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

September 19 through September 25, 2024
[Report Updated: November 22, 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 September 19 through September 25, 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 September 19 through September 25 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 with the exception of instances of equipment faults, as described below:

- Because of equipment faults, there was one day where the air monitoring period was interrupted as described below:
    - On September 19, air monitoring was conducted at WW Pump Station #4 (AM-02) for only 23 hours

The equipment fault code was the result of a disruption during the one-hour sampling interval within the 24-hour sampling period. This disruption resulted in a shortened monitoring duration which may have influenced the 24-hour time weighted average (TWA) calculation 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. The laboratory was unable to analyze two of the 28 samples during this reporting period. The sample collected at WW Pump Station #4 on September 23 was not analyzed because of non-uniform particulate deposition. The lab recommended indirect preparation of that sample in order to analyze it. Indirect preparation uses heat and acid to remove organic and carbonate material from the filter. Then aliquots of the residue are filtered into a new analytical filter to control the loading of the sample. The sample collected at WW Pump Station #4 on September 24 was not analyzed because it was overloaded with approximately 40% particulate. The lab recommended indirect preparation to analyze that sample as well. Discussion between Tetra Tech and HDOH will take place to determine the next steps for these two samples. This report will be updated if it is decided that the lab is to complete the indirect preparations for the analyses. With the exception of these two samples, 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**).

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 1.1 miles per hour and were generally from a southeast direction. **Table 3** summarizes the collected meteorological data**.**

Quality Control Summary

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

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

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

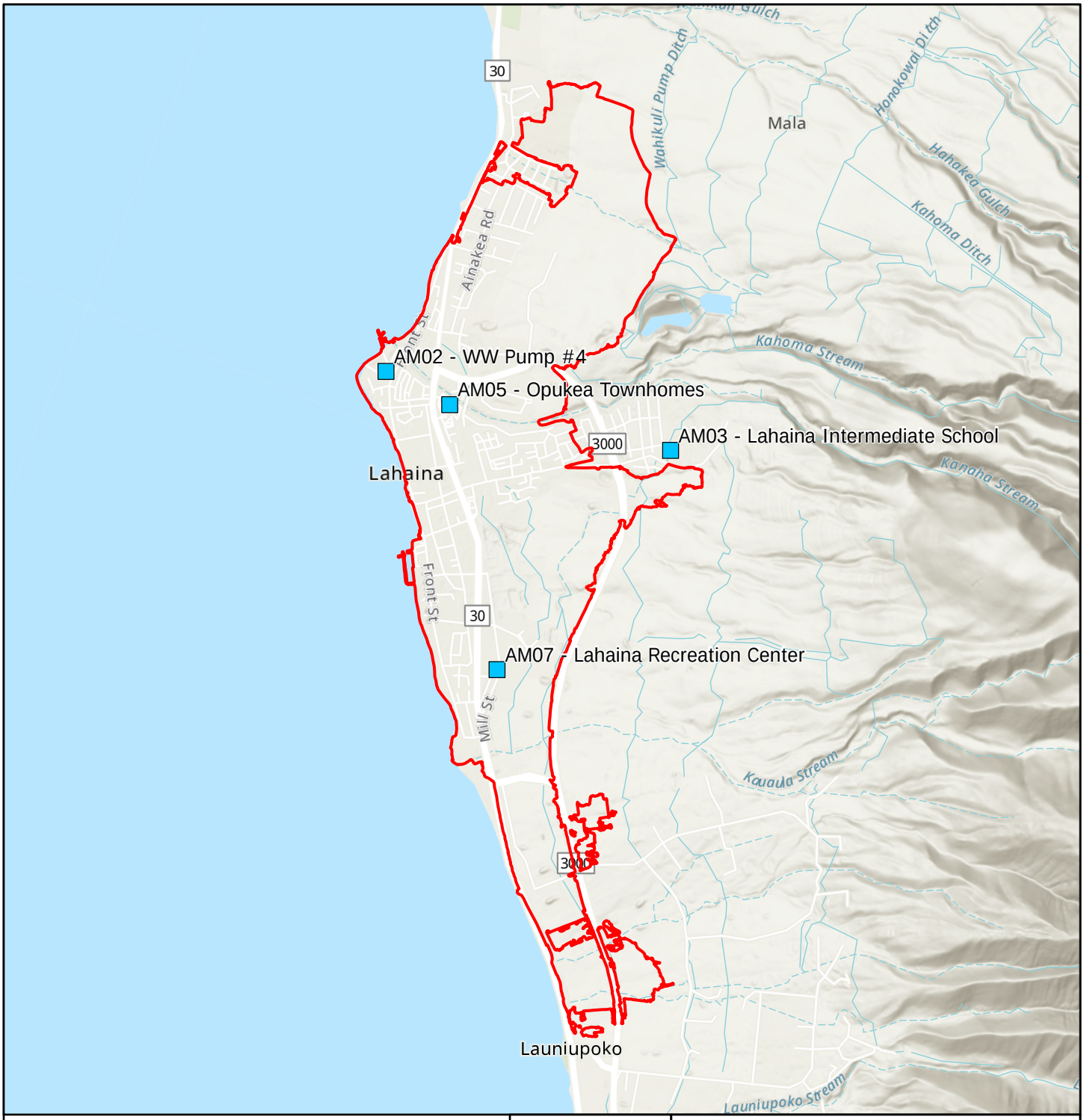
Sampling for metals occurred using Tisch Environmental High Volume Air Samplers (or equivalent) in accordance with the following methods:

- EPA Compendium Method IO-2.1, Sampling of Ambient Air for Total Suspended Particulate Matter (SPM) and for 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
September 19 through September 25, 2024
[Report Updated: November 22, 2024]

Screening Level		TWA Results 150 ($\mu g/m^3$)
9/19/2024	Opukea Townhomes (AM-05)	7.3
	WW Pump Station #4 (AM-02)	6.8*
	Lahaina Intermediate School (AM-03)	46
	Lahaina Recreation Center (AM-07)	6.2
9/20/2024	Opukea Townhomes (AM-05)	8.2
	WW Pump Station #4 (AM-02)	7.0
	Lahaina Intermediate School (AM-03)	142
	Lahaina Recreation Center (AM-07)	95
9/21/2024	Opukea Townhomes (AM-05)	6.4
	WW Pump Station #4 (AM-02)	7.2
	Lahaina Intermediate School (AM-03)	48
	Lahaina Recreation Center (AM-07)	4.2
9/22/2024	Opukea Townhomes (AM-05)	6.8
	WW Pump Station #4 (AM-02)	5.9
	Lahaina Intermediate School (AM-03)	39
	Lahaina Recreation Center (AM-07)	4.3
9/23/2024	Opukea Townhomes (AM-05)	7.1
	WW Pump Station #4 (AM-02)	6.3
	Lahaina Intermediate School (AM-03)	40
	Lahaina Recreation Center (AM-07)	95
9/24/2024	Opukea Townhomes (AM-05)	9.6
	WW Pump Station #4 (AM-02)	11
	Lahaina Intermediate School (AM-03)	47
	Lahaina Recreation Center (AM-07)	6.8
9/25/2024	Opukea Townhomes (AM-05)	6.3
	WW Pump Station #4 (AM-02)	7.5
	Lahaina Intermediate School (AM-03)	40
	Lahaina Recreation Center (AM-07)	92

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 TWA calculation because of an equipment disruption
Results from Opukea Townhomes on 9/24 have been revised from previously submitted report.

