	A7	None Detected									
K6	C8	None Detected									
K6	E3	None Detected									
K6	G6	None Detected									
K6	I4	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 / cinnasblab@EMSL.com

EMSL Order:	042423952
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:	11/20/2024 10:00 AM
Analysis Date:	11/22/2024
Report Date:	11/26/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **Lab Blank** **Sample Description:** **Lab Blank**

EMSL Sample Number:	042423952-0022		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):	0.0131
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 Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	95 % Confidence Interval (S/cc) Upper
Total Chrysotile	**CD**	**0**	**0**	**< 22.82**			
Total Amphibole	**ADX**	**0**	**0**	**< 22.82**			
Actinolite	ADX	0	0	< 22.82			
Amosite	ADX	0	0	< 22.82			
Anthophyllite	ADX	0	0	< 22.82			
Crocidolite	ADX	0	0	< 22.82			
Tremolite	ADX	0	0	< 22.82			
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 22.82**			
Other Minerals	-	0	0	< 22.82			
Total All Structures	**-**	**0**	**0**	**< 22.82**			

PCM EQUIVALENT (PCMe) Fibers
(>5 microns in length with >3:1 Aspect Ratio)

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	95 % Confidence Interval (F/cc) Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 22.82**			
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 22.82**			
Actinolite	ADX	0	0	< 22.82			
Amosite	ADX	0	0	< 22.82			
Anthophyllite	ADX	0	0	< 22.82			
Crocidolite	ADX	0	0	< 22.82			
Tremolite	ADX	0	0	< 22.82			
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 22.82**			
Other Minerals	-	0	0	< 22.82			
Total All Structures (PCMe)	**-**	**0**	**0**	**< 22.82**			

Comment

Robyn Ray
Approved Signatory

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

EMSL Order ID: 042423952
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: 042423952-0022 **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	B10	None Detected									
A1	D6	None Detected									
A1	F8	None Detected									
A1	H9	None Detected									
A1	J6	None Detected									
A2	J9	None Detected									
A2	H6	None Detected									
A2	F2	None Detected									
A2	D4	None Detected									
A2	B6	None Detected									

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

OrderID: 042423952

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL Order Number / Lab Use Only: 042423952

RECEIVED EMSL CINNAMINSON, NJ 24 NOV 20 PM 12:11

EMSL Analytical, Inc.
200 Route 130 North
Cinnaminson, NJ 08077
PHONE: (800) 220-3675
EMAIL: CinnAslab@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:
Company Name: Tetra Tech
Contact Name: Chelsea Saber
Street Address: 1560 Broadway STE 1400
City, State, Zip: Denver, CO 80202 Country: USA
Phone: (303) 489-2674
Email(s) for Report: Chelsea.saber@tetratech.com

Billing Information

Billing ID:
Company Name:
Billing Contact:
Street Address:
City, State, Zip: Country:
Phone:
Email(s) for Invoice:

Project Information

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: ☐ Commercial (Taxable) ☐ Residential (Non-Taxable)
Sampled By Name: Nicholas Keefe
Sampled By Signature:
No. of Samples in Shipment

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

PCM Air
- ☐ NIOSH 7400
- ☐ NIOSH 7400 w/ 8hr. TWA

PLM - Bulk (reporting limit)
- ☐ PLM EPA 600/R-93/116 (<1%)
- ☐ PLM EPA NOB (<1%)
- ☐ POINT COUNT ☐ 400 (<0.25%) ☐ 1,000 (<0.1%)
- POINT COUNT w/ GRAVIMETRIC ☐ 400 (<0.25%) ☐ 1,000 (<0.1%)
- ☐ NIOSH 9002 (<1%)
- ☐ NYS 198.1 (Friable - NY)
- ☐ NYS 198.6 NOB (Non-Friable - NY)
- ☐ NYS 198.8 (Vermiculite SM-V)

TEM - Air
- ☐ AHERA 40 CFR, Part 763
- ☐ NIOSH 7402
- ☐ EPA Level II
- ☒ ISO 10312*

TEM - Bulk
- ☐ TEM EPA NOB
- ☐ NYS NOB 198.4 (Non-Friable-NY)
- ☐ TEM EPA 600/R-93/116 w Milling Prep (0.1%)

Other Test (please specify)

TEM - Settled Dust
- ☐ Microvac - ASTM D5755
- ☐ Wipe - ASTM D6480
- ☐ Qualitative via Filtration Prep
- ☐ Qualitative via Drop Mount Prep

Soil - Rock - Vermiculite (reporting limit)*
- ☐ PLM EPA 600/R-93/116 with milling prep (<0.25%)
- ☐ PLM EPA 600/R-93/116 with milling prep (<0.1%)
- ☐ TEM EPA 600/R-93/116 with milling prep (<0.1%)
- ☐ TEM Qualitative via Filtration Prep
- ☐ 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-AM05-111424-AB	DL264110	7190.821	11/14/24 1103
MFL-AM02-111424-AB	DL264118	7134.335	11/14/24 1118
MFL-AM03-111424-AB	DL264142	7287.844	11/14/24 1252
MFL-AM07-111424-AB	DL264201	7194.791	11/14/24 1310
MFL-FB01-111424-AB	DL264156	0	11/14/24 1200
MFL-AM05-111524-AB	DL264200	7164.015	11/15/24 1056
MFL-AM02-111524-AB	DL264141	6424.918	11/15/24 1115
MFL-AM03-111524-AB	DL264130	7197.120	11/15/24 1254

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:	Date/Time: 11/18/24 8:30	Received by:	Date/Time 11/20/24 1215
Relinquished by:	Date/Time:	Received by:	Date/Time

Controlled Document - COC-05 Asbestos R16 10/26/2021

☐ 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.

OrderID: 042423952

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL Order Number / Lab Use Only

042423952

EMSL Analytical, Inc.
200 Route 130 North
Cinnaminson, NJ 08077
PHONE: (800) 220-3675
EMAIL: CinnAsblab@EMSL.com

Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

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

Sample Number	Sample Location / Description	Volume, Area or Homogeneous Area	Date / Time Sampled (Air Monitoring Only)
MFL-AM07-111524-AB	DL264140	7212.844	11/15/24 1312
MFL-FB01-111524-AB	DL264133	0	11/15/24 1208
MFL-AM05-111624-AB	DL264154	6925.133	11/16/24 1058
MFL-AM02-111624-AB	DL264155	7050.972	11/16/24 1115
MFL-AM03-111624-AB	DL264138	7127.865	11/16/24 1244
MFL-AM07-111624-AB	DL264125	7197.717	11/16/24 1312
MFL-FB01-111624-AB	DL264083	0	11/16/24 1200
MFL-AM05-111724-AB	DL264073	6931.882	11/17/24 1056
MFL-AM02-111724-AB	DL264120	7082.182	11/17/24 1109
MFL-AM03-111724-AB	DL264076	7342.190	11/17/24 1251
MFL-AM07-111724-AB	DL264070	7255.944	11/17/24 1313
MFL-FB01-111724-AB	DL264119	0	11/17/24 1206
MFL-LB01-111624-AB	DL264063	0	11/16/24 1205

Method of Shipment: FEDEX		Sample Condition Upon Receipt:	
Relinquished by:	Date/Time: 11/18/24 0830	Received by:	Date/Time
Relinquished by:	Date/Time:	Received by:	Date/Time

Controlled Document - COC-05 Asbestos R16 10/26/2021

☐ 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 11/26/2024 and Shanna Vasser 12/2/2024
Laboratory: EMSL Analytical, Inc. – North Cinnaminson, NJ
Collection date(s): 11/14/2024 – 11/17/2024
Report No: 42423952

√	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.

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

EMSL Order:	042424238
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:	11/25/2024 09:20 AM
Analysis Date:	11/29/2024
Report Date:	12/02/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM05-111824-AB**		**Sample Description:**	**DL264091**
EMSL Sample Number:	042424238-0001		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7199.2
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):	0.0131
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	G.Barry
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 Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**

PCM EQUIVALENT (PCMe) Fibers
(>5 microns in length with >3:1 Aspect Ratio)

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**

Comment

Numerous gypsum fibers present.

Approved Signatory

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

EMSL Order ID: 042424238
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: 042424238-0001 **Customer Sample:** MFL-AM05-111824-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	A8	None Detected									
A5	E4	None Detected									
A5	I6	None Detected									
A6	B4	None Detected									
A6	G6	None Detected									

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

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

EMSL Order:	042424238
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:	11/25/2024 09:20 AM
Analysis Date:	11/29/2024
Report Date:	12/02/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-111824-AB**	**Sample Description:**	**DL264060**
EMSL Sample Number:	042424238-0002	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L) :	7134.6
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):	0.0131
Chi^2 Test for Random Distribution on Filter:	N/A *(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD	Analyst:	G.Barry
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 Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**

PCM EQUIVALENT (PCMe) Fibers
(>5 microns in length with >3:1 Aspect Ratio)

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**

Comment

Numerous gypsum fibers present.

Robyn Ray
Approved Signatory

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EMSL Order ID: 042424238
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: 042424238-0002 **Customer Sample:** MFL-AM02-111824-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	C7	None Detected									
B1	E4	None Detected									
B1	J7	None Detected									
B2	B5	None Detected									
B2	D2	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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Received Date:	11/25/2024 09:20 AM
Analysis Date:	11/29/2024
Report Date:	12/02/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-111824-AB**	**Sample Description:**	**DL264104**
EMSL Sample Number:	042424238-0003	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L) :	7230.6
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):	0.0131
Chi^2 Test for Random Distribution on Filter:	N/A *(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD	Analyst:	G.Barry
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 Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**

PCM EQUIVALENT (PCMe) Fibers
(>5 microns in length with >3:1 Aspect Ratio)

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**

Comment

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EMSL Order ID: 042424238
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: 042424238-0003 **Customer Sample:** MFL-AM03-111824-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	I8	None Detected									
B5	G4	None Detected									
B5	D7	None Detected									
B6	A6	None Detected									
B6	F4	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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Project: **Maui Fires Lahaina**

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Analysis Date:	11/29/2024
Report Date:	12/02/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM07-111824-AB**	**Sample Description:**	**DL264094**
EMSL Sample Number:	042424238-0004	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L) :	7219.2
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):	0.0131
Chi^2 Test for Random Distribution on Filter:	N/A *(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD	Analyst:	G.Barry
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 Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**

PCM EQUIVALENT (PCMe) Fibers
(>5 microns in length with >3:1 Aspect Ratio)

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**

Comment

Numerous gypsum fibers present.

Robyn Ray
Approved Signatory

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EMSL Order ID:	**042424238**
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: 042424238-0004 **Customer Sample:** MFL-AM07-111824-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	H8	None Detected									
C1	F3	None Detected									
C1	D6	None Detected									
C2	A9	None Detected									
C2	A4	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:	11/25/2024 09:20 AM
Analysis Date:	11/29/2024
Report Date:	12/02/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-FB01-111824-AB**		**Sample Description:**	**DL264062**
EMSL Sample Number:	042424238-0005		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):	0.0131
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	G.Barry
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 Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	95 % Confidence Interval (S/cc) Upper
Total Chrysotile	**CD**	**0**	**0**	**< 22.82**			
Total Amphibole	**ADX**	**0**	**0**	**< 22.82**			
Actinolite	ADX	0	0	< 22.82			
Amosite	ADX	0	0	< 22.82			
Anthophyllite	ADX	0	0	< 22.82			
Crocidolite	ADX	0	0	< 22.82			
Tremolite	ADX	0	0	< 22.82			
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 22.82**			
Other Minerals	-	0	0	< 22.82			
Total All Structures	**-**	**0**	**0**	**< 22.82**			

PCM EQUIVALENT (PCMe) Fibers
(>5 microns in length with >3:1 Aspect Ratio)

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	95 % Confidence Interval (F/cc) Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 22.82**			
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 22.82**			
Actinolite	ADX	0	0	< 22.82			
Amosite	ADX	0	0	< 22.82			
Anthophyllite	ADX	0	0	< 22.82			
Crocidolite	ADX	0	0	< 22.82			
Tremolite	ADX	0	0	< 22.82			
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 22.82**			
Other Minerals	-	0	0	< 22.82			
Total All Structures (PCMe)	**-**	**0**	**0**	**< 22.82**			

Comment

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EMSL Order ID: 042424238
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: 042424238-0005 **Customer Sample:** MFL-FB01-111824-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	J6	None Detected									
C5	G3	None Detected									
C5	E7	None Detected									
C5	B4	None Detected									
C6	I3	None Detected									
C6	F4	None Detected									
C6	A3	None Detected									
C7	H7	None Detected									
C7	G2	None Detected									
C7	C5	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:	12/02/2024
Report Date:	12/02/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM05-111924-AB**	**Sample Description:**	**DL264075**
EMSL Sample Number:	042424238-0006	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L) :	7147.5
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):	0.0131
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 Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**

PCM EQUIVALENT (PCMe) Fibers
(>5 microns in length with >3:1 Aspect Ratio)

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**

Comment

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EMSL Order ID: 042424238
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: 042424238-0006 **Customer Sample:** MFL-AM05-111924-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	I5	None Detected									
D2	D6	None Detected									
D2	A9	None Detected									
D3	H7	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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EMSL Order:	042424238
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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Analysis Date:	12/02/2024
Report Date:	12/02/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-111924-AB**	**Sample Description:**	**DL264099**
EMSL Sample Number:	042424238-0007	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L) :	6760.9
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):	0.0131
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 Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 45.65**	**< 0.0027**	**Not Applicable**	**0.0027**
Total Amphibole	**ADX**	**0**	**0**	**< 45.65**	**< 0.0027**	**Not Applicable**	**0.0027**
Actinolite	ADX	0	0	< 45.65	< 0.0027	Not Applicable	0.0027
Amosite	ADX	0	0	< 45.65	< 0.0027	Not Applicable	0.0027
Anthophyllite	ADX	0	0	< 45.65	< 0.0027	Not Applicable	0.0027
Crocidolite	ADX	0	0	< 45.65	< 0.0027	Not Applicable	0.0027
Tremolite	ADX	0	0	< 45.65	< 0.0027	Not Applicable	0.0027
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 45.65**	**< 0.0027**	**Not Applicable**	**0.0027**
Other Minerals	-	0	0	< 45.65	< 0.0027	Not Applicable	0.0027
Total All Structures	**-**	**0**	**0**	**< 45.65**	**< 0.0027**	**Not Applicable**	**0.0027**

PCM EQUIVALENT (PCMe) Fibers
(>5 microns in length with >3:1 Aspect Ratio)

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 45.65**	**< 0.0027**	**Not Applicable**	**0.0027**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 45.65**	**< 0.0027**	**Not Applicable**	**0.0027**
Actinolite	ADX	0	0	< 45.65	< 0.0027	Not Applicable	0.0027
Amosite	ADX	0	0	< 45.65	< 0.0027	Not Applicable	0.0027
Anthophyllite	ADX	0	0	< 45.65	< 0.0027	Not Applicable	0.0027
Crocidolite	ADX	0	0	< 45.65	< 0.0027	Not Applicable	0.0027
Tremolite	ADX	0	0	< 45.65	< 0.0027	Not Applicable	0.0027
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 45.65**	**< 0.0027**	**Not Applicable**	**0.0027**
Other Minerals	-	0	0	< 45.65	< 0.0027	Not Applicable	0.0027
Total All Structures (PCMe)	**-**	**0**	**0**	**< 45.65**	**< 0.0027**	**Not Applicable**	**0.0027**

Comment

Numerous gypsum fibers present.