Table 2
State of Hawaii, Department of Health, Clean Air Branch
Asbestos and Metals Sampling Results
Maui Wildfires, Lahaina
September 19 through September 25, 2024
[Report Updated: November 22, 2024]

Analyte		Asbestos	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Manganese	Molybdenum	Nickel	Selenium	Thallium	Vanadium	Zinc
Units*		s/cc	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³
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
9/19/2024	Opukea Townhomes (AM-05)	<0.0024	0.0000906	0.000193	0.00326	0.00000844	ND	ND	0.000274	0.0467	0.000444	0.00918	0.00251	0.00107	0.000178	0.000000776	0.00119	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.000119	0.000250	0.00456	0.0000147	ND	0.00222	0.000463	0.0470	0.000705	0.0149	0.00180	0.00142	0.000205	0.000000988	0.00180	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000496	0.000143	0.00278	0.0000163	ND	0.00227	0.000397	0.0673	0.000429	0.0112	0.00228	0.00229	0.000156	0.000000862	0.00117	ND
	Lahaina Recreation Center (AM-07)	<0.0024	0.0000967	0.000410	0.00420	0.0000326	ND	0.0220	0.000885	0.0334	0.000418	0.0294	0.00212	0.0103	0.000238	0.00000151	0.00207	ND
9/20/2024	Opukea Townhomes (AM-05)	<0.0024	0.000107	0.000238	0.00415	0.0000114	ND	0.00257	0.000463	0.0461	0.000468	0.0131	0.00256	0.00151	0.000166	0.000000853	0.00164	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.000110	0.000240	0.00371	0.0000112	0.0000798	0.00242	0.000390	0.0357	0.000664	0.0119	0.00176	0.00130	0.000179	0.000000852	0.00149	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000412	0.000103	0.00208	0.0000130	ND	ND	0.000260	0.0472	0.000187	0.00718	0.00171	0.00117	0.000103	0.000000525	0.000719	ND
	Lahaina Recreation Center (AM-07)	<0.0024	0.000143	0.000369	0.00423	0.0000382	ND	0.00751	0.000808	0.0181	0.000379	0.0280	0.00103	0.00353	0.000175	0.00000134	0.00209	ND
9/21/2024	Opukea Townhomes (AM-05)	<0.0024	0.0000932	0.000153	0.00320	0.00000788	ND	ND	0.000272	0.0558	0.000320	0.00795	0.00184	0.00115	0.000167	0.000000605	0.000980	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.000154	0.000251	0.00383	0.0000100	ND	0.00187	0.000297	0.0231	0.000567	0.00965	0.000914	0.00111	0.000178	0.000000830	0.00110	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000684	0.000154	0.00323	0.0000242	ND	0.00272	0.000412	0.0378	0.000216	0.0103	0.00166	0.00150	0.000147	0.000000707	0.00117	ND
	Lahaina Recreation Center (AM-07)	<0.0024	0.0000712	0.000367	0.00233	0.00000839	ND	0.00201	0.000248	0.0304	0.000193	0.00805	0.00109	0.00100	0.000134	0.000000672	0.000775	ND
9/22/2024	Opukea Townhomes (AM-05)	<0.0024	0.0000978	0.000168	0.00249	0.00000534	ND	ND	0.000196	0.0533	0.000406	0.00581	0.00161	0.000856	0.000136	0.000000703	0.000641	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.0000924	0.000202	0.00353	0.00000855	ND	0.00258	0.000278	0.0210	0.000570	0.00805	0.00105	0.00109	0.000154	0.000000823	0.000873	ND
	Lahaina Intermediate School (AM-03)	<0.0024	ND	0.000130	0.00209	0.0000208	ND	0.00290	0.000339	0.0265	0.000324	0.00839	0.00167	0.00110	0.000103	0.000000715	0.000880	ND
	Lahaina Recreation Center (AM-07)	<0.0024	0.0000589	0.00130	0.00264	0.0000140	ND	0.00367	0.000452	0.0267	0.000447	0.0135	0.00131	0.00145	0.000140	0.00000100	0.00119	ND
9/23/2024	Opukea Townhomes (AM-05)	<0.0024	0.0000597	0.000182	0.00243	0.00000616	ND	0.00231	0.000225	0.0488	0.000588	0.00582	0.00183	0.000948	0.000160	0.00000100	0.000883	ND
	WW Pump Station #4 (AM-02)		0.000115	0.000202	0.00448	0.0000109	ND	0.00393	0.000389	0.0225	0.000663	0.0110	0.00136	0.00131	0.000198	0.00000129	0.00141	ND
	Lahaina Intermediate School (AM-03)	<0.0024	ND	0.000133	0.00197	0.0000133	ND	0.00233	0.000267	0.0358	0.000320	0.00685	0.00190	0.000975	0.000135	0.000000888	0.000811	ND
	Lahaina Recreation Center (AM-07)	<0.0024	0.0000837	0.000532	0.00513	0.0000500	ND	0.00502	0.00111	0.0267	0.000608	0.0409	0.00152	0.00277	0.000276	0.00000239	0.00284	ND
9/24/2024	Opukea Townhomes (AM-05)	<0.0027	0.0000586	0.000174	0.00268	0.00000663	ND	0.00245	0.000231	0.0552	0.000576	0.00676	0.00234	0.000939	0.000207	0.00000102	0.00105	ND
	WW Pump Station #4 (AM-02)		0.000105	0.000359	0.00573	0.0000167	ND	0.00293	0.000496	0.0196	0.00153	0.0160	0.00102	0.00152	0.000208	0.00000118	0.00179	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000626	0.000194	0.00355	0.0000360	ND	0.00351	0.000691	0.0676	0.000405	0.0182	0.00265	0.00195	0.000222	0.00000136	0.00173	ND
	Lahaina Recreation Center (AM-07)	<0.0024	0.0000598	0.000333	0.00322	0.0000207	ND	0.01640	0.000721	0.0205	0.000372	0.0208	0.00153	0.00700	0.000214	0.00000135	0.00176	ND
9/25/2024	Opukea Townhomes (AM-05)	<0.0027	0.0000541	0.000196	0.00334	0.00000916	ND	0.00246	0.000308	0.0527	0.000727	0.00938	0.00230	0.000945	0.000188	0.000000620	0.00112	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.000129	0.000260	0.00564	0.0000145	ND	0.00287	0.000451	0.0223	0.000929	0.0141	0.00138	0.00124	0.000228	0.000000910	0.00161	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000330	0.000153	0.00295	0.0000235	ND	0.00327	0.000471	0.0476	0.000289	0.0125	0.00269	0.00171	0.000183	0.000000911	0.00125	ND
	Lahaina Recreation Center (AM-07)	<0.0024	0.0000505	0.000152	0.00229	0.00000893	ND	0.00863	0.000411	0.0233	0.000246	0.0109	0.00177	0.00387	0.000168	0.000000728	0.000961	ND

95% Upper Confidence Limit[2]	NA	0.000100	0.000320	0.00380	0.0000210	NA	0.00570	0.000510	0.0439	0.000590	0.0156	0.00192	0.00243	0.000190	0.00000110	0.0015	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
Asbestos Sample not analyized by lab. See report for details

Table 3
State of Hawaii, Department of Health, Clean Air Branch
Averaged Meteorological Data
Maui Wildfires, Lahaina
September 19 through September 25, 2024
[Report Updated: November 22, 2024]

Date	Station ID	Weather Station Name	Wind Speed (mph)	Wind Direction (angle)	Temperature (°F)	Rel Humidity (%)	Baro Pressure (mBar)
9/19/2024	AM-02	WW Pump Station #4	1.0	SSE	82	66	762.3
9/19/2024	AM-03	Lahaina Intermediate School	1.1	ESE	80	64	752.9
9/19/2024	AM-05	Opukea Townhomes	1.3	SE	84	63	761.8
9/19/2024	AM-07	Lahaina Recreational Center	1.4	SSE	80	68	761.6
9/20/2024	AM-02	WW Pump Station #4	1.0	S	82	66	761.9
9/20/2024	AM-03	Lahaina Intermediate School	1.0	SE	80	64	752.5
9/20/2024	AM-05	Opukea Townhomes	1.1	SE	84	63	761.4
9/20/2024	AM-07	Lahaina Recreational Center	1.2	S	80	68	761.2
9/21/2024	AM-02	WW Pump Station #4	1.0	SSE	81	62	761.7
9/21/2024	AM-03	Lahaina Intermediate School	1.1	SE	80	60	752.3
9/21/2024	AM-05	Opukea Townhomes	1.2	SE	84	59	761.2
9/21/2024	AM-07	Lahaina Recreational Center	1.4	SSE	81	63	761.0
9/22/2024	AM-02	WW Pump Station #4	0.9	S	81	64	761.3
9/22/2024	AM-03	Lahaina Intermediate School	1.0	ESE	79	62	751.9
9/22/2024	AM-05	Opukea Townhomes	1.1	SE	83	60	760.7
9/22/2024	AM-07	Lahaina Recreational Center	1.4	SE	79	65	760.6
9/23/2024	AM-02	WW Pump Station #4	1.0	SSE	81	66	761.2
9/23/2024	AM-03	Lahaina Intermediate School	1.0	ESE	79	64	751.8
9/23/2024	AM-05	Opukea Townhomes	1.2	SE	83	63	760.7
9/23/2024	AM-07	Lahaina Recreational Center	1.4	SSE	79	70	760.5
9/24/2024	AM-02	WW Pump Station #4	1.0	SSE	82	67	762.1
9/24/2024	AM-03	Lahaina Intermediate School	1.0	ESE	80	65	752.7
9/24/2024	AM-05	Opukea Townhomes	1.1	SSE	84	64	761.5
9/24/2024	AM-07	Lahaina Recreational Center	1.3	SE	80	68	761.4
9/25/2024	AM-02	WW Pump Station #4	1.1	SSE	81	66	762.6
9/25/2024	AM-03	Lahaina Intermediate School	1.1	ESE	80	64	753.3
9/25/2024	AM-05	Opukea Townhomes	1.2	SSE	84	63	762.1
9/25/2024	AM-07	Lahaina Recreational Center	1.5	SE	80	67	761.9

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

Appendix 1

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:	042419874
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:	09/25/2024 09:40 AM
Analysis Date:	09/27/2024
Report Date:	10/01/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM05-091924-AB**		**Sample Description:**	**DL274988**
EMSL Sample Number:	042419874-0001		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7174.5
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):	0.0128
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**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 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**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**

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: 042419874
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: 042419874-0001 **Customer Sample:** MFL-AM05-091924-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
B2	J4	None Detected									
B2	G4	None Detected									
B2	A6	None Detected									
B3	D8	None Detected									
B3	H9	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:	042419874
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:	09/25/2024 09:40 AM
Analysis Date:	09/27/2024
Report Date:	10/01/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-091924-AB**		**Sample Description:**	**DL274928**
EMSL Sample Number:	042419874-0002		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7177.5
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):	0.0128
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**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 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**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**

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: 042419874
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: 042419874-0002 **Customer Sample:** MFL-AM02-091924-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	J4	None Detected									
B5	D6	None Detected									
B5	A4	None Detected									
B6	H3	None Detected									
B6	D5	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:	042419874
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:	09/25/2024 09:40 AM
Analysis Date:	09/30/2024
Report Date:	10/01/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-091924-AB**		**Sample Description:**	**DL274941**
EMSL Sample Number:	042419874-0003		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7162.0
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):	0.0128
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**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 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**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**

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: 042419874
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: 042419874-0003 **Customer Sample:** MFL-AM03-091924-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
C2	C10	None Detected									
C2	F7	None Detected									
C2	J10	None Detected									
C3	J1	None Detected									
C3	C5	None Detected									

Abbreviations used:
XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled
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EMSL Analytical, Inc.
200 Route 130 North Cinnaminson, NJ 08077
Tel/Fax: (800) 220-3675 / (856) 786-5974
http://www.EMSL.com / cinnasblab@EMSL.com

EMSL Order:	042419874
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:	09/25/2024 09:40 AM
Analysis Date:	09/30/2024
Report Date:	10/01/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM07-091924-AB** **Sample Description:** **DL274864**

EMSL Sample Number:	042419874-0004		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7293.9
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):	0.0128
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**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 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**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**