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EMSL Order ID: 042424238
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: 042424238-0007 **Customer Sample:** MFL-AM02-111924-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	F3	None Detected									
D5	J3	None Detected									
D6	B4	None Detected									
D6	H6	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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Project: **Maui Fires Lahaina**

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Received Date:	11/25/2024 09:20 AM
Analysis Date:	12/02/2024
Report Date:	12/02/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-111924-AB**	**Sample Description:**	**DL264074**
EMSL Sample Number:	042424238-0008	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L) :	7209.2
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):	0.0131
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 Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**

PCM EQUIVALENT (PCMe) Fibers
(>5 microns in length with >3:1 Aspect Ratio)

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 45.65**	**< 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: 042424238-0008 **Customer Sample:** MFL-AM03-111924-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					
E3	C8	None Detected									
E3	F10	None Detected									
E3	I6	None Detected									
E4	H3	None Detected									
E4	E8	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:	12/02/2024
Report Date:	12/02/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM07-111924-AB**	**Sample Description:**	**DL264069**
EMSL Sample Number:	042424238-0009	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L) :	7186.9
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):	0.0131
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 Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**

PCM EQUIVALENT (PCMe) Fibers
(>5 microns in length with >3:1 Aspect Ratio)

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 45.65**	**< 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: 042424238-0009 **Customer Sample:** MFL-AM07-111924-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	E8	None Detected									
F5	D6	None Detected									
F5	B2	None Detected									
F6	C9	None Detected									
F6	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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Received Date:	11/25/2024 09:20 AM
Analysis Date:	12/02/2024
Report Date:	12/02/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-111924-AB** **Sample Description:** **DL264100**

EMSL Sample Number:	042424238-0010		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):	0.0131
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 Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	95 % Confidence Interval (S/cc) Upper
Total Chrysotile	**CD**	**0**	**0**	**< 22.82**			
Total Amphibole	**ADX**	**0**	**0**	**< 22.82**			
Actinolite	ADX	0	0	< 22.82			
Amosite	ADX	0	0	< 22.82			
Anthophyllite	ADX	0	0	< 22.82			
Crocidolite	ADX	0	0	< 22.82			
Tremolite	ADX	0	0	< 22.82			
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 22.82**			
Other Minerals	-	0	0	< 22.82			
Total All Structures	**-**	**0**	**0**	**< 22.82**			

PCM EQUIVALENT (PCMe) Fibers
(>5 microns in length with >3:1 Aspect Ratio)

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	95 % Confidence Interval (F/cc) Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 22.82**			
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 22.82**			
Actinolite	ADX	0	0	< 22.82			
Amosite	ADX	0	0	< 22.82			
Anthophyllite	ADX	0	0	< 22.82			
Crocidolite	ADX	0	0	< 22.82			
Tremolite	ADX	0	0	< 22.82			
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 22.82**			
Other Minerals	-	0	0	< 22.82			
Total All Structures (PCMe)	**-**	**0**	**0**	**< 22.82**			

Comment

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EMSL Order ID:	**042424238**
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: 042424238-0010 **Customer Sample:** MFL-FB01-111924-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					
F3	A5	None Detected									
F3	C6	None Detected									
F3	E8	None Detected									
F3	G6	None Detected									
F3	I3	None Detected									
F4	A4	None Detected									
F4	C6	None Detected									
F4	E9	None Detected									
F4	G6	None Detected									
F4	I1	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:	12/02/2024
Report Date:	12/02/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM05-112024-AB**	**Sample Description:**	**DL264098**
EMSL Sample Number:	042424238-0011	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L) :	7240.8
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):	0.0131
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 Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**

PCM EQUIVALENT (PCMe) Fibers
(>5 microns in length with >3:1 Aspect Ratio)

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**

Comment

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EMSL Order ID: 042424238
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: 042424238-0011 **Customer Sample:** MFL-AM05-112024-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	B6	None Detected									
F5	E9	None Detected									
F5	H7	None Detected									
F6	A5	None Detected									
F6	F8	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:	042424238
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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Received Date:	11/25/2024 09:20 AM
Analysis Date:	12/02/2024
Report Date:	12/02/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-112024-AB**	**Sample Description:**	**DL264079**
EMSL Sample Number:	042424238-0012	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L) :	6738.2
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):	0.0131
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 Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 45.65**	**< 0.0027**	**Not Applicable**	**0.0027**
Total Amphibole	**ADX**	**0**	**0**	**< 45.65**	**< 0.0027**	**Not Applicable**	**0.0027**
Actinolite	ADX	0	0	< 45.65	< 0.0027	Not Applicable	0.0027
Amosite	ADX	0	0	< 45.65	< 0.0027	Not Applicable	0.0027
Anthophyllite	ADX	0	0	< 45.65	< 0.0027	Not Applicable	0.0027
Crocidolite	ADX	0	0	< 45.65	< 0.0027	Not Applicable	0.0027
Tremolite	ADX	0	0	< 45.65	< 0.0027	Not Applicable	0.0027
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 45.65**	**< 0.0027**	**Not Applicable**	**0.0027**
Other Minerals	-	0	0	< 45.65	< 0.0027	Not Applicable	0.0027
Total All Structures	**-**	**0**	**0**	**< 45.65**	**< 0.0027**	**Not Applicable**	**0.0027**

PCM EQUIVALENT (PCMe) Fibers
(>5 microns in length with >3:1 Aspect Ratio)

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 45.65**	**< 0.0027**	**Not Applicable**	**0.0027**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 45.65**	**< 0.0027**	**Not Applicable**	**0.0027**
Actinolite	ADX	0	0	< 45.65	< 0.0027	Not Applicable	0.0027
Amosite	ADX	0	0	< 45.65	< 0.0027	Not Applicable	0.0027
Anthophyllite	ADX	0	0	< 45.65	< 0.0027	Not Applicable	0.0027
Crocidolite	ADX	0	0	< 45.65	< 0.0027	Not Applicable	0.0027
Tremolite	ADX	0	0	< 45.65	< 0.0027	Not Applicable	0.0027
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 45.65**	**< 0.0027**	**Not Applicable**	**0.0027**
Other Minerals	-	0	0	< 45.65	< 0.0027	Not Applicable	0.0027
Total All Structures (PCMe)	**-**	**0**	**0**	**< 45.65**	**< 0.0027**	**Not Applicable**	**0.0027**

Comment

Robyn Ray
Approved Signatory

EMSL Analytical, Inc.
200 Route 130 North Cinnaminson, NJ 08077
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http://www.EMSL.com / cinnasblab@EMSL.com

EMSL Order ID: 042424238
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: 042424238-0012 **Customer Sample:** MFL-AM02-112024-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	B7	None Detected									
G2	E4	None Detected									
G2	I8	None Detected									
G3	I3	None Detected									
G3	C4	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:	042424238
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:	11/25/2024 09:20 AM
Analysis Date:	12/02/2024
Report Date:	12/02/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-112024-AB**	**Sample Description:**	**DL264090**
EMSL Sample Number:	042424238-0013	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L) :	7226.0
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):	0.0131
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 Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**

PCM EQUIVALENT (PCMe) Fibers
(>5 microns in length with >3:1 Aspect Ratio)

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**

Comment

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

EMSL Order ID: 042424238
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: 042424238-0013 **Customer Sample:** MFL-AM03-112024-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	H6	None Detected									
G5	E8	None Detected									
G5	B6	None Detected									
G6	I7	None Detected									
G6	D6	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:	042424238
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:	11/25/2024 09:20 AM
Analysis Date:	12/02/2024
Report Date:	12/02/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM07-112024-AB**	**Sample Description:**	**DL264101**
EMSL Sample Number:	042424238-0014	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L) :	7253.4
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):	0.0131
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 Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**

PCM EQUIVALENT (PCMe) Fibers
(>5 microns in length with >3:1 Aspect Ratio)

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 45.65	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 45.65**	**< 0.0024**	**Not Applicable**	**0.0024**

Comment

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

EMSL Order ID: 042424238
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: 042424238-0014 **Customer Sample:** MFL-AM07-112024-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	I3	None Detected									
H2	G5	None Detected									
H2	D3	None Detected									
H3	I4	None Detected									
H3	C3	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:	042424238
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:	11/25/2024 09:20 AM
Analysis Date:	12/02/2024
Report Date:	12/02/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-FB01-112024-AB**	**Sample Description:**	**DL264092**
EMSL Sample Number:	042424238-0015	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 (mm^2):	385
Minimum Length (µm):	≥ 0.5	Grid Opening Area (mm^2):	0.0131
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 Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	95 % Confidence Interval (S/cc) Upper
Total Chrysotile	**CD**	**0**	**0**	**< 22.82**			
Total Amphibole	**ADX**	**0**	**0**	**< 22.82**			
Actinolite	ADX	0	0	< 22.82			
Amosite	ADX	0	0	< 22.82			
Anthophyllite	ADX	0	0	< 22.82			
Crocidolite	ADX	0	0	< 22.82			
Tremolite	ADX	0	0	< 22.82			
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 22.82**			
Other Minerals	-	0	0	< 22.82			
Total All Structures	**-**	**0**	**0**	**< 22.82**			

PCM EQUIVALENT (PCMe) Fibers
(>5 microns in length with >3:1 Aspect Ratio)

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	95 % Confidence Interval (F/cc) Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 22.82**			
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 22.82**			
Actinolite	ADX	0	0	< 22.82			
Amosite	ADX	0	0	< 22.82			
Anthophyllite	ADX	0	0	< 22.82			
Crocidolite	ADX	0	0	< 22.82			
Tremolite	ADX	0	0	< 22.82			
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 22.82**			
Other Minerals	-	0	0	< 22.82			
Total All Structures (PCMe)	**-**	**0**	**0**	**< 22.82**			

Comment

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

EMSL Order ID:	**042424238**
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: 042424238-0015 **Customer Sample:** MFL-FB01-112024-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	J3	None Detected									
H5	H1	None Detected									
H5	F4	None Detected									
H5	D5	None Detected									
H5	B2	None Detected									
H6	J2	None Detected									
H6	H5	None Detected									
H6	F1	None Detected									
H6	D4	None Detected									
H6	B7	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:	042424238
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:	11/25/2024 09:20 AM
Analysis Date:	11/29/2024
Report Date:	12/02/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**Lab Blank**		**Sample Description:**	**Lab Blank**
EMSL Sample Number:	042424238-0016		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 (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0131
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	2			
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 Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	95 % Confidence Interval (S/cc) Upper
Total Chrysotile	**CD**	**0**	**0**	**< 22.82**			
Total Amphibole	**ADX**	**0**	**0**	**< 22.82**			
Actinolite	ADX	0	0	< 22.82			
Amosite	ADX	0	0	< 22.82			
Anthophyllite	ADX	0	0	< 22.82			
Crocidolite	ADX	0	0	< 22.82			
Tremolite	ADX	0	0	< 22.82			
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 22.82**			
Other Minerals	-	0	0	< 22.82			
Total All Structures	**-**	**0**	**0**	**< 22.82**			

PCM EQUIVALENT (PCMe) Fibers
(>5 microns in length with >3:1 Aspect Ratio)

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	95 % Confidence Interval (F/cc) Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 22.82**			
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 22.82**			
Actinolite	ADX	0	0	< 22.82			
Amosite	ADX	0	0	< 22.82			
Anthophyllite	ADX	0	0	< 22.82			
Crocidolite	ADX	0	0	< 22.82			
Tremolite	ADX	0	0	< 22.82			
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 22.82**			
Other Minerals	-	0	0	< 22.82			
Total All Structures (PCMe)	**-**	**0**	**0**	**< 22.82**			

Comment

Approved Signatory

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EMSL Order ID: 042424238
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: 042424238-0016 **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	A7	None Detected									
A1	D9	None Detected									
A1	G6	None Detected									
A1	J3	None Detected									
A2	B3	None Detected									
A2	E7	None Detected									
A2	H4	None Detected									
A3	I8	None Detected									
A3	F10	None Detected									
A3	C6	None Detected									

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

OrderID: 042424238

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL Order Number / Lab Use Only: 042424238

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

EMSL Analytical, Inc.
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Cinnaminson, NJ 08077
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EMAIL: CinnAslab@EMSL.com

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

Customer Information

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

Billing Information

Billing ID:
Company Name:
Billing Contact:
Street Address:
City, State, Zip: Country:
Phone:
Email(s) for Invoice:

Project Information

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: ☐ Commercial (Taxable) ☐ Residential (Non-Taxable)
Sampled By Name: Nicholas Keefe
Sampled By Signature:
No. of Samples in Shipment: 15

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

PCM Air
☐ NIOSH 7400
☐ NIOSH 7400 w/ 8hr. TWA

PLM - Bulk (reporting limit)
☐ PLM EPA 600/R-93/116 (<1%)
☐ PLM EPA NOB (<1%)
☐ POINT COUNT
☐ 400 (<0.25%) ☐ 1,000 (<0.1%)
POINT COUNT w/ GRAVIMETRIC
☐ 400 (<0.25%) ☐ 1,000 (<0.1%)
☐ NIOSH 9002 (<1%)
☐ NYS 198.1 (Friable - NY)
☐ NYS 198.6 NOB (Non-Friable - NY)
☐ NYS 198.8 (Vermiculite SM-V)

TEM - Air
☐ AHERA 40 CFR, Part 763
☐ NIOSH 7402
☐ EPA Level II
☒ ISO 10312*

TEM - Bulk
☐ TEM EPA NOB
☐ NYS NOB 198.4 (Non-Friable-NY)
☐ TEM EPA 600/R-93/116 w Milling Prep (0.1%)

Other Test (please specify)

TEM - Settled Dust
☐ Microvac - ASTM D5755
☐ Wipe - ASTM D6480
☐ Qualitative via Filtration Prep
☐ Qualitative via Drop Mount Prep

Soil - Rock - Vermiculite (reporting limit)*
☐ PLM EPA 600/R-93/116 with milling prep (<0.25%)
☐ PLM EPA 600/R-93/116 with milling prep (<0.1%)
☐ TEM EPA 600/R-93/116 with milling prep (<0.1%)
☐ TEM Qualitative via Filtration Prep
☐ 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-AM05-111824-AB	DL264091	7199.245	11/18/24 1057
MFL-AM02-111824-AB	DL264060	7154.555	11/18/24 1113
MFL-AM03-111824-AB	DL264104	7230.624	11/18/24 1252
MFL-AM07-111824-AB	DL264094	7219.191	11/18/24 1314
MFL-FB01-111824-AB	DL264062	0	11/18/24 1200
MFL-AM05-111924-AB	DL264075	7147.501	11/19/24 1051
MFL-AM02-111924-AB	DL264099	6760.912	11/19/24 1107
MFL-AM03-111924-AB	DL264074	7209.151	11/19/24 1251

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

All samples received acceptable for analysis.

15

Method of Shipment: Fedex
Sample Condition Upon Receipt:

Relinquished by:	Date/Time:	Received by:	Date/Time
[signature]	11/21/24 1100	[signature]	11.25.24
Relinquished by:	Date/Time:	Received by:	Date/Time

Controlled Document - COC-05 Asbestos R16 10/26/2021

☐ 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.

OrderID: 042424238

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL Order Number / Lab Use Only

042424238

EMSL Analytical, Inc.
200 Route 130 North
Cinnaminson, NJ 08077
PHONE: (800) 220-3675
EMAIL: CinnAsblab@EMSL.com

Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

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

Sample Number	Sample Location / Description	Volume, Area or Homogeneous Area	Date / Time Sampled (Air Monitoring Only)
MFL-AM07-111924-AB	DL264069	7186.911	11/19/24 1312
MFL-FB01-111924-AB	DL264100	0	11/19/24 1200
MFL-AM05-112024-AB	DL264098	7240.845	11/20/24 1059
MFL-AM02-112024-AB	DL264079	6738.166	11/20/24 1119
MFL-AM03-112024-AB	DL264090	7225.950	11/20/24 1252
MFL-AM07-112024-AB	DL264101	7253.424	11/20/24 1314
MFL-FB01-112024-AB	DL264092	0	11/20/24 1200

Method of Shipment: Fedex		Sample Condition Upon Receipt:	
Relinquished by:	Date/Time: 11/21/24 1100	Received by:	Date/Time
Relinquished by:	Date/Time:	Received by:	Date/Time

Controlled Document - COC-05 Asbestos R16 10/26/2021

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

Stage 1 Data Verification Checklist – Asbestos

HDOH CAB – Ambient Community Air Sampling – Lahaina

Task Order No. 23141

Reviewed by:
Kierra Johnson 12/03/2024 and Shanna Vasser 12/03/2024
Laboratory: EMSL Analytical, Inc. – North Cinnaminson, NJ
Collection date(s): 11/18/2024 – 11/20/2024
Report No: 42424238

√	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 03, 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 11/25/24 11:14.