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: 042419874
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: 042419874-0004 **Customer Sample:** MFL-AM07-091924-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	J4	None Detected									
C5	E8	None Detected									
C5	C5	None Detected									
C6	H8	None Detected									
C6	B8	None Detected									

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

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Tel/Fax: (800) 220-3675 / (856) 786-5974
http://www.EMSL.com / cinnasblab@EMSL.com

EMSL Order:	042419874
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:	09/25/2024 09:40 AM
Analysis Date:	09/30/2024
Report Date:	10/01/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-FB01-091924-AB**		**Sample Description:**	**DL274926**
EMSL Sample Number:	042419874-0005		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):	0.0128
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**	**< 23.36**			
Total Amphibole	**ADX**	**0**	**0**	**< 23.36**			
Actinolite	ADX	0	0	< 23.36			
Amosite	ADX	0	0	< 23.36			
Anthophyllite	ADX	0	0	< 23.36			
Crocidolite	ADX	0	0	< 23.36			
Tremolite	ADX	0	0	< 23.36			
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.36**			
Other Minerals	-	0	0	< 23.36			
Total All Structures	**-**	**0**	**0**	**< 23.36**			

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**	**< 23.36**			
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.36**			
Actinolite	ADX	0	0	< 23.36			
Amosite	ADX	0	0	< 23.36			
Anthophyllite	ADX	0	0	< 23.36			
Crocidolite	ADX	0	0	< 23.36			
Tremolite	ADX	0	0	< 23.36			
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.36**			
Other Minerals	-	0	0	< 23.36			
Total All Structures (PCMe)	**-**	**0**	**0**	**< 23.36**			

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:	**042419874**
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: 042419874-0005 **Customer Sample:** MFL-FB01-091924-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	A6	None Detected									
D2	C8	None Detected									
D2	E4	None Detected									
D2	G6	None Detected									
D2	H5	None Detected									
D3	J4	None Detected									
D3	H3	None Detected									
D3	F7	None Detected									
D3	D5	None Detected									
D3	B2	None Detected									

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

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:	042419874
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:	09/25/2024 09:40 AM
Analysis Date:	09/30/2024
Report Date:	10/01/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM05-092024-AB**		**Sample Description:**	**DL274959**
EMSL Sample Number:	042419874-0006		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7155.8
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):	0.0128
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**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 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**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**

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: 042419874
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: 042419874-0006 **Customer Sample:** MFL-AM05-092024-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	I4	None Detected									
D5	F2	None Detected									
D5	C4	None Detected									
D6	G4	None Detected									
D6	C5	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:	042419874
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:	09/25/2024 09:40 AM
Analysis Date:	09/30/2024
Report Date:	10/01/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-092024-AB**		**Sample Description:**	**DL274905**
EMSL Sample Number:	042419874-0007		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7261.7
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):	0.0128
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**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 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**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**

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: 042419874
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: 042419874-0007 **Customer Sample:** MFL-AM02-092024-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
E2	I6	None Detected									
E2	F7	None Detected									
E2	B4	None Detected									
E3	C9	None Detected									
E3	J7	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:	042419874
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
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Report Date:	10/01/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-092024-AB**		**Sample Description:**	**DL274921**
EMSL Sample Number:	042419874-0008		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7175.6
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):	0.0128
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**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 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**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**

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: 042419874
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: 042419874-0008 **Customer Sample:** MFL-AM03-092024-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	C7	None Detected									
E5	F8	None Detected									
E5	H9	None Detected									
E6	C10	None Detected									
E6	F7	None Detected									

Abbreviations used:
XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled
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EMSL Analytical, Inc.
200 Route 130 North Cinnaminson, NJ 08077
Tel/Fax: (800) 220-3675 / (856) 786-5974
http://www.EMSL.com / cinnasblab@EMSL.com

EMSL Order:	042419874
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:	09/25/2024 09:40 AM
Analysis Date:	09/30/2024
Report Date:	10/01/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM07-092024-AB**		**Sample Description:**	**DL274862**
EMSL Sample Number:	042419874-0009		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	4770.7
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):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	7
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**	**< 33.37**	**< 0.0027**	**Not Applicable**	**0.0027**
Total Amphibole	**ADX**	**0**	**0**	**< 33.37**	**< 0.0027**	**Not Applicable**	**0.0027**
Actinolite	ADX	0	0	< 33.37	< 0.0027	Not Applicable	0.0027
Amosite	ADX	0	0	< 33.37	< 0.0027	Not Applicable	0.0027
Anthophyllite	ADX	0	0	< 33.37	< 0.0027	Not Applicable	0.0027
Crocidolite	ADX	0	0	< 33.37	< 0.0027	Not Applicable	0.0027
Tremolite	ADX	0	0	< 33.37	< 0.0027	Not Applicable	0.0027
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 33.37**	**< 0.0027**	**Not Applicable**	**0.0027**
Other Minerals	-	0	0	< 33.37	< 0.0027	Not Applicable	0.0027
Total All Structures	**-**	**0**	**0**	**< 33.37**	**< 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**	**< 33.37**	**< 0.0027**	**Not Applicable**	**0.0027**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 33.37**	**< 0.0027**	**Not Applicable**	**0.0027**
Actinolite	ADX	0	0	< 33.37	< 0.0027	Not Applicable	0.0027
Amosite	ADX	0	0	< 33.37	< 0.0027	Not Applicable	0.0027
Anthophyllite	ADX	0	0	< 33.37	< 0.0027	Not Applicable	0.0027
Crocidolite	ADX	0	0	< 33.37	< 0.0027	Not Applicable	0.0027
Tremolite	ADX	0	0	< 33.37	< 0.0027	Not Applicable	0.0027
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 33.37**	**< 0.0027**	**Not Applicable**	**0.0027**
Other Minerals	-	0	0	< 33.37	< 0.0027	Not Applicable	0.0027
Total All Structures (PCMe)	**-**	**0**	**0**	**< 33.37**	**< 0.0027**	**Not Applicable**	**0.0027**

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: 042419874
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: 042419874-0009 **Customer Sample:** MFL-AM07-092024-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
F1	D4	None Detected									
F1	F7	None Detected									
F1	H5	None Detected									
F2	C6	None Detected									
F2	E8	None Detected									
F2	H6	None Detected									
F2	J7	None Detected									

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

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Tel/Fax: (800) 220-3675 / (856) 786-5974
http://www.EMSL.com / cinnasblab@EMSL.com

EMSL Order:	042419874
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:	09/25/2024 09:40 AM
Analysis Date:	09/30/2024
Report Date:	10/01/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-092024-AB** **Sample Description: DL274936**

EMSL Sample Number:	042419874-0010		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):	0.0128
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**	**< 23.36**			
Total Amphibole	**ADX**	**0**	**0**	**< 23.36**			
Actinolite	ADX	0	0	< 23.36			
Amosite	ADX	0	0	< 23.36			
Anthophyllite	ADX	0	0	< 23.36			
Crocidolite	ADX	0	0	< 23.36			
Tremolite	ADX	0	0	< 23.36			
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.36**			
Other Minerals	-	0	0	< 23.36			
Total All Structures	**-**	**0**	**0**	**< 23.36**			

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**	**< 23.36**			
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.36**			
Actinolite	ADX	0	0	< 23.36			
Amosite	ADX	0	0	< 23.36			
Anthophyllite	ADX	0	0	< 23.36			
Crocidolite	ADX	0	0	< 23.36			
Tremolite	ADX	0	0	< 23.36			
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.36**			
Other Minerals	-	0	0	< 23.36			
Total All Structures (PCMe)	**-**	**0**	**0**	**< 23.36**			

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: 042419874
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: 042419874-0010 **Customer Sample:** MFL-FB01-092024-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	A9	None Detected									
F5	C10	None Detected									
F5	E7	None Detected									
F5	G10	None Detected									
F5	I6	None Detected									
F6	J2	None Detected									
F6	H1	None Detected									
F6	D2	None Detected									
F6	B1	None Detected									
F6	A3	None Detected									

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

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:	042419874
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:	09/25/2024 09:40 AM
Analysis Date:	09/30/2024
Report Date:	10/01/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM05-092124-AB**		**Sample Description:**	**DL274925**
EMSL Sample Number:	042419874-0011		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):	0.0128
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**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 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**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**

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: 042419874
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: 042419874-0011 **Customer Sample:** MFL-AM05-092124-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	J4	None Detected									
G2	G7	None Detected									
G2	D1	None Detected									
G3	A9	None Detected									
G3	H6	None Detected									

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

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:	042419874
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:	09/25/2024 09:40 AM
Analysis Date:	09/30/2024
Report Date:	10/01/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM02-092124-AB** **Sample Description: DL274965**

EMSL Sample Number:	042419874-0012		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7110.0
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):	0.0128
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**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 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**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**

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: 042419874
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: 042419874-0012 **Customer Sample:** MFL-AM02-092124-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	A6	None Detected									
G5	C9	None Detected									
G5	E4	None Detected									
G6	H6	None Detected									
G6	B8	None Detected									

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

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:	042419874
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:	09/25/2024 09:40 AM
Analysis Date:	09/30/2024
Report Date:	10/01/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-092124-AB**		**Sample Description:**	**D274963**
EMSL Sample Number:	042419874-0013		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7199.5
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):	0.0128
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**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 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**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**

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: 042419874
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: 042419874-0013 **Customer Sample:** MFL-AM03-092124-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	I4	None Detected									
H2	F1	None Detected									
H2	D4	None Detected									
H3	D7	None Detected									
H3	H8	None Detected									

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

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:	042419874
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:	09/25/2024 09:40 AM
Analysis Date:	09/30/2024
Report Date:	10/01/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM07-092124-AB**		**Sample Description:**	**DL275075**
EMSL Sample Number:	042419874-0014		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7151.1
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):	0.0128
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**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 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**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**

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: 042419874
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: 042419874-0014 **Customer Sample:** MFL-AM07-092124-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	C10	None Detected									
H5	E9	None Detected									
H5	H5	None Detected									
H6	H3	None Detected									
H6	C4	None Detected									

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

EMSL Analytical, Inc.
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Tel/Fax: (800) 220-3675 / (856) 786-5974
http://www.EMSL.com / cinnasblab@EMSL.com

EMSL Order:	042419874
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:	09/25/2024 09:40 AM
Analysis Date:	09/30/2024
Report Date:	10/01/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-FB01-092124-AB**		**Sample Description:**	**DL274948**
EMSL Sample Number:	042419874-0015		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):	0.0128
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**	**< 23.36**			
Total Amphibole	**ADX**	**0**	**0**	**< 23.36**			
Actinolite	ADX	0	0	< 23.36			
Amosite	ADX	0	0	< 23.36			
Anthophyllite	ADX	0	0	< 23.36			
Crocidolite	ADX	0	0	< 23.36			
Tremolite	ADX	0	0	< 23.36			
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.36**			
Other Minerals	-	0	0	< 23.36			
Total All Structures	**-**	**0**	**0**	**< 23.36**			

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**	**< 23.36**			
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.36**			
Actinolite	ADX	0	0	< 23.36			
Amosite	ADX	0	0	< 23.36			
Anthophyllite	ADX	0	0	< 23.36			
Crocidolite	ADX	0	0	< 23.36			
Tremolite	ADX	0	0	< 23.36			
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.36**			
Other Minerals	-	0	0	< 23.36			
Total All Structures (PCMe)	**-**	**0**	**0**	**< 23.36**			

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: 042419874
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: 042419874-0015 **Customer Sample:** MFL-FB01-092124-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	J2	None Detected									
I2	H5	None Detected									
I2	F8	None Detected									
I2	D4	None Detected									
I2	B1	None Detected									
I3	J7	None Detected									
I3	H1	None Detected									
I3	F2	None Detected									
I3	D4	None Detected									
I3	B7	None Detected									

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

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:	042419874
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:	09/25/2024 09:40 AM
Analysis Date:	09/30/2024
Report Date:	10/01/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM05-092224-AB**		**Sample Description:**	**DL274880**
EMSL Sample Number:	042419874-0016		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7112.2
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):	0.0128
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**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 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**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**

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: 042419874
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: 042419874-0016 **Customer Sample:** MFL-AM05-092224-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	J6	None Detected									
I5	G4	None Detected									
I5	D5	None Detected									
I6	A6	None Detected									
I6	H8	None Detected									

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

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:	042419874
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:	09/25/2024 09:40 AM
Analysis Date:	09/30/2024
Report Date:	10/01/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-092224-AB**		**Sample Description:**	**DL274910**
EMSL Sample Number:	042419874-0017		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7154.5
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):	0.0128
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**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 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**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**

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: 042419874
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: 042419874-0017 **Customer Sample:** MFL-AM02-092224-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					
J2	J7	None Detected									
J2	G5	None Detected									
J2	D7	None Detected									
J3	I6	None Detected									
J3	D2	None Detected									

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

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:	042419874
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:	09/25/2024 09:40 AM
Analysis Date:	09/30/2024
Report Date:	10/01/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-092224-AB**		**Sample Description:**	**DL275015**
EMSL Sample Number:	042419874-0018		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7233.2
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):	0.0128
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**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 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**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**