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

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: 12/03/24 12:08
SUBMITTED: 11/25/24
AQS SITE CODE:
SITE CODE: Lahaina fires

ANALYTICAL REPORT FOR SAMPLES

SampleName	LabNumber	Matrix	Sampled	Received
MFL-AM05-111424-HM	4112522-01	Air	11/14/24 23:59	11/25/24 11:14
MFL-AM02-111424-HM	4112522-02	Air	11/14/24 23:59	11/25/24 11:14
MFL-AM03-111424-HM	4112522-03	Air	11/14/24 23:59	11/25/24 11:14
MFL-AM07-111424-HM	4112522-04	Air	11/14/24 23:59	11/25/24 11:14
MFL-FB01-111424-HM	4112522-05	Air	11/14/24 00:00	11/25/24 11:14
MFL-AM05-111524-HM	4112522-06	Air	11/15/24 23:59	11/25/24 11:14
MFL-AM02-111524-HM	4112522-07	Air	11/15/24 23:59	11/25/24 11:14
MFL-AM03-111524-HM	4112522-08	Air	11/15/24 23:59	11/25/24 11:14
MFL-AM07-111524-HM	4112522-09	Air	11/15/24 23:59	11/25/24 11:14
MFL-AM05-111624-HM	4112522-10	Air	11/16/24 23:59	11/25/24 11:14
MFL-AM02-111624-HM	4112522-11	Air	11/16/24 23:59	11/25/24 11:14
MFL-AM03-111624-HM	4112522-12	Air	11/16/24 23:59	11/25/24 11:14
MFL-AM07-111624-HM	4112522-13	Air	11/16/24 23:59	11/25/24 11:14
MFL-FB01-111624-HM	4112522-14	Air	11/16/24 00:00	11/25/24 11:14
MFL-AM05-111724-HM	4112522-15	Air	11/17/24 23:59	11/25/24 11:14
MFL-AM02-111724-HM	4112522-16	Air	11/17/24 23:59	11/25/24 11:14
MFL-AM03-111724-HM	4112522-17	Air	11/17/24 23:59	11/25/24 11:14
MFL-AM07-111724-HM	4112522-18	Air	11/17/24 23:59	11/25/24 11:14
MFL-AM05-111824-HM	4112522-19	Air	11/18/24 23:59	11/25/24 11:14
MFL-AM02-111824-HM	4112522-20	Air	11/18/24 23:59	11/25/24 11:14
MFL-AM03-111824-HM	4112522-21	Air	11/18/24 23:59	11/25/24 11:14

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: 12/03/24 12:08
SUBMITTED: 11/25/24
AQS SITE CODE:
SITE CODE: Lahaina fires

MFL-AM07-111824-HM	4112522-22	Air	11/18/24 23:59	11/25/24 11:14
MFL-FB01-111824-HM	4112522-23	Air	11/18/24 00:00	11/25/24 11:14
MFL-AM05-111924-HM	4112522-24	Air	11/19/24 23:59	11/25/24 11:14
MFL-AM02-111924-HM	4112522-25	Air	11/19/24 23:59	11/25/24 11:14
MFL-AM03-111924-HM	4112522-26	Air	11/19/24 23:59	11/25/24 11:14
MFL-AM07-111924-HM	4112522-27	Air	11/19/24 23:59	11/25/24 11:14
MFL-AM05-112024-HM	4112522-28	Air	11/20/24 23:59	11/25/24 11:14
MFL-AM02-112024-HM	4112522-29	Air	11/20/24 23:59	11/25/24 11:14
MFL-AM03-112024-HM	4112522-30	Air	11/20/24 23:59	11/25/24 11:14
MFL-AM07-112024-HM	4112522-31	Air	11/20/24 23:59	11/25/24 11:14
MFL-FB01-112024-HM	4112522-32	Air	11/20/24 00:00	11/25/24 11:14
MFL-LB01-111724-HM	4112522-33	Air	11/17/24 00:00	11/25/24 11:14

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: 12/03/24 12:08
SUBMITTED: 11/25/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM05-111424-HM
Matrix: Air
Lab ID: 4112522-01
Sample Volume: 2002.863 m³
Filter ID:
Sampled: 11/14/24 23:59
Received: 11/25/24 11:14
Analysis Date: 11/26/24 20:55

Comments: Q8526021 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.117**	SL	**0.0314**
Arsenic	**7440-38-2**	**0.395**		**0.00761**
Barium	**7440-39-3**	**6.59**		**0.869**
Beryllium	**7440-41-7**	**0.0287**		**0.00260**
Cadmium	7440-43-9	0.0306	U	0.0602
Chromium	**7440-47-3**	**4.88**		**1.80**
Cobalt	**7440-48-4**	**1.06**		**0.0354**
Copper	**7440-50-8**	**28.9**		**2.14**
Lead	**7439-92-1**	**0.869**		**0.174**
Manganese	**7439-96-5**	**28.7**		**1.54**
Molybdenum	**7439-98-7**	**1.33**		**0.292**
Nickel	**7440-02-0**	**3.35**		**0.530**
Selenium	**7782-49-2**	**0.174**		**0.00728**
Thallium	**7440-28-0**	**0.00186**		**4.78E-4**
Vanadium	**7440-62-2**	**3.10**		**0.0430**
Zinc	7440-66-6	16.8	U	62.4

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: 12/03/24 12:08
SUBMITTED: 11/25/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-111424-HM
Matrix: Air
Lab ID: 4112522-02
Sample Volume: 2167.183 m³
Filter ID:
Sampled: 11/14/24 23:59
Received: 11/25/24 11:14
Analysis Date: 11/26/24 19:22

Comments: Q8526020 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.163**	SL	**0.0290**
Arsenic	**7440-38-2**	**0.831**	QM-07	**0.00703**
Barium	**7440-39-3**	**9.50**		**0.803**
Beryllium	**7440-41-7**	**0.0413**		**0.00240**
Cadmium	**7440-43-9**	**0.139**		**0.0556**
Chromium	**7440-47-3**	**5.63**		**1.66**
Cobalt	**7440-48-4**	**1.46**		**0.0327**
Copper	**7440-50-8**	**32.7**	QM-07	**1.97**
Lead	**7439-92-1**	**3.05**		**0.161**
Manganese	**7439-96-5**	**39.0**	QM-07	**1.42**
Molybdenum	**7439-98-7**	**1.09**	PS-01, QM-07	**0.270**
Nickel	**7440-02-0**	**3.76**		**0.489**
Selenium	**7782-49-2**	**0.201**	SRD-01	**0.00673**
Thallium	**7440-28-0**	**0.00207**		**4.42E-4**
Vanadium	**7440-62-2**	**4.36**		**0.0397**
Zinc	7440-66-6	31.9	U	57.7

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: 12/03/24 12:08
SUBMITTED: 11/25/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-111424-HM
Matrix: Air
Lab ID: 4112522-03
Sample Volume: 1901.604 m³
Filter ID:
Sampled: 11/14/24 23:59
Received: 11/25/24 11:14
Analysis Date: 11/26/24 21:06

Comments: Q8526019 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0588**	SL	**0.0330**
Arsenic	**7440-38-2**	**0.149**		**0.00802**
Barium	**7440-39-3**	**2.81**		**0.915**
Beryllium	**7440-41-7**	**0.0206**		**0.00274**
Cadmium	7440-43-9	0.00972	U	0.0634
Chromium	**7440-47-3**	**3.02**		**1.89**
Cobalt	**7440-48-4**	**0.380**		**0.0373**
Copper	**7440-50-8**	**45.2**		**2.25**
Lead	**7439-92-1**	**0.435**		**0.183**
Manganese	**7439-96-5**	**8.79**		**1.62**
Molybdenum	**7439-98-7**	**2.17**		**0.307**
Nickel	**7440-02-0**	**1.47**		**0.558**
Selenium	**7782-49-2**	**0.131**		**0.00767**
Thallium	**7440-28-0**	**8.93E-4**		**5.04E-4**
Vanadium	**7440-62-2**	**0.961**		**0.0453**
Zinc	7440-66-6	10.2	U	65.7

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: 12/03/24 12:08
SUBMITTED: 11/25/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM07-111424-HM
Matrix: Air
Lab ID: 4112522-04
Sample Volume: 1834.466 m³
Filter ID:
Sampled: 11/14/24 23:59
Received: 11/25/24 11:14
Analysis Date: 11/26/24 21:16

Comments: Q8526018 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.110**	SL	**0.0342**
Arsenic	**7440-38-2**	**0.849**		**0.00831**
Barium	**7440-39-3**	**5.85**		**0.949**
Beryllium	**7440-41-7**	**0.0311**		**0.00284**
Cadmium	7440-43-9	0.0429	U	0.0657
Chromium	**7440-47-3**	**4.52**		**1.96**
Cobalt	**7440-48-4**	**1.08**		**0.0387**
Copper	**7440-50-8**	**14.6**		**2.33**
Lead	**7439-92-1**	**0.696**		**0.190**
Manganese	**7439-96-5**	**36.5**		**1.68**
Molybdenum	**7439-98-7**	**0.720**		**0.318**
Nickel	**7440-02-0**	**2.48**		**0.578**
Selenium	**7782-49-2**	**0.181**		**0.00795**
Thallium	**7440-28-0**	**0.00196**		**5.22E-4**
Vanadium	**7440-62-2**	**2.85**		**0.0469**
Zinc	7440-66-6	20.6	U	68.1

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: 12/03/24 12:08
SUBMITTED: 11/25/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-FB01-111424-HM
Matrix: Air
Lab ID: 4112522-05
Sample Volume: 2002.863 m³
Filter ID:
Sampled: 11/14/24 00:00
Received: 11/25/24 11:14
Analysis Date: 11/26/24 21:26

Comments: Q8526017 Field Blank - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	7440-36-0	0.0184	SL, U	0.0314
Arsenic	7440-38-2	0.00264	U	0.00761
Barium	**7440-39-3**	**0.940**	FB-01	**0.869**
Beryllium	7440-41-7	6.30E-4	U	0.00260
Cadmium	7440-43-9	5.99E-4	U	0.0602
Chromium	7440-47-3	0.751	U	1.80
Cobalt	7440-48-4	0.0105	U	0.0354
Copper	7440-50-8	0.253	U	2.14
Lead	7439-92-1	0.0329	U	0.174
Manganese	7439-96-5	0.177	U	1.54
Molybdenum	7439-98-7	0.122	U	0.292
Nickel	7440-02-0	0.345	U	0.530
Selenium	7782-49-2	0.00276	U	0.00728
Thallium	7440-28-0	8.94E-5	U	4.78E-4
Vanadium	7440-62-2	0.0159	U	0.0430
Zinc	7440-66-6	2.94	U	62.4

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: 12/03/24 12:08
SUBMITTED: 11/25/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM05-111524-HM
Matrix: Air
Lab ID: 4112522-06
Sample Volume: 1987.816 m³
Filter ID:
Sampled: 11/15/24 23:59
Received: 11/25/24 11:14
Analysis Date: 11/26/24 21:37

Comments: Q8526015 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.125**	SL	**0.0316**
Arsenic	**7440-38-2**	**0.295**		**0.00767**
Barium	**7440-39-3**	**5.48**		**0.876**
Beryllium	**7440-41-7**	**0.0179**		**0.00262**
Cadmium	7440-43-9	0.0149	U	0.0606
Chromium	**7440-47-3**	**3.52**		**1.81**
Cobalt	**7440-48-4**	**0.713**		**0.0357**
Copper	**7440-50-8**	**35.0**		**2.15**
Lead	**7439-92-1**	**0.577**		**0.175**
Manganese	**7439-96-5**	**17.7**		**1.55**
Molybdenum	**7439-98-7**	**1.92**		**0.294**
Nickel	**7440-02-0**	**2.27**		**0.534**
Selenium	**7782-49-2**	**0.217**		**0.00733**
Thallium	**7440-28-0**	**0.00115**		**4.82E-4**
Vanadium	**7440-62-2**	**2.03**		**0.0433**
Zinc	7440-66-6	14.2	U	62.9

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: 12/03/24 12:08
SUBMITTED: 11/25/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-111524-HM
Matrix: Air
Lab ID: 4112522-07
Sample Volume: 2211.185 m³
Filter ID:
Sampled: 11/15/24 23:59
Received: 11/25/24 11:14
Analysis Date: 11/26/24 21:47

Comments: Q8526012 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.225**	SL	**0.0284**
Arsenic	**7440-38-2**	**0.531**		**0.00689**
Barium	**7440-39-3**	**8.04**		**0.787**
Beryllium	**7440-41-7**	**0.0286**		**0.00235**
Cadmium	**7440-43-9**	**0.149**		**0.0545**
Chromium	**7440-47-3**	**4.45**		**1.63**
Cobalt	**7440-48-4**	**0.996**		**0.0321**
Copper	**7440-50-8**	**43.9**		**1.94**
Lead	**7439-92-1**	**1.46**		**0.157**
Manganese	**7439-96-5**	**26.0**		**1.39**
Molybdenum	**7439-98-7**	**1.65**		**0.264**
Nickel	**7440-02-0**	**3.16**		**0.480**
Selenium	**7782-49-2**	**0.238**		**0.00659**
Thallium	**7440-28-0**	**0.00139**		**4.33E-4**
Vanadium	**7440-62-2**	**3.13**		**0.0389**
Zinc	7440-66-6	28.5	U	56.5

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

FILE #: 4205.00.003.001
REPORTED: 12/03/24 12:08
SUBMITTED: 11/25/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-111524-HM
Matrix: Air
Lab ID: 4112522-08
Sample Volume: 1906.381 m³
Filter ID:
Sampled: 11/15/24 23:59
Received: 11/25/24 11:14
Analysis Date: 11/26/24 21:58

Comments: Q8526011 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0876**	SL	**0.0329**
Arsenic	**7440-38-2**	**0.117**		**0.00800**
Barium	**7440-39-3**	**2.74**		**0.913**
Beryllium	**7440-41-7**	**0.0178**		**0.00273**
Cadmium	7440-43-9	0.0111	U	0.0632
Chromium	**7440-47-3**	**2.15**		**1.89**
Cobalt	**7440-48-4**	**0.325**		**0.0372**
Copper	**7440-50-8**	**41.3**		**2.24**
Lead	**7439-92-1**	**0.341**		**0.183**
Manganese	**7439-96-5**	**7.59**		**1.61**
Molybdenum	**7439-98-7**	**2.37**		**0.306**
Nickel	**7440-02-0**	**1.19**		**0.556**
Selenium	**7782-49-2**	**0.209**		**0.00765**
Thallium	**7440-28-0**	**6.99E-4**		**5.03E-4**
Vanadium	**7440-62-2**	**0.971**		**0.0451**
Zinc	7440-66-6	9.56	U	65.5

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

FILE #: 4205.00.003.001
REPORTED: 12/03/24 12:08
SUBMITTED: 11/25/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM07-111524-HM
Matrix: Air
Lab ID: 4112522-09
Sample Volume: 1890.475 m³
Filter ID:
Sampled: 11/15/24 23:59
Received: 11/25/24 11:14
Analysis Date: 11/26/24 22:08

Comments: Q8526010 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0848**	SL	**0.0332**
Arsenic	**7440-38-2**	**0.593**		**0.00806**
Barium	**7440-39-3**	**4.58**		**0.921**
Beryllium	**7440-41-7**	**0.0230**		**0.00275**
Cadmium	7440-43-9	0.0110	U	0.0638
Chromium	**7440-47-3**	**3.67**		**1.90**
Cobalt	**7440-48-4**	**0.808**		**0.0375**
Copper	**7440-50-8**	**18.2**		**2.26**
Lead	**7439-92-1**	**0.386**		**0.184**
Manganese	**7439-96-5**	**25.9**		**1.63**
Molybdenum	**7439-98-7**	**0.926**		**0.309**
Nickel	**7440-02-0**	**2.01**		**0.561**
Selenium	**7782-49-2**	**0.224**		**0.00771**
Thallium	**7440-28-0**	**0.00131**		**5.07E-4**
Vanadium	**7440-62-2**	**2.23**		**0.0455**
Zinc	7440-66-6	11.0	U	66.1

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

FILE #: 4205.00.003.001
REPORTED: 12/03/24 12:08
SUBMITTED: 11/25/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM05-111624-HM
Matrix: Air
Lab ID: 4112522-10
Sample Volume: 1982.801 m³
Filter ID:
Sampled: 11/16/24 23:59
Received: 11/25/24 11:14
Analysis Date: 11/26/24 22:18

Comments: Q8526009 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.165**	SL	**0.0317**
Arsenic	**7440-38-2**	**0.193**		**0.00769**
Barium	**7440-39-3**	**5.24**		**0.878**
Beryllium	**7440-41-7**	**0.0141**		**0.00263**
Cadmium	7440-43-9	0.00940	U	0.0608
Chromium	**7440-47-3**	**2.38**		**1.81**
Cobalt	**7440-48-4**	**0.472**		**0.0358**
Copper	**7440-50-8**	**39.2**		**2.16**
Lead	**7439-92-1**	**0.435**		**0.176**
Manganese	**7439-96-5**	**13.4**		**1.55**
Molybdenum	**7439-98-7**	**2.07**		**0.295**
Nickel	**7440-02-0**	**1.40**		**0.535**
Selenium	**7782-49-2**	**0.250**		**0.00735**
Thallium	**7440-28-0**	**9.98E-4**		**4.83E-4**
Vanadium	**7440-62-2**	**1.53**		**0.0434**
Zinc	7440-66-6	16.5	U	63.0

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: 12/03/24 12:08
SUBMITTED: 11/25/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-111624-HM
Matrix: Air
Lab ID: 4112522-11
Sample Volume: 2199.956 m³
Filter ID:
Sampled: 11/16/24 23:59
Received: 11/25/24 11:14
Analysis Date: 11/26/24 22:29

Comments: Q8526007 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.290**	SL	**0.0285**
Arsenic	**7440-38-2**	**0.855**		**0.00693**
Barium	**7440-39-3**	**7.71**		**0.791**
Beryllium	**7440-41-7**	**0.0212**		**0.00237**
Cadmium	7440-43-9	0.0507	U	0.0548
Chromium	**7440-47-3**	**3.15**		**1.63**
Cobalt	**7440-48-4**	**0.735**		**0.0322**
Copper	**7440-50-8**	**40.7**		**1.95**
Lead	**7439-92-1**	**1.52**		**0.158**
Manganese	**7439-96-5**	**21.2**		**1.40**
Molybdenum	**7439-98-7**	**1.83**		**0.266**
Nickel	**7440-02-0**	**1.99**		**0.482**
Selenium	**7782-49-2**	**0.264**		**0.00663**
Thallium	**7440-28-0**	**0.00137**		**4.36E-4**
Vanadium	**7440-62-2**	**2.27**		**0.0391**
Zinc	7440-66-6	20.3	U	56.8

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1777 Sentry Pkwy, Bldg 12
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PHONE: (703) 885-5495 **FAX:**

FILE #: 4205.00.003.001
REPORTED: 12/03/24 12:08
SUBMITTED: 11/25/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-111624-HM
Matrix: Air
Lab ID: 4112522-12
Sample Volume: 1807.295 m³
Filter ID:
Sampled: 11/16/24 23:59
Received: 11/25/24 11:14
Analysis Date: 11/26/24 23:10

Comments: Q8526006 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.136**	SL	**0.0347**
Arsenic	**7440-38-2**	**0.0845**		**0.00844**
Barium	**7440-39-3**	**2.35**		**0.963**
Beryllium	**7440-41-7**	**0.0104**		**0.00288**
Cadmium	7440-43-9	0.00464	U	0.0667
Chromium	7440-47-3	1.58	U	1.99
Cobalt	**7440-48-4**	**0.224**		**0.0393**
Copper	**7440-50-8**	**24.8**		**2.37**
Lead	7439-92-1	0.181	U	0.193
Manganese	**7439-96-5**	**6.20**		**1.70**
Molybdenum	**7439-98-7**	**1.52**		**0.323**
Nickel	**7440-02-0**	**0.846**		**0.587**
Selenium	**7782-49-2**	**0.178**		**0.00807**
Thallium	**7440-28-0**	**5.53E-4**		**5.30E-4**
Vanadium	**7440-62-2**	**0.663**		**0.0476**
Zinc	7440-66-6	6.77	U	69.1

CERTIFICATE OF ANALYSIS

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1777 Sentry Pkwy, Bldg 12
Blue Bell, PA 19422
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PHONE: (703) 885-5495 **FAX:**

FILE #: 4205.00.003.001
REPORTED: 12/03/24 12:08
SUBMITTED: 11/25/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM07-111624-HM
Matrix: Air
Lab ID: 4112522-13
Sample Volume: 1933.131 m³
Filter ID:
Sampled: 11/16/24 23:59
Received: 11/25/24 11:14
Analysis Date: 11/26/24 23:31

Comments: Q8526005 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0798**	SL	**0.0325**
Arsenic	**7440-38-2**	**0.189**		**0.00789**
Barium	**7440-39-3**	**3.24**		**0.901**
Beryllium	**7440-41-7**	**0.0140**		**0.00269**
Cadmium	7440-43-9	0.00728	U	0.0624
Chromium	**7440-47-3**	**2.78**		**1.86**
Cobalt	**7440-48-4**	**0.368**		**0.0367**
Copper	**7440-50-8**	**22.2**		**2.21**
Lead	**7439-92-1**	**0.251**		**0.180**
Manganese	**7439-96-5**	**11.5**		**1.59**
Molybdenum	**7439-98-7**	**1.10**		**0.302**
Nickel	**7440-02-0**	**1.32**		**0.549**
Selenium	**7782-49-2**	**0.225**		**0.00754**
Thallium	**7440-28-0**	**8.20E-4**		**4.96E-4**
Vanadium	**7440-62-2**	**1.09**		**0.0445**
Zinc	7440-66-6	7.35	U	64.6

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FILE #: 4205.00.003.001
REPORTED: 12/03/24 12:08
SUBMITTED: 11/25/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-FB01-111624-HM
Matrix: Air
Lab ID: 4112522-14
Sample Volume: 1982.801 m³
Filter ID:
Sampled: 11/16/24 00:00
Received: 11/25/24 11:14
Analysis Date: 11/26/24 23:41

Comments: Q8526002 Field Blank - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	7440-36-0	0.0268	SL, U	0.0317
Arsenic	7440-38-2	0.00523	U	0.00769
Barium	**7440-39-3**	**0.983**	FB-01	**0.878**
Beryllium	7440-41-7	8.20E-4	U	0.00263
Cadmium	7440-43-9	0.00352	U	0.0608
Chromium	7440-47-3	0.949	U	1.81
Cobalt	7440-48-4	0.0153	U	0.0358
Copper	7440-50-8	1.38	U	2.16
Lead	7439-92-1	0.0589	U	0.176
Manganese	7439-96-5	0.281	U	1.55
Molybdenum	7439-98-7	0.167	U	0.295
Nickel	**7440-02-0**	**0.710**	FB-01	**0.535**
Selenium	7782-49-2	0.00383	U	0.00735
Thallium	7440-28-0	1.10E-4	U	4.83E-4
Vanadium	7440-62-2	0.0273	U	0.0434
Zinc	7440-66-6	5.74	U	63.0

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FILE #: 4205.00.003.001
REPORTED: 12/03/24 12:08
SUBMITTED: 11/25/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM05-111724-HM
Matrix: Air
Lab ID: 4112522-15
Sample Volume: 2004.121 m³
Filter ID:
Sampled: 11/17/24 23:59
Received: 11/25/24 11:14
Analysis Date: 11/26/24 23:52

Comments: Q8526004 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.125**	SL	**0.0313**
Arsenic	**7440-38-2**	**0.426**		**0.00761**
Barium	**7440-39-3**	**6.35**		**0.869**
Beryllium	**7440-41-7**	**0.0288**		**0.00260**
Cadmium	7440-43-9	0.0514	U	0.0602
Chromium	**7440-47-3**	**4.41**		**1.79**
Cobalt	**7440-48-4**	**0.988**		**0.0354**
Copper	**7440-50-8**	**45.8**		**2.14**
Lead	**7439-92-1**	**1.23**		**0.174**
Manganese	**7439-96-5**	**27.1**		**1.53**
Molybdenum	**7439-98-7**	**2.23**		**0.291**
Nickel	**7440-02-0**	**2.49**		**0.529**
Selenium	**7782-49-2**	**0.232**		**0.00727**
Thallium	**7440-28-0**	**0.00194**		**4.78E-4**
Vanadium	**7440-62-2**	**2.75**		**0.0429**
Zinc	7440-66-6	20.1	U	62.3

CERTIFICATE OF ANALYSIS

Tetra Tech, Inc.
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PHONE: (703) 885-5495 **FAX:**

FILE #: 4205.00.003.001
REPORTED: 12/03/24 12:08
SUBMITTED: 11/25/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-111724-HM
Matrix: Air
Lab ID: 4112522-16
Sample Volume: 2159.788 m³
Filter ID:
Sampled: 11/17/24 23:59
Received: 11/25/24 11:14
Analysis Date: 11/27/24 00:02

Comments: Q8526001 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.167**	SL	**0.0291**
Arsenic	**7440-38-2**	**0.690**		**0.00706**
Barium	**7440-39-3**	**7.68**		**0.806**
Beryllium	**7440-41-7**	**0.0390**		**0.00241**
Cadmium	**7440-43-9**	**0.606**		**0.0558**
Chromium	**7440-47-3**	**5.49**		**1.66**
Cobalt	**7440-48-4**	**1.24**		**0.0328**
Copper	**7440-50-8**	**43.4**		**1.98**
Lead	**7439-92-1**	**2.12**		**0.161**
Manganese	**7439-96-5**	**34.3**		**1.42**
Molybdenum	**7439-98-7**	**1.17**		**0.270**
Nickel	**7440-02-0**	**3.10**		**0.491**
Selenium	**7782-49-2**	**0.243**		**0.00675**
Thallium	**7440-28-0**	**0.00214**		**4.44E-4**
Vanadium	**7440-62-2**	**3.76**		**0.0399**
Zinc	7440-66-6	28.6	U	57.9

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 12/03/24 12:08
SUBMITTED: 11/25/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-111724-HM
Matrix: Air
Lab ID: 4112522-17
Sample Volume: 1853.752 m³
Filter ID:
Sampled: 11/17/24 23:59
Received: 11/25/24 11:14
Analysis Date: 11/27/24 00:13

Comments: Q8537049 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0416**	SL	**0.0339**
Arsenic	**7440-38-2**	**0.322**	LJ, QX	**0.00822**
Barium	**7440-39-3**	**6.38**		**0.939**
Beryllium	**7440-41-7**	**0.164**		**0.00281**
Cadmium	7440-43-9	0.0187	LJ, QX, U	0.0650
Chromium	**7440-47-3**	**9.32**		**1.94**
Cobalt	**7440-48-4**	**2.02**		**0.0383**
Copper	**7440-50-8**	**39.5**		**2.31**
Lead	**7439-92-1**	**0.793**	LJ, QX	**0.188**
Manganese	**7439-96-5**	**42.1**		**1.66**
Molybdenum	**7439-98-7**	**1.22**	LJ, QX	**0.315**
Nickel	**7440-02-0**	**5.17**		**0.572**
Selenium	**7782-49-2**	**0.279**	LJ, QX	**0.00786**
Thallium	**7440-28-0**	**0.00241**	LJ, QX	**5.17E-4**
Vanadium	**7440-62-2**	**5.24**		**0.0464**
Zinc	7440-66-6	13.5	U	67.4

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: 12/03/24 12:08
SUBMITTED: 11/25/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM07-111724-HM
Matrix: Air
Lab ID: 4112522-18
Sample Volume: 1914.717 m³
Filter ID:
Sampled: 11/17/24 23:59
Received: 11/25/24 11:14
Analysis Date: 11/27/24 00:23

Comments: Q8537048 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.104**	SL	**0.0328**
Arsenic	**7440-38-2**	**0.489**		**0.00796**
Barium	**7440-39-3**	**4.79**		**0.909**
Beryllium	**7440-41-7**	**0.0395**		**0.00272**
Cadmium	**7440-43-9**	**0.416**		**0.0630**
Chromium	**7440-47-3**	**6.87**		**1.88**
Cobalt	**7440-48-4**	**1.38**		**0.0370**
Copper	**7440-50-8**	**28.1**		**2.23**
Lead	**7439-92-1**	**1.11**		**0.182**
Manganese	**7439-96-5**	**34.8**		**1.61**
Molybdenum	**7439-98-7**	**0.808**		**0.305**
Nickel	**7440-02-0**	**3.47**		**0.554**
Selenium	**7782-49-2**	**0.235**		**0.00761**
Thallium	**7440-28-0**	**0.00186**		**5.00E-4**
Vanadium	**7440-62-2**	**3.43**		**0.0450**
Zinc	7440-66-6	18.9	U	65.3

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: 12/03/24 12:08
SUBMITTED: 11/25/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM05-111824-HM
Matrix: Air
Lab ID: 4112522-19
Sample Volume: 1976.21 m³
Filter ID:
Sampled: 11/18/24 23:59
Received: 11/25/24 11:14
Analysis Date: 11/27/24 00:33

Comments: Q8537047 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.114**	SL	**0.0318**
Arsenic	**7440-38-2**	**0.241**		**0.00771**
Barium	**7440-39-3**	**3.96**		**0.881**
Beryllium	**7440-41-7**	**0.0143**		**0.00263**
Cadmium	7440-43-9	0.0119	U	0.0610
Chromium	**7440-47-3**	**5.62**		**1.82**
Cobalt	**7440-48-4**	**0.423**		**0.0359**
Copper	**7440-50-8**	**47.5**		**2.17**
Lead	**7439-92-1**	**0.604**		**0.176**
Manganese	**7439-96-5**	**13.2**		**1.56**
Molybdenum	**7439-98-7**	**2.37**		**0.296**
Nickel	**7440-02-0**	**1.46**		**0.537**
Selenium	**7782-49-2**	**0.176**		**0.00738**
Thallium	**7440-28-0**	**0.00119**		**4.85E-4**
Vanadium	**7440-62-2**	**1.38**		**0.0436**
Zinc	7440-66-6	11.4	U	63.2

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: 12/03/24 12:08
SUBMITTED: 11/25/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-111824-HM
Matrix: Air
Lab ID: 4112522-20
Sample Volume: 2157.009 m³
Filter ID:
Sampled: 11/18/24 23:59
Received: 11/25/24 11:14
Analysis Date: 11/27/24 00:44

Comments: Q8537044 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.244**	SL	**0.0291**
Arsenic	**7440-38-2**	**0.248**		**0.00707**
Barium	**7440-39-3**	**4.54**		**0.807**
Beryllium	**7440-41-7**	**0.0129**		**0.00241**
Cadmium	7440-43-9	0.0178	U	0.0559
Chromium	**7440-47-3**	**2.21**		**1.67**
Cobalt	**7440-48-4**	**0.438**		**0.0329**
Copper	**7440-50-8**	**39.3**		**1.98**
Lead	**7439-92-1**	**2.29**		**0.161**
Manganese	**7439-96-5**	**10.9**		**1.43**
Molybdenum	**7439-98-7**	**1.72**		**0.271**
Nickel	**7440-02-0**	**1.39**		**0.492**
Selenium	**7782-49-2**	**0.179**		**0.00676**
Thallium	**7440-28-0**	**8.74E-4**		**4.44E-4**
Vanadium	**7440-62-2**	**1.35**		**0.0399**
Zinc	7440-66-6	13.2	U	57.9