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: 042419874
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: 042419874-0018 **Customer Sample:** MFL-AM03-092224-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	I7	None Detected									
J5	G4	None Detected									
J5	C8	None Detected									
J6	A6	None Detected									
J6	G4	None Detected									

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

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:	042419874
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:	09/25/2024 09:40 AM
Analysis Date:	09/30/2024
Report Date:	10/01/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM07-092224-AB**		**Sample Description:**	**DL274874**
EMSL Sample Number:	042419874-0019		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7245.6
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):	0.0128
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**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 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**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**

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: 042419874
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: 042419874-0019 **Customer Sample:** MFL-AM07-092224-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					
K2	A4	None Detected									
K2	F2	None Detected									
K2	H5	None Detected									
K3	A8	None Detected									
K3	J6	None Detected									

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

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:	042419874
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:	09/25/2024 09:40 AM
Analysis Date:	09/30/2024
Report Date:	10/01/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-092224-AB** **Sample Description:** **DL274987**

EMSL Sample Number:	042419874-0020		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):	0.0128
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**	**< 23.36**			
Total Amphibole	**ADX**	**0**	**0**	**< 23.36**			
Actinolite	ADX	0	0	< 23.36			
Amosite	ADX	0	0	< 23.36			
Anthophyllite	ADX	0	0	< 23.36			
Crocidolite	ADX	0	0	< 23.36			
Tremolite	ADX	0	0	< 23.36			
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.36**			
Other Minerals	-	0	0	< 23.36			
Total All Structures	**-**	**0**	**0**	**< 23.36**			

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**	**< 23.36**			
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.36**			
Actinolite	ADX	0	0	< 23.36			
Amosite	ADX	0	0	< 23.36			
Anthophyllite	ADX	0	0	< 23.36			
Crocidolite	ADX	0	0	< 23.36			
Tremolite	ADX	0	0	< 23.36			
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.36**			
Other Minerals	-	0	0	< 23.36			
Total All Structures (PCMe)	**-**	**0**	**0**	**< 23.36**			

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: 042419874
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: 042419874-0020 **Customer Sample:** MFL-FB01-092224-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	A7	None Detected									
K5	C6	None Detected									
K5	E3	None Detected									
K5	G5	None Detected									
K5	I3	None Detected									
K6	J5	None Detected									
K6	H3	None Detected									
K6	F4	None Detected									
K6	D1	None Detected									
K6	B6	None Detected									

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

EMSL Analytical, Inc.
200 Route 130 North Cinnaminson, NJ 08077
Tel/Fax: (800) 220-3675 / (856) 786-5974
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EMSL Order:	042419874
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:	09/25/2024 09:40 AM
Analysis Date:	09/27/2024
Report Date:	10/01/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**Lab Blank**		**Sample Description:**	**Lab Blank**
EMSL Sample Number:	042419874-0021		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):	0.0128
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**	**< 23.36**			
Total Amphibole	**ADX**	**0**	**0**	**< 23.36**			
Actinolite	ADX	0	0	< 23.36			
Amosite	ADX	0	0	< 23.36			
Anthophyllite	ADX	0	0	< 23.36			
Crocidolite	ADX	0	0	< 23.36			
Tremolite	ADX	0	0	< 23.36			
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.36**			
Other Minerals	-	0	0	< 23.36			
Total All Structures	**-**	**0**	**0**	**< 23.36**			

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**	**< 23.36**			
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.36**			
Actinolite	ADX	0	0	< 23.36			
Amosite	ADX	0	0	< 23.36			
Anthophyllite	ADX	0	0	< 23.36			
Crocidolite	ADX	0	0	< 23.36			
Tremolite	ADX	0	0	< 23.36			
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.36**			
Other Minerals	-	0	0	< 23.36			
Total All Structures (PCMe)	**-**	**0**	**0**	**< 23.36**			

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: 042419874
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: 042419874-0021 **Customer Sample:** Lab Blank

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
A2	J5	None Detected									
A2	H7	None Detected									
A2	F9	None Detected									
A2	D6	None Detected									
A2	B8	None Detected									
A3	J9	None Detected									
A3	H7	None Detected									
A3	F8	None Detected									
A3	D6	None Detected									
A3	B4	None Detected									

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

OrderID: 042419874

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL Order Number / Lab Use Only

#042419874

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

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

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

RECEIVED EMSL CINNAMINSON, NJ 24 SEP 25 AM 10:49

Customer Information		Billing Information	
Customer ID:		Billing ID:	
Company Name:	TETRA TECH	Company Name:	
Contact Name:	CHELSEA SABER	Billing Contact:	
Street Address:	1560 BROADWAY STE 1400	Street Address:	
City, State, Zip:	DENVER, CO 80202 Country: USA	City, State, Zip:	Country:
Phone:	703-489-2674	Phone:	
Email(s) for Report:	chelsea.saber@tetratech.com	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: E. Kaugan Saldaña
Sampled By Signature: [signature]
No. of Samples in Shipment: 20

Turn-Around-Time (TAT)

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

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

Test Selection

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-AM05-091924-AB	DL274988	7,174.470	09/19/24 1102
MFL-AM02-091924-AB	DL274928	7,177.528	09/19/24 1120
MFL-AM03-091924-AB	DL274941	7,162.005	09/19/24 1300
MFL-AM07-091924-AB	DL274864	7,293.893	09/19/24 1339
MFL-FB01-091924-AB	DL274926	0	09/19/24 1200
MFL-AM05-092024-AB	DL274959	7,155.829	09/20/24 1057
MFL-AM02-092024-AB	DL274905	7,261.720	09/20/24 1132
MFL-AM03-092024-AB	DL274921	7,175.574	09/20/24 1258

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: [signature]	Date/Time: 09/23/24 1100	Received by: [signature] FedEx	Date/Time: 9/25/24 9:40 AM
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.

20 P

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL Order Number / Lab Use Only

#042419874

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.)

* NOTE: Low volume collected due to pump blockage failure. Contact Chelsea Suber before opening more grids.