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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: 12/03/24 12:08
SUBMITTED: 11/25/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-111824-HM
Matrix: Air
Lab ID: 4112522-21
Sample Volume: 1951.213 m³
Filter ID:
Sampled: 11/18/24 23:59
Received: 11/25/24 11:14
Analysis Date: 11/27/24 01:25

Comments: Q8537043 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0556**	SL	**0.0322**
Arsenic	**7440-38-2**	**0.103**		**0.00781**
Barium	**7440-39-3**	**2.14**		**0.892**
Beryllium	**7440-41-7**	**0.0163**		**0.00267**
Cadmium	7440-43-9	0.0160	U	0.0618
Chromium	**7440-47-3**	**2.71**		**1.84**
Cobalt	**7440-48-4**	**0.286**		**0.0364**
Copper	**7440-50-8**	**48.2**		**2.19**
Lead	**7439-92-1**	**0.261**		**0.178**
Manganese	**7439-96-5**	**7.10**		**1.58**
Molybdenum	**7439-98-7**	**2.14**		**0.299**
Nickel	**7440-02-0**	**1.48**		**0.544**
Selenium	**7782-49-2**	**0.168**		**0.00747**
Thallium	**7440-28-0**	**8.65E-4**		**4.91E-4**
Vanadium	**7440-62-2**	**0.767**		**0.0441**
Zinc	7440-66-6	8.48	U	64.0

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

FILE #: 4205.00.003.001
REPORTED: 12/03/24 12:08
SUBMITTED: 11/25/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM07-111824-HM
Matrix: Air
Lab ID: 4112522-22
Sample Volume: 1916.323 m³
Filter ID:
Sampled: 11/18/24 23:59
Received: 11/25/24 11:14
Analysis Date: 11/27/24 01:36

Comments: Q8537042 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0692**	SL	**0.0328**
Arsenic	**7440-38-2**	**0.327**		**0.00796**
Barium	**7440-39-3**	**3.07**		**0.908**
Beryllium	**7440-41-7**	**0.0174**		**0.00272**
Cadmium	7440-43-9	0.0116	U	0.0629
Chromium	**7440-47-3**	**2.74**		**1.88**
Cobalt	**7440-48-4**	**0.560**		**0.0370**
Copper	**7440-50-8**	**24.3**		**2.23**
Lead	**7439-92-1**	**0.293**		**0.182**
Manganese	**7439-96-5**	**17.5**		**1.60**
Molybdenum	**7439-98-7**	**1.00**		**0.305**
Nickel	**7440-02-0**	**1.46**		**0.554**
Selenium	**7782-49-2**	**0.177**		**0.00761**
Thallium	**7440-28-0**	**0.00120**		**5.00E-4**
Vanadium	**7440-62-2**	**1.57**		**0.0449**
Zinc	7440-66-6	7.63	U	65.2

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: 12/03/24 12:08
SUBMITTED: 11/25/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-FB01-111824-HM
Matrix: Air
Lab ID: 4112522-23
Sample Volume: 1976.21 m³
Filter ID:
Sampled: 11/18/24 00:00
Received: 11/25/24 11:14
Analysis Date: 11/27/24 01:46

Comments: Q8537034 Field Blank - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	7440-36-0	0.0199	SL, U	0.0318
Arsenic	7440-38-2	0.00369	U	0.00771
Barium	7440-39-3	0.815	U	0.881
Beryllium	7440-41-7	7.97E-4	U	0.00263
Cadmium	7440-43-9	5.72E-4	U	0.0610
Chromium	7440-47-3	0.701	U	1.82
Cobalt	7440-48-4	0.0113	U	0.0359
Copper	7440-50-8	0.456	U	2.17
Lead	7439-92-1	0.0231	U	0.176
Manganese	7439-96-5	0.213	U	1.56
Molybdenum	7439-98-7	0.132	U	0.296
Nickel	7440-02-0	0.341	U	0.537
Selenium	7782-49-2	0.00462	U	0.00738
Thallium	7440-28-0	7.69E-5	U	4.85E-4
Vanadium	7440-62-2	0.0187	U	0.0436
Zinc	7440-66-6	3.26	U	63.2

CERTIFICATE OF ANALYSIS

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Blue Bell, PA 19422
ATTN: Ms. Chelsea Saber
PHONE: (703) 885-5495 **FAX:**

FILE #: 4205.00.003.001
REPORTED: 12/03/24 12:08
SUBMITTED: 11/25/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM05-111924-HM
Matrix: Air
Lab ID: 4112522-24
Sample Volume: 1930.098 m³
Filter ID:
Sampled: 11/19/24 23:59
Received: 11/25/24 11:14
Analysis Date: 11/26/24 17:07

Comments: Q8537038 MS/MSD - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.194**	SL	**0.0325**
Arsenic	**7440-38-2**	**0.550**		**0.00790**
Barium	**7440-39-3**	**6.30**		**0.902**
Beryllium	**7440-41-7**	**0.0198**		**0.00270**
Cadmium	7440-43-9	0.0155	U	0.0625
Chromium	**7440-47-3**	**3.54**		**1.86**
Cobalt	**7440-48-4**	**0.774**		**0.0368**
Copper	**7440-50-8**	**48.7**		**2.22**
Lead	**7439-92-1**	**0.942**		**0.180**
Manganese	**7439-96-5**	**18.5**		**1.59**
Molybdenum	**7439-98-7**	**2.01**		**0.303**
Nickel	**7440-02-0**	**2.37**		**0.550**
Selenium	**7782-49-2**	**0.228**		**0.00755**
Thallium	**7440-28-0**	**0.00180**		**4.97E-4**
Vanadium	**7440-62-2**	**2.43**		**0.0446**
Zinc	7440-66-6	18.9	U	64.7

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: 12/03/24 12:08
SUBMITTED: 11/25/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-111924-HM
Matrix: Air
Lab ID: 4112522-25
Sample Volume: 2123.548 m³
Filter ID:
Sampled: 11/19/24 23:59
Received: 11/25/24 11:14
Analysis Date: 11/27/24 01:57

Comments: Q8537037 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.307**	SL	**0.0296**
Arsenic	**7440-38-2**	**0.381**		**0.00718**
Barium	**7440-39-3**	**7.76**		**0.820**
Beryllium	**7440-41-7**	**0.0243**		**0.00245**
Cadmium	7440-43-9	0.0125	U	0.0568
Chromium	**7440-47-3**	**4.32**		**1.69**
Cobalt	**7440-48-4**	**0.911**		**0.0334**
Copper	**7440-50-8**	**42.2**		**2.02**
Lead	**7439-92-1**	**0.942**		**0.164**
Manganese	**7439-96-5**	**22.8**		**1.45**
Molybdenum	**7439-98-7**	**1.59**		**0.275**
Nickel	**7440-02-0**	**2.87**		**0.500**
Selenium	**7782-49-2**	**0.222**		**0.00686**
Thallium	**7440-28-0**	**0.00174**		**4.51E-4**
Vanadium	**7440-62-2**	**3.07**		**0.0405**
Zinc	7440-66-6	17.3	U	58.8

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: 12/03/24 12:08
SUBMITTED: 11/25/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-111924-HM
Matrix: Air
Lab ID: 4112522-26
Sample Volume: 1797.531 m³
Filter ID:
Sampled: 11/19/24 23:59
Received: 11/25/24 11:14
Analysis Date: 11/27/24 02:07

Comments: Q8537035 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0795**	SL	**0.0349**
Arsenic	**7440-38-2**	**0.133**		**0.00848**
Barium	**7440-39-3**	**2.79**		**0.968**
Beryllium	**7440-41-7**	**0.0168**		**0.00290**
Cadmium	7440-43-9	0.00876	U	0.0671
Chromium	**7440-47-3**	**2.41**		**2.00**
Cobalt	**7440-48-4**	**0.323**		**0.0395**
Copper	**7440-50-8**	**58.1**		**2.38**
Lead	**7439-92-1**	**0.320**		**0.194**
Manganese	**7439-96-5**	**8.29**		**1.71**
Molybdenum	**7439-98-7**	**2.47**		**0.325**
Nickel	**7440-02-0**	**1.43**		**0.590**
Selenium	**7782-49-2**	**0.198**		**0.00811**
Thallium	**7440-28-0**	**0.00119**		**5.33E-4**
Vanadium	**7440-62-2**	**1.03**		**0.0479**
Zinc	7440-66-6	7.39	U	69.5

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: 12/03/24 12:08
SUBMITTED: 11/25/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM07-111924-HM
Matrix: Air
Lab ID: 4112522-27
Sample Volume: 1820.527 m³
Filter ID:
Sampled: 11/19/24 23:59
Received: 11/25/24 11:14
Analysis Date: 11/27/24 02:17

Comments: Q8537033 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.118**	SL	**0.0345**
Arsenic	**7440-38-2**	**0.429**		**0.00837**
Barium	**7440-39-3**	**3.91**		**0.956**
Beryllium	**7440-41-7**	**0.0176**		**0.00286**
Cadmium	7440-43-9	0.0119	U	0.0662
Chromium	**7440-47-3**	**3.66**		**1.98**
Cobalt	**7440-48-4**	**0.584**		**0.0390**
Copper	**7440-50-8**	**29.1**		**2.35**
Lead	**7439-92-1**	**0.342**		**0.191**
Manganese	**7439-96-5**	**18.8**		**1.69**
Molybdenum	**7439-98-7**	**1.28**		**0.321**
Nickel	**7440-02-0**	**2.25**		**0.583**
Selenium	**7782-49-2**	**0.208**		**0.00801**
Thallium	**7440-28-0**	**0.00151**		**5.26E-4**
Vanadium	**7440-62-2**	**1.78**		**0.0473**
Zinc	7440-66-6	10.4	U	68.6

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: 12/03/24 12:08
SUBMITTED: 11/25/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM05-112024-HM
Matrix: Air
Lab ID: 4112522-28
Sample Volume: 1945.487 m³
Filter ID:
Sampled: 11/20/24 23:59
Received: 11/25/24 11:14
Analysis Date: 11/27/24 02:28

Comments: Q8537030 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.148**	SL	**0.0323**
Arsenic	**7440-38-2**	**0.478**		**0.00784**
Barium	**7440-39-3**	**4.73**		**0.895**
Beryllium	**7440-41-7**	**0.0146**		**0.00268**
Cadmium	7440-43-9	0.0225	U	0.0620
Chromium	**7440-47-3**	**2.54**		**1.85**
Cobalt	**7440-48-4**	**0.465**		**0.0365**
Copper	**7440-50-8**	**42.3**		**2.20**
Lead	**7439-92-1**	**1.03**		**0.179**
Manganese	**7439-96-5**	**13.3**		**1.58**
Molybdenum	**7439-98-7**	**1.81**		**0.300**
Nickel	**7440-02-0**	**1.72**		**0.545**
Selenium	**7782-49-2**	**0.181**		**0.00749**
Thallium	**7440-28-0**	**0.00144**		**4.93E-4**
Vanadium	**7440-62-2**	**1.51**		**0.0442**
Zinc	7440-66-6	20.4	U	64.2

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: 12/03/24 12:08
SUBMITTED: 11/25/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-112024-HM
Matrix: Air
Lab ID: 4112522-29
Sample Volume: 2166.91 m³
Filter ID:
Sampled: 11/20/24 23:59
Received: 11/25/24 11:14
Analysis Date: 11/27/24 02:38

Comments: Q8537029 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.184**	SL	**0.0290**
Arsenic	**7440-38-2**	**0.299**		**0.00704**
Barium	**7440-39-3**	**6.28**		**0.803**
Beryllium	**7440-41-7**	**0.0214**		**0.00240**
Cadmium	7440-43-9	0.0107	U	0.0556
Chromium	**7440-47-3**	**2.93**		**1.66**
Cobalt	**7440-48-4**	**0.703**		**0.0327**
Copper	**7440-50-8**	**39.8**		**1.97**
Lead	**7439-92-1**	**0.857**		**0.161**
Manganese	**7439-96-5**	**20.3**		**1.42**
Molybdenum	**7439-98-7**	**1.47**		**0.270**
Nickel	**7440-02-0**	**1.95**		**0.490**
Selenium	**7782-49-2**	**0.197**		**0.00673**
Thallium	**7440-28-0**	**0.00135**		**4.42E-4**
Vanadium	**7440-62-2**	**2.50**		**0.0397**
Zinc	7440-66-6	16.4	U	57.7

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: 12/03/24 12:08
SUBMITTED: 11/25/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-112024-HM
Matrix: Air
Lab ID: 4112522-30
Sample Volume: 1956.118 m³
Filter ID:
Sampled: 11/20/24 23:59
Received: 11/25/24 11:14
Analysis Date: 11/27/24 02:49

Comments: Q8537027 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0651**	SL	**0.0321**
Arsenic	**7440-38-2**	**0.152**		**0.00779**
Barium	**7440-39-3**	**2.80**		**0.890**
Beryllium	**7440-41-7**	**0.0219**		**0.00266**
Cadmium	7440-43-9	0.00865	U	0.0616
Chromium	**7440-47-3**	**2.75**		**1.84**
Cobalt	**7440-48-4**	**0.396**		**0.0363**
Copper	**7440-50-8**	**57.0**		**2.19**
Lead	**7439-92-1**	**0.344**		**0.178**
Manganese	**7439-96-5**	**10.4**		**1.57**
Molybdenum	**7439-98-7**	**2.34**		**0.299**
Nickel	**7440-02-0**	**1.64**		**0.542**
Selenium	**7782-49-2**	**0.172**		**0.00745**
Thallium	**7440-28-0**	**0.00107**		**4.90E-4**
Vanadium	**7440-62-2**	**1.12**		**0.0440**
Zinc	7440-66-6	7.91	U	63.9

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: 12/03/24 12:08
SUBMITTED: 11/25/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM07-112024-HM
Matrix: Air
Lab ID: 4112522-31
Sample Volume: 1822.813 m³
Filter ID:
Sampled: 11/20/24 23:59
Received: 11/25/24 11:14
Analysis Date: 11/27/24 03:30

Comments: Q8537024 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0691**	SL	**0.0345**
Arsenic	**7440-38-2**	**0.600**		**0.00836**
Barium	**7440-39-3**	**4.27**		**0.955**
Beryllium	**7440-41-7**	**0.0234**		**0.00286**
Cadmium	7440-43-9	0.0115	U	0.0661
Chromium	**7440-47-3**	**3.20**		**1.97**
Cobalt	**7440-48-4**	**0.692**		**0.0389**
Copper	**7440-50-8**	**28.0**		**2.35**
Lead	**7439-92-1**	**0.420**		**0.191**
Manganese	**7439-96-5**	**24.2**		**1.69**
Molybdenum	**7439-98-7**	**1.14**		**0.320**
Nickel	**7440-02-0**	**1.81**		**0.582**
Selenium	**7782-49-2**	**0.206**		**0.00800**
Thallium	**7440-28-0**	**0.00166**		**5.26E-4**
Vanadium	**7440-62-2**	**2.07**		**0.0472**
Zinc	7440-66-6	10.3	U	68.5

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FILE #: 4205.00.003.001
REPORTED: 12/03/24 12:08
SUBMITTED: 11/25/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-FB01-112024-HM
Matrix: Air
Lab ID: 4112522-32
Sample Volume: 1945.487 m³
Filter ID:
Sampled: 11/20/24 00:00
Received: 11/25/24 11:14
Analysis Date: 11/27/24 03:51

Comments: Q8537018 Field Blank - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	7440-36-0	0.0211	SL, U	0.0323
Arsenic	7440-38-2	0.00572	U	0.00784
Barium	7440-39-3	0.793	U	0.895
Beryllium	7440-41-7	5.65E-4	U	0.00268
Cadmium	7440-43-9	0.00113	U	0.0620
Chromium	7440-47-3	0.739	U	1.85
Cobalt	7440-48-4	0.0119	U	0.0365
Copper	7440-50-8	1.09	U	2.20
Lead	7439-92-1	0.0554	U	0.179
Manganese	7439-96-5	0.233	U	1.58
Molybdenum	7439-98-7	0.134	U	0.300
Nickel	7440-02-0	0.387	U	0.545
Selenium	7782-49-2	0.00563	U	0.00749
Thallium	7440-28-0	8.02E-5	U	4.93E-4
Vanadium	7440-62-2	0.0199	U	0.0442
Zinc	7440-66-6	3.02	U	64.2

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FILE #: 4205.00.003.001
REPORTED: 12/03/24 12:08
SUBMITTED: 11/25/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-LB01-111724-HM
Matrix: Air
Lab ID: 4112522-33
Sample Volume: 2004.121 m³
Filter ID:
Sampled: 11/17/24 00:00
Received: 11/25/24 11:14
Analysis Date: 11/27/24 04:01

Comments: Q8537045 Lot Blank - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	7440-36-0	0.0229	SL, U	0.0313
Arsenic	7440-38-2	0.00476	U	0.00761
Barium	**7440-39-3**	**1.67**		**0.869**
Beryllium	7440-41-7	7.51E-4	U	0.00260
Cadmium	7440-43-9	8.62E-4	U	0.0602
Chromium	7440-47-3	0.799	U	1.79
Cobalt	7440-48-4	0.0144	U	0.0354
Copper	**7440-50-8**	**2.31**		**2.14**
Lead	7439-92-1	0.0806	U	0.174
Manganese	7439-96-5	0.267	U	1.53
Molybdenum	7439-98-7	0.146	U	0.291
Nickel	**7440-02-0**	**0.601**		**0.529**
Selenium	7782-49-2	0.00487	U	0.00727
Thallium	7440-28-0	9.20E-5	U	4.78E-4
Vanadium	7440-62-2	0.0280	U	0.0429
Zinc	7440-66-6	6.89	U	62.3

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FILE #: 4205.00.003.001
REPORTED: 12/03/24 12:08
SUBMITTED: 11/25/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2411074 - B4K2605										
Calibration Blank (2411074-CCB1)				Prepared & Analyzed: 11/26/24						
Antimony	0.741		ng/l							
Arsenic	-0.181		ng/l							U
Barium	0.224		ng/l							
Beryllium	-0.200		ng/l							U
Cadmium	0.00578		ng/l							
Chromium	1.44		ng/l							
Cobalt	-0.0199		ng/l							U
Copper	39.4		ng/l							
Lead	15.0		ng/l							
Manganese	1.64		ng/l							
Molybdenum	2.74		ng/l							
Nickel	-0.0681		ng/l							U
Selenium	-4.89		ng/l							U
Thallium	0.879		ng/l							
Vanadium	-18.6		ng/l							U
Zinc	-4.22		ng/l							U
Calibration Blank (2411074-CCB2)				Prepared & Analyzed: 11/26/24						
Antimony	0.0550		ng/l							
Arsenic	-2.06		ng/l							U
Barium	0.429		ng/l							
Beryllium	-0.130		ng/l							U
Cadmium	0.0692		ng/l							
Chromium	0.816		ng/l							
Cobalt	-0.0773		ng/l							U
Copper	15.0		ng/l							
Lead	5.43		ng/l							
Manganese	1.20		ng/l							
Molybdenum	0.846		ng/l							
Nickel	0.0729		ng/l							
Selenium	6.07		ng/l							
Thallium	0.730		ng/l							
Vanadium	-22.0		ng/l							U
Zinc	-8.87		ng/l							U
Calibration Blank (2411074-CCB3)				Prepared & Analyzed: 11/26/24						
Antimony	0.187		ng/l							
Arsenic	-0.832		ng/l							U
Barium	0.858		ng/l							
Beryllium	-0.226		ng/l							U

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REPORTED: 12/03/24 12:08
SUBMITTED: 11/25/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2411074 - B4K2605										
Calibration Blank (2411074-CCB3) Contin				Prepared & Analyzed: 11/26/24						
Cadmium	0.0326		ng/l							
Chromium	0.769		ng/l							
Cobalt	0.0154		ng/l							
Copper	9.45		ng/l							
Lead	5.64		ng/l							
Manganese	1.14		ng/l							
Molybdenum	0.937		ng/l							
Nickel	0.0867		ng/l							
Selenium	11.7		ng/l							
Thallium	0.729		ng/l							
Vanadium	-22.0		ng/l							U
Zinc	-19.9		ng/l							U
Calibration Blank (2411074-CCB4)				Prepared & Analyzed: 11/26/24						
Antimony	0.262		ng/l							
Arsenic	-0.0960		ng/l							U
Barium	-0.195		ng/l							U
Beryllium	-0.0665		ng/l							U
Cadmium	0.00727		ng/l							
Chromium	1.13		ng/l							
Cobalt	0.172		ng/l							
Copper	9.30		ng/l							
Lead	3.71		ng/l							
Manganese	0.687		ng/l							
Molybdenum	1.18		ng/l							
Nickel	0.196		ng/l							
Selenium	0.945		ng/l							
Thallium	0.616		ng/l							
Vanadium	-22.8		ng/l							U
Zinc	-12.7		ng/l							U
Calibration Blank (2411074-CCB5)				Prepared: 11/26/24 Analyzed: 11/27/24						
Antimony	0.226		ng/l							
Arsenic	-1.52		ng/l							U
Barium	0.206		ng/l							
Beryllium	-0.133		ng/l							U
Cadmium	0.0346		ng/l							
Chromium	1.34		ng/l							
Cobalt	-0.0373		ng/l							U
Copper	7.04		ng/l							

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AQS SITE CODE:
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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2411074 - B4K2605										
Calibration Blank (2411074-CCB5) Contin				Prepared: 11/26/24 Analyzed: 11/27/24						
Lead	3.87		ng/l							
Manganese	1.14		ng/l							
Molybdenum	1.36		ng/l							
Nickel	0.0787		ng/l							
Selenium	20.4		ng/l							
Thallium	0.709		ng/l							
Vanadium	-22.9		ng/l							U
Zinc	-12.9		ng/l							U
Calibration Blank (2411074-CCB6)				Prepared: 11/26/24 Analyzed: 11/27/24						
Antimony	0.252		ng/l							
Arsenic	-0.204		ng/l							U
Barium	0.170		ng/l							
Beryllium	-0.260		ng/l							U
Cadmium	0.0480		ng/l							
Chromium	1.08		ng/l							
Cobalt	0.0737		ng/l							
Copper	8.38		ng/l							
Lead	3.88		ng/l							
Manganese	1.20		ng/l							
Molybdenum	0.702		ng/l							
Nickel	-0.0228		ng/l							U
Selenium	9.62		ng/l							
Thallium	0.661		ng/l							
Vanadium	-26.4		ng/l							U
Zinc	-1.23		ng/l							U
Calibration Blank (2411074-CCB7)				Prepared: 11/26/24 Analyzed: 11/27/24						
Antimony	0.339		ng/l							
Arsenic	0.204		ng/l							
Barium	0.480		ng/l							
Beryllium	-0.195		ng/l							U
Cadmium	-0.0184		ng/l							U
Chromium	0.891		ng/l							
Cobalt	0.0546		ng/l							
Copper	8.83		ng/l							
Lead	4.19		ng/l							
Manganese	0.816		ng/l							
Molybdenum	1.41		ng/l							
Nickel	0.0669		ng/l							

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FILE #: 4205.00.003.001
REPORTED: 12/03/24 12:08
SUBMITTED: 11/25/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2411074 - B4K2605										
Calibration Blank (2411074-CCB7) Contin				Prepared: 11/26/24 Analyzed: 11/27/24						
Selenium	11.3		ng/l							
Thallium	0.779		ng/l							
Vanadium	-25.9		ng/l							U
Zinc	-13.5		ng/l							U
Calibration Check (2411074-CCV1)				Prepared & Analyzed: 11/26/24						
Antimony	20300		ng/l	20000		101	90-110			
Arsenic	20300		ng/l	20000		101	90-110			
Barium	199000		ng/l	200000		99.4	90-110			
Beryllium	5110		ng/l	5000.0		102	90-110			
Cadmium	20300		ng/l	20000		101	90-110			
Chromium	245000		ng/l	240000		102	90-110			
Cobalt	50800		ng/l	50000		102	90-110			
Copper	2.07E6		ng/l	2.0000E6		103	90-110			
Lead	203000		ng/l	200000		101	90-110			
Manganese	512000		ng/l	500000		102	90-110			
Molybdenum	47400		ng/l	50000		94.9	90-110			
Nickel	120000		ng/l	120000		99.9	90-110			
Selenium	20500		ng/l	20000		102	90-110			
Thallium	499		ng/l	500.00		99.9	90-110			
Vanadium	20300		ng/l	20000		102	90-110			
Zinc	513000		ng/l	500000		103	90-110			
Calibration Check (2411074-CCV2)				Prepared & Analyzed: 11/26/24						
Antimony	20400		ng/l	20000		102	90-110			
Arsenic	20300		ng/l	20000		101	90-110			
Barium	200000		ng/l	200000		99.8	90-110			
Beryllium	5150		ng/l	5000.0		103	90-110			
Cadmium	20500		ng/l	20000		102	90-110			
Chromium	243000		ng/l	240000		101	90-110			
Cobalt	50600		ng/l	50000		101	90-110			
Copper	2.04E6		ng/l	2.0000E6		102	90-110			
Lead	202000		ng/l	200000		101	90-110			
Manganese	507000		ng/l	500000		101	90-110			
Molybdenum	47100		ng/l	50000		94.3	90-110			
Nickel	119000		ng/l	120000		98.9	90-110			
Selenium	20500		ng/l	20000		103	90-110			
Thallium	500		ng/l	500.00		100	90-110			
Vanadium	20200		ng/l	20000		101	90-110			
Zinc	512000		ng/l	500000		102	90-110			

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AQS SITE CODE:
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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes

Inorganics by Compendium Method IO-3.5 - Quality Control

Batch 2411074 - B4K2605

Calibration Check (2411074-CCV3)				Prepared & Analyzed: 11/26/24						
Antimony	20600		ng/l	20000		103	90-110			
Arsenic	20100		ng/l	20000		101	90-110			
Barium	202000		ng/l	200000		101	90-110			
Beryllium	5120		ng/l	5000.0		102	90-110			
Cadmium	20500		ng/l	20000		102	90-110			
Chromium	242000		ng/l	240000		101	90-110			
Cobalt	50200		ng/l	50000		100	90-110			
Copper	2.03E6		ng/l	2.0000E6		101	90-110			
Lead	201000		ng/l	200000		101	90-110			
Manganese	511000		ng/l	500000		102	90-110			
Molybdenum	47500		ng/l	50000		95.0	90-110			
Nickel	118000		ng/l	120000		98.2	90-110			
Selenium	20400		ng/l	20000		102	90-110			
Thallium	492		ng/l	500.00		98.4	90-110			
Vanadium	20200		ng/l	20000		101	90-110			
Zinc	511000		ng/l	500000		102	90-110			
Calibration Check (2411074-CCV4)				Prepared & Analyzed: 11/26/24						
Antimony	20200		ng/l	20000		101	90-110			
Arsenic	20000		ng/l	20000		100	90-110			
Barium	200000		ng/l	200000		100	90-110			
Beryllium	5080		ng/l	5000.0		102	90-110			
Cadmium	20100		ng/l	20000		100	90-110			
Chromium	240000		ng/l	240000		100	90-110			
Cobalt	49600		ng/l	50000		99.3	90-110			
Copper	2.01E6		ng/l	2.0000E6		100	90-110			
Lead	199000		ng/l	200000		99.3	90-110			
Manganese	503000		ng/l	500000		101	90-110			
Molybdenum	47000		ng/l	50000		94.0	90-110			
Nickel	116000		ng/l	120000		96.9	90-110			
Selenium	20400		ng/l	20000		102	90-110			
Thallium	484		ng/l	500.00		96.8	90-110			
Vanadium	19900		ng/l	20000		99.4	90-110			
Zinc	504000		ng/l	500000		101	90-110			
Calibration Check (2411074-CCV5)				Prepared: 11/26/24 Analyzed: 11/27/24						
Antimony	20400		ng/l	20000		102	90-110			
Arsenic	20000		ng/l	20000		100	90-110			
Barium	201000		ng/l	200000		100	90-110			
Beryllium	5070		ng/l	5000.0		101	90-110			

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AQS SITE CODE:
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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2411074 - B4K2605										
Calibration Check (2411074-CCV5) Contin					Prepared: 11/26/24 Analyzed: 11/27/24					
Cadmium	20300		ng/l	20000		101	90-110			
Chromium	243000		ng/l	240000		101	90-110			
Cobalt	49900		ng/l	50000		99.8	90-110			
Copper	2.02E6		ng/l	2.0000E6		101	90-110			
Lead	200000		ng/l	200000		100	90-110			
Manganese	510000		ng/l	500000		102	90-110			
Molybdenum	47400		ng/l	50000		94.8	90-110			
Nickel	117000		ng/l	120000		97.2	90-110			
Selenium	20300		ng/l	20000		101	90-110			
Thallium	492		ng/l	500.00		98.4	90-110			
Vanadium	19900		ng/l	20000		99.6	90-110			
Zinc	505000		ng/l	500000		101	90-110			
Calibration Check (2411074-CCV6)					Prepared: 11/26/24 Analyzed: 11/27/24					
Antimony	20300		ng/l	20000		102	90-110			
Arsenic	19900		ng/l	20000		99.5	90-110			
Barium	200000		ng/l	200000		100	90-110			
Beryllium	5090		ng/l	5000.0		102	90-110			
Cadmium	20000		ng/l	20000		100	90-110			
Chromium	240000		ng/l	240000		99.8	90-110			
Cobalt	49100		ng/l	50000		98.3	90-110			
Copper	2.01E6		ng/l	2.0000E6		101	90-110			
Lead	198000		ng/l	200000		99.0	90-110			
Manganese	505000		ng/l	500000		101	90-110			
Molybdenum	46900		ng/l	50000		93.9	90-110			
Nickel	115000		ng/l	120000		95.8	90-110			
Selenium	20300		ng/l	20000		101	90-110			
Thallium	483		ng/l	500.00		96.7	90-110			
Vanadium	19800		ng/l	20000		98.9	90-110			
Zinc	507000		ng/l	500000		101	90-110			
Calibration Check (2411074-CCV7)					Prepared: 11/26/24 Analyzed: 11/27/24					
Antimony	20300		ng/l	20000		102	90-110			
Arsenic	20200		ng/l	20000		101	90-110			
Barium	200000		ng/l	200000		100	90-110			
Beryllium	5090		ng/l	5000.0		102	90-110			
Cadmium	20000		ng/l	20000		100	90-110			
Chromium	240000		ng/l	240000		100	90-110			
Cobalt	47800		ng/l	50000		95.7	90-110			
Copper	2.01E6		ng/l	2.0000E6		100	90-110			