Sample Number	Sample Location / Description	Volume, Area or Homogeneous Area	Date / Time Sampled (Air Monitoring Only)
* MFL-AM07-092024-AB	DL274862	4,770.727	09/20/24 ~~1312~~ 1347 (EXS)
MFL-FB01-092024-AB	DL274936	0	09/20/24 1200
MFL-AM05-092124-AB	DL274925	7,230.552	09/21/24 1101
MFL-AM02-092124-AB	DL274965	7,109.994	09/21/24 1115
MFL-AM03-092124-AB	DL274963	7,199.461	09/21/24 1259
MFL-AM07-092124-AB	DL275075	7,151.098	09/21/24 1322
MFL-FB01-092124-AB	DL274848 (EXS)	0	09/21/24 1200
MFL-AM05-092224-AB	DL274880 (EXS)	7,112.213	09/22/24 1056
MFL-AM02-092224-AB	DL274910	7,154.539	09/22/24 1111
MFL-AM03-092224-AB	DL275015	7,233.244	09/22/24 1304
MFL-AM07-092224-AB	DL274874	7,245.636	09/22/24 1326
MFL-FB01-092224-AB	DL274987	0	09/22/24 1200

Method of Shipment: FED EX

Sample Condition Upon Receipt:

Relinquished by:	Date/Time:	Received by:	Date/Time
[signature]	09/23/24 1100	FedEx	9/25/24 9:40A
Relinquished by:	Date/Time:	Received by:	Date/Time

RECEIVED EMSL CINNAMINSON, NJ 25 SEP 25 AM 10:49

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.)

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Page 2 of 2

Stage 1 Data Verification Checklist – Asbestos

HDOH CAB – Ambient Community Air Sampling – Lahaina

Task Order No. 23141

Reviewed by:
Kierra Johnson 10/01/2024 and Shanna Vasser 10/02/2024
Laboratory: EMSL Analytical, Inc. – North Cinnaminson, NJ
Collection date(s): 09/19/2024 – 09/22/2024
Report No: 42419874

√	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:	042420192
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:	09/30/2024 09:00 AM
Analysis Date:	10/01/2024
Report Date:	10/02/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM05-092324-AB**		**Sample Description:**	**DL274881**
EMSL Sample Number:	042420192-0001		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7244.2
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):	0.0127
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**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 47.09**	**< 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**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**

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: 042420192
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: 042420192-0001 **Customer Sample:** MFL-AM05-092324-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	B8	None Detected									
C5	D10	None Detected									
C5	G7	None Detected									
C6	C8	None Detected									
C6	H4	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:	042420192
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:	09/30/2024 09:00 AM
Analysis Date:	N/A
Report Date:	10/02/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-092324-AB**	**Sample Description:**	**DL274856**
EMSL Sample Number:	042420192-0002	Sample Matrix:	Air
Magnification used for fiber counting:	N/A	Volume (L) :	7193.4
Aspect ratio for fiber definition:	N/A	Area of original collection filter (mm^2):	385
Minimum Length (µm):	N/A	Grid Opening Area (mm^2):	0.0127
Chi^2 Test for Random Distribution on Filter:	N/A	Grid Openings Analyzed:	N/A
Minimum Level of analysis (chrysotile):	CD	Analyst:	N/A
Minimum Level of analysis (amphibole):	ADX		
Estimated Particulate Loading on Filter %:	N/A		
Target Analytical Sensitivity (Structures/cc):	0.001		
Analytical Sensitivity (Structures/cc):	**Not Analyzed**	**Limit of Detection (Structures/cc):**	**Not Analyzed**

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**	**Not Analyzed**					
Total Amphibole	**ADX**	**Not Analyzed**					
Actinolite	ADX	Not Analyzed					
Amosite	ADX	Not Analyzed					
Anthophyllite	ADX	Not Analyzed					
Crocidolite	ADX	Not Analyzed					
Tremolite	ADX	Not Analyzed					
Total Asbestos Structures	**CD/ADX**	**Not Analyzed**					
Other Minerals	-	Not Analyzed					
Total All Structures	**-**	**Not Analyzed**					

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**	**Not Analyzed**					
Total Amphibole (PCMe)	**ADX**	**Not Analyzed**					
Actinolite	ADX	Not Analyzed					
Amosite	ADX	Not Analyzed					
Anthophyllite	ADX	Not Analyzed					
Crocidolite	ADX	Not Analyzed					
Tremolite	ADX	Not Analyzed					
Total Asbestos Structures (PCMe)	**CD/ADX**	**Not Analyzed**					
Other Minerals	-	Not Analyzed					
Total All Structures (PCMe)	**-**	**Not Analyzed**					

Comment

Sample not analyzed due to non-uniform particulate deposition. Asbestos fibers present recommend Indirect Preparation.

Robyn Ray
Approved Signatory

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Tel/Fax: (800) 220-3675 / (856) 786-5974
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EMSL Order:	042420192
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

Attn: **Chelsea Saber**
Tetra Tech
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Denver, CO, 80202

Project: **Maui Fires - Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	09/30/2024 09:00 AM
Analysis Date:	10/01/2024
Report Date:	10/02/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-092324-AB**		**Sample Description:**	**DL274877**
EMSL Sample Number:	042420192-0003		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7224.1
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):	0.0127
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**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 47.09**	**< 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**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**

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:	**042420192**
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: 042420192-0003 **Customer Sample:** MFL-AM03-092324-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	A3	None Detected									
D5	D1	None Detected									
D5	J6	None Detected									
D6	C3	None Detected									
D6	F7	None Detected									

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

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:	042420192
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:	09/30/2024 09:00 AM
Analysis Date:	10/01/2024
Report Date:	10/02/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM07-092324-AB**		**Sample Description:**	**DL275142**
EMSL Sample Number:	042420192-0004		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7186.0
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):	0.0127
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**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 47.09**	**< 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**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**

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: 042420192
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: 042420192-0004 **Customer Sample:** MFL-AM07-092324-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
E2	B5	None Detected									
E2	E7	None Detected									
E2	H2	None Detected									
E3	C8	None Detected									
E3	I7	None Detected									

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

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:	042420192
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:	09/30/2024 09:00 AM
Analysis Date:	10/01/2024
Report Date:	10/02/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-FB01-092324-AB**		**Sample Description:**	**DL274968**
EMSL Sample Number:	042420192-0005		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):	0.0127
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**	**< 23.54**			
Total Amphibole	**ADX**	**0**	**0**	**< 23.54**			
Actinolite	ADX	0	0	< 23.54			
Amosite	ADX	0	0	< 23.54			
Anthophyllite	ADX	0	0	< 23.54			
Crocidolite	ADX	0	0	< 23.54			
Tremolite	ADX	0	0	< 23.54			
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.54**			
Other Minerals	-	0	0	< 23.54			
Total All Structures	**-**	**0**	**0**	**< 23.54**			

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**	**< 23.54**			
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.54**			
Actinolite	ADX	0	0	< 23.54			
Amosite	ADX	0	0	< 23.54			
Anthophyllite	ADX	0	0	< 23.54			
Crocidolite	ADX	0	0	< 23.54			
Tremolite	ADX	0	0	< 23.54			
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.54**			
Other Minerals	-	0	0	< 23.54			
Total All Structures (PCMe)	**-**	**0**	**0**	**< 23.54**			