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: 12/03/24 12:08
SUBMITTED: 11/25/24
AQS SITE CODE:
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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2411074 - B4K2605										
Calibration Check (2411074-CCV7) Contin					Prepared: 11/26/24 Analyzed: 11/27/24					
Lead	197000		ng/l	200000		98.4	90-110			
Manganese	502000		ng/l	500000		100	90-110			
Molybdenum	46900		ng/l	50000		93.7	90-110			
Nickel	115000		ng/l	120000		95.9	90-110			
Selenium	20600		ng/l	20000		103	90-110			
Thallium	479		ng/l	500.00		95.8	90-110			
Vanadium	19900		ng/l	20000		99.3	90-110			
Zinc	506000		ng/l	500000		101	90-110			
High Cal Check (2411074-HCV1)					Prepared & Analyzed: 11/26/24					
Antimony	40200		ng/l	40000		100	95-105			
Arsenic	39700		ng/l	40000		99.1	95-105			
Barium	398000		ng/l	400000		99.5	95-105			
Beryllium	9930		ng/l	10000		99.3	95-105			
Cadmium	39900		ng/l	40000		99.7	95-105			
Chromium	470000		ng/l	480000		97.9	95-105			
Cobalt	97800		ng/l	100000		97.8	95-105			
Copper	3.88E6		ng/l	4.0000E6		96.9	95-105			
Lead	402000		ng/l	400000		100	95-105			
Manganese	985000		ng/l	1.0000E6		98.5	95-105			
Molybdenum	102000		ng/l	100000		102	95-105			
Nickel	235000		ng/l	240000		98.0	95-105			
Selenium	39800		ng/l	40000		99.5	95-105			
Thallium	1010		ng/l	1000.0		101	95-105			
Vanadium	39500		ng/l	40000		98.8	95-105			
Zinc	984000		ng/l	1.0000E6		98.4	95-105			
Initial Cal Blank (2411074-ICB1)					Prepared & Analyzed: 11/26/24					
Antimony	0.831		ng/l							
Arsenic	0.212		ng/l							
Barium	-0.0464		ng/l							U
Beryllium	-0.0776		ng/l							U
Cadmium	0.0554		ng/l							
Chromium	0.950		ng/l							
Cobalt	0.125		ng/l							
Copper	37.0		ng/l							
Lead	23.9		ng/l							
Manganese	2.75		ng/l							
Molybdenum	0.984		ng/l							
Nickel	0.530		ng/l							

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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2411074 - B4K2605										
Initial Cal Blank (2411074-ICB1) Continu				Prepared & Analyzed: 11/26/24						
Selenium	2.80		ng/l							
Thallium	0.629		ng/l							
Vanadium	-17.1		ng/l							U
Zinc	2.42		ng/l							
Initial Cal Check (2411074-ICV1)				Prepared & Analyzed: 11/26/24						
Antimony	19500		ng/l	20000		97.6	90-110			
Arsenic	18900		ng/l	20000		94.6	90-110			
Barium	186000		ng/l	200000		92.9	90-110			
Beryllium	4950		ng/l	5000.0		98.9	90-110			
Cadmium	20200		ng/l	20000		101	90-110			
Chromium	233000		ng/l	240000		97.1	90-110			
Cobalt	49100		ng/l	50000		98.3	90-110			
Copper	2.05E6		ng/l	2.0000E6		103	90-110			
Lead	198000		ng/l	200000		98.8	90-110			
Manganese	492000		ng/l	500000		98.4	90-110			
Molybdenum	45900		ng/l	50000		91.8	90-110			
Nickel	119000		ng/l	120000		98.8	90-110			
Selenium	19900		ng/l	20000		99.4	90-110			
Thallium	488		ng/l	500.00		97.5	90-110			
Vanadium	19800		ng/l	20000		98.8	90-110			
Zinc	524000		ng/l	500000		105	90-110			
Interference Check A (2411074-IFA1)				Prepared & Analyzed: 11/26/24						
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	319000		ng/l	300000		106	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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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2411074 - B4K2605										
Interference Check B (2411074-IFB1)					Prepared & Analyzed: 11/26/24					
Antimony	18300		ng/l	20000		91.3	80-120			
Arsenic	20200		ng/l	20000		101	80-120			
Barium	170000		ng/l	200000		84.8	80-120			
Beryllium	4490		ng/l	5000.0		89.8	80-120			
Cadmium	18100		ng/l	20000		90.7	80-120			
Chromium	243000		ng/l	240000		101	80-120			
Cobalt	47800		ng/l	50000		95.6	80-120			
Copper	1.84E6		ng/l	2.0000E6		92.0	80-120			
Lead	210000		ng/l	200000		105	80-120			
Manganese	501000		ng/l	500000		100	80-120			
Molybdenum	361000		ng/l	350000		103	80-120			
Nickel	108000		ng/l	120000		90.1	80-120			
Selenium	18800		ng/l	20000		94.2	80-120			
Thallium	528		ng/l	500.00		106	80-120			
Vanadium	20800		ng/l	20000		104	80-120			
Zinc	438000		ng/l	500000		87.6	80-120			
Batch B4K2605 - ICP-MS Extraction										
Blank (B4K2605-BLK1)					Prepared & Analyzed: 11/26/24					
Antimony	ND	0.0386	ng/m³ Air							SL, U
Arsenic	ND	0.00937	ng/m³ Air							U
Barium	ND	1.07	ng/m³ Air							U
Beryllium	ND	0.00320	ng/m³ Air							U
Cadmium	ND	0.0741	ng/m³ Air							U
Chromium	ND	2.21	ng/m³ Air							U
Cobalt	ND	0.0436	ng/m³ Air							U
Copper	ND	2.63	ng/m³ Air							U
Lead	ND	0.214	ng/m³ Air							U
Manganese	ND	1.89	ng/m³ Air							U
Molybdenum	ND	0.359	ng/m³ Air							U
Nickel	ND	0.652	ng/m³ Air							U
Selenium	ND	0.00896	ng/m³ Air							U
Thallium	ND	5.89E-4	ng/m³ Air							U
Vanadium	ND	0.0529	ng/m³ Air							U
Zinc	ND	76.8	ng/m³ Air							U
LCS (B4K2605-BS1)					Prepared & Analyzed: 11/26/24					
Antimony	0.626	0.0386	ng/m³ Air	1.3829		45.2	80-120			SL
Arsenic	2.68	0.00937	ng/m³ Air	2.7658		96.9	80-120			
Barium	27.2	1.07	ng/m³ Air	27.658		98.5	80-120			

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4K2605 - ICP-MS Extraction										
LCS (B4K2605-BS1) Continued					Prepared & Analyzed: 11/26/24					
Beryllium	1.38	0.00320	ng/m³ Air	1.3829		99.6	80-120			
Cadmium	1.44	0.0741	ng/m³ Air	1.3829		104	80-120			
Chromium	14.7	2.21	ng/m³ Air	13.829		106	80-120			
Cobalt	1.43	0.0436	ng/m³ Air	1.3829		103	80-120			
Copper	29.8	2.63	ng/m³ Air	27.658		108	80-120			
Lead	13.7	0.214	ng/m³ Air	13.829		98.9	80-120			
Manganese	8.39	1.89	ng/m³ Air	8.2975		101	80-120			
Molybdenum	1.45	0.359	ng/m³ Air	1.3829		105	80-120			
Nickel	3.08	0.652	ng/m³ Air	2.7658		111	80-120			
Selenium	2.83	0.00896	ng/m³ Air	2.7658		102	80-120			
Thallium	0.140	5.89E-4	ng/m³ Air	0.13829		101	80-120			
Vanadium	2.76	0.0529	ng/m³ Air	2.7658		99.6	80-120			
Zinc	90.7	76.8	ng/m³ Air	82.975		109	80-120			
LCS (B4K2605-BS2)					Prepared & Analyzed: 11/26/24					
Antimony	0.652	0.0386	ng/m³ Air	1.3829		47.1	80-120			SL
Arsenic	2.67	0.00937	ng/m³ Air	2.7658		96.4	80-120			
Barium	26.8	1.07	ng/m³ Air	27.658		97.1	80-120			
Beryllium	1.37	0.00320	ng/m³ Air	1.3829		98.8	80-120			
Cadmium	1.44	0.0741	ng/m³ Air	1.3829		104	80-120			
Chromium	14.5	2.21	ng/m³ Air	13.829		105	80-120			
Cobalt	1.40	0.0436	ng/m³ Air	1.3829		101	80-120			
Copper	29.1	2.63	ng/m³ Air	27.658		105	80-120			
Lead	13.6	0.214	ng/m³ Air	13.829		98.5	80-120			
Manganese	8.28	1.89	ng/m³ Air	8.2975		99.8	80-120			
Molybdenum	1.44	0.359	ng/m³ Air	1.3829		104	80-120			
Nickel	3.06	0.652	ng/m³ Air	2.7658		111	80-120			
Selenium	2.83	0.00896	ng/m³ Air	2.7658		102	80-120			
Thallium	0.139	5.89E-4	ng/m³ Air	0.13829		101	80-120			
Vanadium	2.72	0.0529	ng/m³ Air	2.7658		98.2	80-120			
Zinc	90.3	76.8	ng/m³ Air	82.975		109	80-120			
LCS (B4K2605-BS3)					Prepared & Analyzed: 11/26/24					
Antimony	1.41	0.0386	ng/m³ Air	1.3829		102	80-120			
Arsenic	2.69	0.00937	ng/m³ Air	2.7658		97.2	80-120			
Barium	26.5	1.07	ng/m³ Air	27.658		95.8	80-120			
Beryllium	1.39	0.00320	ng/m³ Air	1.3829		101	80-120			
Cadmium	1.44	0.0741	ng/m³ Air	1.3829		104	80-120			
Chromium	13.6	2.21	ng/m³ Air	13.829		98.5	80-120			
Cobalt	1.41	0.0436	ng/m³ Air	1.3829		102	80-120			

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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4K2605 - ICP-MS Extraction										
LCS (B4K2605-BS3) Continued					Prepared & Analyzed: 11/26/24					
Copper	29.2	2.63	ng/m³ Air	27.658		106	80-120			
Lead	13.6	0.214	ng/m³ Air	13.829		98.1	80-120			
Manganese	8.33	1.89	ng/m³ Air	8.2975		100	80-120			
Molybdenum	1.26	0.359	ng/m³ Air	1.3829		90.9	80-120			
Nickel	2.81	0.652	ng/m³ Air	2.7658		102	80-120			
Selenium	2.92	0.00896	ng/m³ Air	2.7658		106	80-120			
Thallium	0.140	5.89E-4	ng/m³ Air	0.13829		101	80-120			
Vanadium	2.77	0.0529	ng/m³ Air	2.7658		100	80-120			
Zinc	88.1	76.8	ng/m³ Air	82.975		106	80-120			
LCS (B4K2605-BS4)					Prepared & Analyzed: 11/26/24					
Antimony	1.41	0.0386	ng/m³ Air	1.3829		102	80-120			SL
Arsenic	2.68	0.00937	ng/m³ Air	2.7658		96.8	80-120			
Barium	26.5	1.07	ng/m³ Air	27.658		95.9	80-120			
Beryllium	1.39	0.00320	ng/m³ Air	1.3829		101	80-120			
Cadmium	1.43	0.0741	ng/m³ Air	1.3829		104	80-120			
Chromium	13.6	2.21	ng/m³ Air	13.829		98.1	80-120			
Cobalt	1.39	0.0436	ng/m³ Air	1.3829		100	80-120			
Copper	28.7	2.63	ng/m³ Air	27.658		104	80-120			
Lead	13.8	0.214	ng/m³ Air	13.829		99.6	80-120			
Manganese	8.28	1.89	ng/m³ Air	8.2975		99.8	80-120			
Molybdenum	1.27	0.359	ng/m³ Air	1.3829		91.6	80-120			
Nickel	2.79	0.652	ng/m³ Air	2.7658		101	80-120			
Selenium	2.84	0.00896	ng/m³ Air	2.7658		103	80-120			
Thallium	0.138	5.89E-4	ng/m³ Air	0.13829		100	80-120			
Vanadium	2.74	0.0529	ng/m³ Air	2.7658		99.1	80-120			
Zinc	87.4	76.8	ng/m³ Air	82.975		105	80-120			
Duplicate (B4K2605-DUP1)		**Source: 4112522-24**			Prepared & Analyzed: 11/26/24					
Antimony	0.195	0.0325	ng/m³ Air		0.194			0.691	10	SL
Arsenic	0.542	0.00790	ng/m³ Air		0.550			1.58	10	
Barium	6.23	0.902	ng/m³ Air		6.30			1.13	10	
Beryllium	0.0195	0.00270	ng/m³ Air		0.0198			1.67	10	
Cadmium	ND	0.0625	ng/m³ Air		ND				10	U
Chromium	3.90	1.86	ng/m³ Air		3.54			9.78	10	
Cobalt	0.783	0.0368	ng/m³ Air		0.774			1.14	10	
Copper	49.7	2.22	ng/m³ Air		48.7			2.02	10	
Lead	0.986	0.180	ng/m³ Air		0.942			4.60	10	
Manganese	18.8	1.59	ng/m³ Air		18.5			1.32	10	
Molybdenum	2.07	0.303	ng/m³ Air		2.01			2.72	10	

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4K2605 - ICP-MS Extraction										
Duplicate (B4K2605-DUP1) Continued			**Source: 4112522-24**		Prepared & Analyzed: 11/26/24					
Nickel	2.58	0.550	ng/m³ Air		2.37			8.23	10	
Selenium	0.233	0.00755	ng/m³ Air		0.228			1.93	10	
Thallium	0.00189	4.97E-4	ng/m³ Air		0.00180			4.95	10	
Vanadium	2.48	0.0446	ng/m³ Air		2.43			2.08	10	
Zinc	ND	64.7	ng/m³ Air		ND				10	U
Duplicate (B4K2605-DUP2)			**Source: 4112522-02**		Prepared & Analyzed: 11/26/24					
Antimony	0.158	0.0290	ng/m³ Air		0.163			3.41	10	SL
Arsenic	0.973	0.00703	ng/m³ Air		0.831			15.7	10	
Barium	9.34	0.803	ng/m³ Air		9.50			1.64	10	
Beryllium	0.0415	0.00240	ng/m³ Air		0.0413			0.550	10	
Cadmium	0.145	0.0556	ng/m³ Air		0.139			3.85	10	
Chromium	5.80	1.66	ng/m³ Air		5.63			2.94	10	
Cobalt	1.46	0.0327	ng/m³ Air		1.46			0.222	10	
Copper	34.3	1.97	ng/m³ Air		32.7			4.96	10	
Lead	2.55	0.161	ng/m³ Air		3.05			17.8	10	
Manganese	39.0	1.42	ng/m³ Air		39.0			0.0567	10	
Molybdenum	1.08	0.270	ng/m³ Air		1.09			0.599	10	
Nickel	3.76	0.489	ng/m³ Air		3.76			0.189	10	
Selenium	0.199	0.00673	ng/m³ Air		0.201			1.01	10	
Thallium	0.00188	4.42E-4	ng/m³ Air		0.00207			9.40	10	
Vanadium	4.44	0.0397	ng/m³ Air		4.36			1.77	10	
Zinc	ND	57.7	ng/m³ Air		ND				10	U
Duplicate (B4K2605-DUP3)			**Source: 4112522-12**		Prepared & Analyzed: 11/26/24					
Antimony	0.135	0.0347	ng/m³ Air		0.136			0.343	10	SL
Arsenic	0.0869	0.00844	ng/m³ Air		0.0845			2.84	10	
Barium	2.36	0.963	ng/m³ Air		2.35			0.395	10	
Beryllium	0.0106	0.00288	ng/m³ Air		0.0104			1.54	10	
Cadmium	ND	0.0667	ng/m³ Air		ND				10	U
Chromium	ND	1.99	ng/m³ Air		ND				10	U
Cobalt	0.227	0.0393	ng/m³ Air		0.224			1.23	10	
Copper	24.7	2.37	ng/m³ Air		24.8			0.250	10	
Lead	ND	0.193	ng/m³ Air		ND				10	U
Manganese	6.19	1.70	ng/m³ Air		6.20			0.103	10	
Molybdenum	1.53	0.323	ng/m³ Air		1.52			0.633	10	
Nickel	0.843	0.587	ng/m³ Air		0.846			0.451	10	
Selenium	0.164	0.00807	ng/m³ Air		0.178			8.22	10	
Thallium	5.98E-4	5.30E-4	ng/m³ Air		5.53E-4			7.87	10	
Vanadium	0.656	0.0476	ng/m³ Air		0.663			1.03	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
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4K2605 - ICP-MS Extraction										
Duplicate (B4K2605-DUP3) Continued		**Source: 4112522-12**		Prepared & Analyzed: 11/26/24						
Zinc	ND	69.1	ng/m³ Air		ND				10	U
Duplicate (B4K2605-DUP4)		**Source: 4112522-31**		Prepared: 11/26/24 Analyzed: 11/27/24						
Antimony	0.0690	0.0345	ng/m³ Air		0.0691			0.156	10	SL
Arsenic	0.597	0.00836	ng/m³ Air		0.600			0.561	10	
Barium	4.26	0.955	ng/m³ Air		4.27			0.306	10	
Beryllium	0.0233	0.00286	ng/m³ Air		0.0234			0.585	10	
Cadmium	ND	0.0661	ng/m³ Air		ND				10	U
Chromium	3.25	1.97	ng/m³ Air		3.20			1.40	10	
Cobalt	0.694	0.0389	ng/m³ Air		0.692			0.394	10	
Copper	28.2	2.35	ng/m³ Air		28.0			0.684	10	
Lead	0.417	0.191	ng/m³ Air		0.420			0.513	10	
Manganese	24.4	1.69	ng/m³ Air		24.2			1.04	10	
Molybdenum	1.15	0.320	ng/m³ Air		1.14			0.419	10	
Nickel	1.83	0.582	ng/m³ Air		1.81			1.12	10	
Selenium	0.196	0.00800	ng/m³ Air		0.206			4.85	10	
Thallium	0.00162	5.26E-4	ng/m³ Air		0.00166			2.62	10	
Vanadium	2.07	0.0472	ng/m³ Air		2.07			0.281	10	
Zinc	ND	68.5	ng/m³ Air		ND				10	U
Matrix Spike (B4K2605-MS1)		**Source: 4112522-24**		Prepared & Analyzed: 11/26/24						
Antimony	0.864	0.0325	ng/m³ Air	1.1657	0.194	57.5	80-120			SL
Arsenic	2.71	0.00790	ng/m³ Air	2.3315	0.550	92.4	80-120			
Barium	27.5	0.902	ng/m³ Air	23.315	6.30	90.8	80-120			
Beryllium	1.19	0.00270	ng/m³ Air	1.1657	0.0198	100	80-120			
Cadmium	1.17	0.0625	ng/m³ Air	1.1657	ND	100	80-120			
Chromium	14.7	1.86	ng/m³ Air	11.657	3.54	95.9	80-120			
Cobalt	1.94	0.0368	ng/m³ Air	1.1657	0.774	99.9	80-120			
Copper	72.3	2.22	ng/m³ Air	23.315	48.7	101	80-120			
Lead	12.7	0.180	ng/m³ Air	11.657	0.942	101	80-120			
Manganese	25.6	1.59	ng/m³ Air	6.9945	18.5	101	80-120			
Molybdenum	3.01	0.303	ng/m³ Air	1.1657	2.01	85.4	80-120			
Nickel	4.68	0.550	ng/m³ Air	2.3315	2.37	99.0	80-120			
Selenium	2.44	0.00755	ng/m³ Air	2.3315	0.228	94.8	80-120			
Thallium	0.115	4.97E-4	ng/m³ Air	0.11657	0.00180	96.8	80-120			
Vanadium	4.76	0.0446	ng/m³ Air	2.3315	2.43	100	80-120			
Zinc	90.1	64.7	ng/m³ Air	69.945	ND	129	80-120			
Matrix Spike (B4K2605-MS2)		**Source: 4112522-02**		Prepared & Analyzed: 11/26/24						
Antimony	0.690	0.0290	ng/m³ Air	1.0382	0.163	50.8	80-120			SL
Arsenic	2.66	0.00703	ng/m³ Air	2.0764	0.831	88.0	80-120			

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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: 12/03/24 12:08
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AQS SITE CODE:
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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4K2605 - ICP-MS Extraction										
Matrix Spike (B4K2605-MS2) Continued Source: 4112522-02 Prepared & Analyzed: 11/26/24										
Barium	28.1	0.803	ng/m³ Air	20.764	9.50	89.4	80-120			
Beryllium	1.09	0.00240	ng/m³ Air	1.0382	0.0413	101	80-120			
Cadmium	1.26	0.0556	ng/m³ Air	1.0382	0.139	108	80-120			
Chromium	15.5	1.66	ng/m³ Air	10.382	5.63	95.3	80-120			
Cobalt	2.49	0.0327	ng/m³ Air	1.0382	1.46	99.1	80-120			
Copper	55.7	1.97	ng/m³ Air	20.764	32.7	111	80-120			
Lead	13.1	0.161	ng/m³ Air	10.382	3.05	97.2	80-120			
Manganese	45.4	1.42	ng/m³ Air	6.2293	39.0	103	80-120			
Molybdenum	1.87	0.270	ng/m³ Air	1.0382	1.09	75.4	80-120			QM-07
Nickel	5.86	0.489	ng/m³ Air	2.0764	3.76	101	80-120			
Selenium	2.08	0.00673	ng/m³ Air	2.0764	0.201	90.4	80-120			
Thallium	0.101	4.42E-4	ng/m³ Air	0.10382	0.00207	95.4	80-120			
Vanadium	6.47	0.0397	ng/m³ Air	2.0764	4.36	102	80-120			
Zinc	98.7	57.7	ng/m³ Air	62.293	ND	158	80-120			
Matrix Spike Dup (B4K2605-MSD1) Source: 4112522-24 Prepared & Analyzed: 11/26/24										
Antimony	0.857	0.0325	ng/m³ Air	1.1657	0.194	56.9	80-120	0.829	20	SL
Arsenic	2.71	0.00790	ng/m³ Air	2.3315	0.550	92.7	80-120	0.257	20	
Barium	27.9	0.902	ng/m³ Air	23.315	6.30	92.8	80-120	1.62	20	
Beryllium	1.18	0.00270	ng/m³ Air	1.1657	0.0198	99.5	80-120	0.712	20	
Cadmium	1.18	0.0625	ng/m³ Air	1.1657	ND	101	80-120	0.872	20	
Chromium	14.7	1.86	ng/m³ Air	11.657	3.54	96.0	80-120	0.116	20	
Cobalt	1.93	0.0368	ng/m³ Air	1.1657	0.774	98.9	80-120	0.598	20	
Copper	73.1	2.22	ng/m³ Air	23.315	48.7	105	80-120	1.04	20	
Lead	12.6	0.180	ng/m³ Air	11.657	0.942	100	80-120	0.450	20	
Manganese	25.4	1.59	ng/m³ Air	6.9945	18.5	98.6	80-120	0.671	20	
Molybdenum	3.00	0.303	ng/m³ Air	1.1657	2.01	84.8	80-120	0.225	20	
Nickel	4.69	0.550	ng/m³ Air	2.3315	2.37	99.4	80-120	0.166	20	
Selenium	2.47	0.00755	ng/m³ Air	2.3315	0.228	96.0	80-120	1.19	20	
Thallium	0.117	4.97E-4	ng/m³ Air	0.11657	0.00180	98.9	80-120	2.13	20	
Vanadium	4.74	0.0446	ng/m³ Air	2.3315	2.43	99.3	80-120	0.426	20	
Zinc	91.8	64.7	ng/m³ Air	69.945	ND	131	80-120	1.82	20	
Matrix Spike Dup (B4K2605-MSD2) Source: 4112522-02 Prepared & Analyzed: 11/26/24										
Antimony	0.630	0.0290	ng/m³ Air	1.0382	0.163	45.0	80-120	9.11	20	SL
Arsenic	2.46	0.00703	ng/m³ Air	2.0764	0.831	78.3	80-120	7.83	20	QM-07
Barium	26.1	0.803	ng/m³ Air	20.764	9.50	80.0	80-120	7.17	20	
Beryllium	1.00	0.00240	ng/m³ Air	1.0382	0.0413	92.7	80-120	8.01	20	
Cadmium	1.05	0.0556	ng/m³ Air	1.0382	0.139	87.8	80-120	18.0	20	
Chromium	14.7	1.66	ng/m³ Air	10.382	5.63	87.3	80-120	5.53	20	

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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4K2605 - ICP-MS Extraction										
Matrix Spike Dup (B4K2605-MSD2) Conti			**Source: 4112522-02**			Prepared & Analyzed: 11/26/24				
Cobalt	2.35	0.0327	ng/m³ Air	1.0382	1.46	85.0	80-120	6.04	20	
Copper	57.9	1.97	ng/m³ Air	20.764	32.7	122	80-120	3.94	20	QM-07
Lead	12.3	0.161	ng/m³ Air	10.382	3.05	88.9	80-120	6.76	20	
Manganese	42.4	1.42	ng/m³ Air	6.2293	39.0	54.8	80-120	6.79	20	QM-07
Molybdenum	1.74	0.270	ng/m³ Air	1.0382	1.09	62.8	80-120	7.24	20	QM-07
Nickel	5.59	0.489	ng/m³ Air	2.0764	3.76	88.0	80-120	4.73	20	
Selenium	1.94	0.00673	ng/m³ Air	2.0764	0.201	83.7	80-120	6.88	20	
Thallium	0.0922	4.42E-4	ng/m³ Air	0.10382	0.00207	86.8	80-120	9.21	20	
Vanadium	6.04	0.0397	ng/m³ Air	2.0764	4.36	80.9	80-120	6.88	20	
Zinc	93.9	57.7	ng/m³ Air	62.293	ND	151	80-120	5.01	20	
Post Spike (B4K2605-PS1)			**Source: 4112522-24**			Prepared & Analyzed: 11/26/24				
Antimony	0.423	0.0325	ng/m³ Air	0.23315	0.194	98.5	75-125			SL
Arsenic	1.60	0.00790	ng/m³ Air	1.1657	0.550	90.2	75-125			
Barium	8.27	0.902	ng/m³ Air	2.3315	6.30	84.7	75-125			
Beryllium	0.256	0.00270	ng/m³ Air	0.23315	0.0198	101	75-125			
Cadmium	0.129	0.0625	ng/m³ Air	0.11657	ND	110	75-125			
Chromium	4.64	1.86	ng/m³ Air	1.1657	3.54	94.1	75-125			
Cobalt	0.997	0.0368	ng/m³ Air	0.23315	0.774	95.6	75-125			
Copper	60.3	2.22	ng/m³ Air	11.657	48.7	99.7	75-125			
Lead	24.2	0.180	ng/m³ Air	23.315	0.942	99.6	75-125			
Manganese	20.8	1.59	ng/m³ Air	2.3315	18.5	99.0	75-125			
Molybdenum	2.97	0.303	ng/m³ Air	1.1657	2.01	82.1	75-125			
Nickel	4.60	0.550	ng/m³ Air	2.3315	2.37	95.3	75-125			
Selenium	1.28	0.00755	ng/m³ Air	1.1657	0.228	90.3	75-125			
Thallium	0.0571	4.97E-4	ng/m³ Air	5.8287E-2	0.00180	94.8	75-125			
Vanadium	3.57	0.0446	ng/m³ Air	1.1657	2.43	97.5	75-125			
Zinc	ND	64.7	ng/m³ Air	23.315	ND		75-125			U
Post Spike (B4K2605-PS2)			**Source: 4112522-02**			Prepared & Analyzed: 11/26/24				
Antimony	0.363	0.0290	ng/m³ Air	0.20764	0.163	96.2	75-125			SL
Arsenic	1.75	0.00703	ng/m³ Air	1.0382	0.831	88.2	75-125			
Barium	11.2	0.803	ng/m³ Air	2.0764	9.50	83.5	75-125			
Beryllium	0.246	0.00240	ng/m³ Air	0.20764	0.0413	98.4	75-125			
Cadmium	0.235	0.0556	ng/m³ Air	0.10382	0.139	92.1	75-125			
Chromium	6.60	1.66	ng/m³ Air	1.0382	5.63	93.8	75-125			
Cobalt	1.66	0.0327	ng/m³ Air	0.20764	1.46	93.5	75-125			
Copper	43.0	1.97	ng/m³ Air	10.382	32.7	99.5	75-125			
Lead	23.3	0.161	ng/m³ Air	20.764	3.05	97.4	75-125			
Manganese	40.9	1.42	ng/m³ Air	2.0764	39.0	90.2	75-125			

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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4K2605 - ICP-MS Extraction										
Post Spike (B4K2605-PS2) Continued			**Source: 4112522-02**		Prepared & Analyzed: 11/26/24					
Molybdenum	1.83	0.270	ng/m³ Air	1.0382	1.09	71.4	75-125			PS-01
Nickel	5.69	0.489	ng/m³ Air	2.0764	3.76	92.8	75-125			
Selenium	1.11	0.00673	ng/m³ Air	1.0382	0.201	87.9	75-125			
Thallium	0.0502	4.42E-4	ng/m³ Air	5.1911E-2	0.00207	92.8	75-125			
Vanadium	5.34	0.0397	ng/m³ Air	1.0382	4.36	94.6	75-125			
Zinc	ND	57.7	ng/m³ Air	20.764	ND		75-125			U
Dilution Check (B4K2605-SRL1)			**Source: 4112522-24**		Prepared & Analyzed: 11/26/24					
Antimony	0.189	0.163	ng/m³ Air		0.194			2.24	10	SL
Arsenic	0.547	0.0395	ng/m³ Air		0.550			0.678	10	
Barium	6.43	4.51	ng/m³ Air		6.30			2.10	10	
Beryllium	0.0199	0.0135	ng/m³ Air		0.0198			0.419	10	
Cadmium	ND	0.312	ng/m³ Air		ND				10	U
Chromium	ND	9.31	ng/m³ Air		ND				10	U
Cobalt	0.798	0.184	ng/m³ Air		0.774			2.98	10	
Copper	49.8	11.1	ng/m³ Air		48.7			2.23	10	
Lead	0.911	0.902	ng/m³ Air		0.942			3.30	10	
Manganese	19.1	7.97	ng/m³ Air		18.5			2.94	10	
Molybdenum	2.13	1.51	ng/m³ Air		2.01			5.70	10	
Nickel	ND	2.75	ng/m³ Air		ND				10	U
Selenium	0.232	0.0378	ng/m³ Air		0.228			1.86	10	
Thallium	0.00384	0.00248	ng/m³ Air		ND			72.5	10	
Vanadium	2.43	0.223	ng/m³ Air		2.43			0.0447	10	
Zinc	ND	324	ng/m³ Air		ND				10	U
Dilution Check (B4K2605-SRL2)			**Source: 4112522-02**		Prepared & Analyzed: 11/26/24					
Antimony	0.166	0.145	ng/m³ Air		0.163			1.60	10	SL
Arsenic	0.865	0.0352	ng/m³ Air		0.831			3.95	10	
Barium	10.4	4.02	ng/m³ Air		9.50			8.83	10	
Beryllium	0.0426	0.0120	ng/m³ Air		0.0413			3.21	10	
Cadmium	ND	0.278	ng/m³ Air		ND				10	U
Chromium	ND	8.30	ng/m³ Air		ND				10	U
Cobalt	1.55	0.164	ng/m³ Air		1.46			5.51	10	
Copper	34.5	9.87	ng/m³ Air		32.7			5.51	10	
Lead	2.92	0.803	ng/m³ Air		3.05			4.27	10	
Manganese	40.3	7.09	ng/m³ Air		39.0			3.20	10	
Molybdenum	ND	1.35	ng/m³ Air		ND				10	U
Nickel	4.04	2.45	ng/m³ Air		3.76			7.08	10	
Selenium	0.235	0.0336	ng/m³ Air		0.201			15.7	10	SRD-01
Thallium	0.00422	0.00221	ng/m³ Air		ND			68.6	10	

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4K2605 - ICP-MS Extraction										
Dilution Check (B4K2605-SRL2) ContinueSource: 4112522-02 Prepared & Analyzed: 11/26/24										
Vanadium	4.50	0.199	ng/m³ Air		4.36			3.25	10	
Zinc	ND	288	ng/m³ Air		ND				10	U

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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.
PS-01	Post Spike exceeds DQO 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 12/03/2024 and Shanna Vasser 12/03/2024
Laboratory: Eastern Research Group – Morrisville, NC
Collection date(s): 11/14/2024 – 11/20/2024
Report No: 4112522

√	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 barium in MFL-FB01-111424-HM; for barium and nickel in MFL-FB01-111624-HM; and for barium, copper, and nickel in MFL-LB01-111724-HM.