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: 042420192
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: 042420192-0005 **Customer Sample:** MFL-FB01-092324-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	A2	None Detected									
E5	C9	None Detected									
E5	E7	None Detected									
E5	F9	None Detected									
E5	H5	None Detected									
E6	J3	None Detected									
E6	H5	None Detected									
E6	F1	None Detected									
E6	D3	None Detected									
E6	B1	None Detected									

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

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:	042420192
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:	09/30/2024 09:00 AM
Analysis Date:	10/01/2024
Report Date:	10/02/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM05-092424-AB**		**Sample Description:**	**DL274887**
EMSL Sample Number:	042420192-0006		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7087.1
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):	0.0127
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**	**< 47.09**	**< 0.0027**	**Not Applicable**	**0.0027**
Total Amphibole	**ADX**	**0**	**0**	**< 47.09**	**< 0.0027**	**Not Applicable**	**0.0027**
Actinolite	ADX	0	0	< 47.09	< 0.0027	Not Applicable	0.0027
Amosite	ADX	0	0	< 47.09	< 0.0027	Not Applicable	0.0027
Anthophyllite	ADX	0	0	< 47.09	< 0.0027	Not Applicable	0.0027
Crocidolite	ADX	0	0	< 47.09	< 0.0027	Not Applicable	0.0027
Tremolite	ADX	0	0	< 47.09	< 0.0027	Not Applicable	0.0027
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0027**	**Not Applicable**	**0.0027**
Other Minerals	-	0	0	< 47.09	< 0.0027	Not Applicable	0.0027
Total All Structures	**-**	**0**	**0**	**< 47.09**	**< 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**	**< 47.09**	**< 0.0027**	**Not Applicable**	**0.0027**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 47.09**	**< 0.0027**	**Not Applicable**	**0.0027**
Actinolite	ADX	0	0	< 47.09	< 0.0027	Not Applicable	0.0027
Amosite	ADX	0	0	< 47.09	< 0.0027	Not Applicable	0.0027
Anthophyllite	ADX	0	0	< 47.09	< 0.0027	Not Applicable	0.0027
Crocidolite	ADX	0	0	< 47.09	< 0.0027	Not Applicable	0.0027
Tremolite	ADX	0	0	< 47.09	< 0.0027	Not Applicable	0.0027
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0027**	**Not Applicable**	**0.0027**
Other Minerals	-	0	0	< 47.09	< 0.0027	Not Applicable	0.0027
Total All Structures (PCMe)	**-**	**0**	**0**	**< 47.09**	**< 0.0027**	**Not Applicable**	**0.0027**

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: 042420192
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: 042420192-0006 **Customer Sample:** MFL-AM05-092424-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	I5	None Detected									
F2	G8	None Detected									
F2	C4	None Detected									
F3	B5	None Detected									
F3	I2	None Detected									

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

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:	042420192
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:	09/30/2024 09:00 AM
Analysis Date:	N/A
Report Date:	10/02/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-092424-AB**	**Sample Description:**	**DL274861**
EMSL Sample Number:	042420192-0007	Sample Matrix:	Air
Magnification used for fiber counting:	N/A	Volume (L) :	7140.1
Aspect ratio for fiber definition:	N/A	Area of original collection filter (mm^2):	385
Minimum Length (µm):	N/A	Grid Opening Area (mm^2):	0.0127
Chi^2 Test for Random Distribution on Filter:	N/A	Grid Openings Analyzed:	N/A
Minimum Level of analysis (chrysotile):	CD	Analyst:	N/A
Minimum Level of analysis (amphibole):	ADX		
Estimated Particulate Loading on Filter %:	40		
Target Analytical Sensitivity (Structures/cc):	0.001		
Analytical Sensitivity (Structures/cc):	**Not Analyzed**	**Limit of Detection (Structures/cc):**	**Not Analyzed**

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**	**Not Analyzed**					
Total Amphibole	**ADX**	**Not Analyzed**					
Actinolite	ADX	Not Analyzed					
Amosite	ADX	Not Analyzed					
Anthophyllite	ADX	Not Analyzed					
Crocidolite	ADX	Not Analyzed					
Tremolite	ADX	Not Analyzed					
Total Asbestos Structures	**CD/ADX**	**Not Analyzed**					
Other Minerals	-	Not Analyzed					
Total All Structures	**-**	**Not Analyzed**					

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**	**Not Analyzed**					
Total Amphibole (PCMe)	**ADX**	**Not Analyzed**					
Actinolite	ADX	Not Analyzed					
Amosite	ADX	Not Analyzed					
Anthophyllite	ADX	Not Analyzed					
Crocidolite	ADX	Not Analyzed					
Tremolite	ADX	Not Analyzed					
Total Asbestos Structures (PCMe)	**CD/ADX**	**Not Analyzed**					
Other Minerals	-	Not Analyzed					
Total All Structures (PCMe)	**-**	**Not Analyzed**					

Comment

Sample overloaded at ~40% particulate

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:	042420192
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:	09/30/2024 09:00 AM
Analysis Date:	10/01/2024
Report Date:	10/02/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-092424-AB**		**Sample Description:**	**DL274957**
EMSL Sample Number:	042420192-0008		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7159.7
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):	0.0127
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**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 47.09**	**< 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**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**

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: 042420192
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: 042420192-0008 **Customer Sample:** MFL-AM03-092424-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	D4	None Detected									
G2	G7	None Detected									
G3	B6	None Detected									
G3	D9	None Detected									

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

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:	042420192
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:	09/30/2024 09:00 AM
Analysis Date:	10/01/2024
Report Date:	10/02/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM07-092424-AB**		**Sample Description:**	**DL274867**
EMSL Sample Number:	042420192-0009		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7163.7
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):	0.0127
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**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 47.09**	**< 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**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**

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: 042420192
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: 042420192-0009 **Customer Sample:** MFL-AM07-092424-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	C10	None Detected									
G5	G7	None Detected									
G5	J7	None Detected									
G6	G4	None Detected									
G6	B8	None Detected									

Abbreviations used:
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Tel/Fax: (800) 220-3675 / (856) 786-5974
http://www.EMSL.com / cinnasblab@EMSL.com

EMSL Order:	042420192
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:	09/30/2024 09:00 AM
Analysis Date:	10/01/2024
Report Date:	10/02/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-092424-AB** **Sample Description: DL274872**

EMSL Sample Number:	042420192-0010		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):	0.0127
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**	**< 23.54**			
Total Amphibole	**ADX**	**0**	**0**	**< 23.54**			
Actinolite	ADX	0	0	< 23.54			
Amosite	ADX	0	0	< 23.54			
Anthophyllite	ADX	0	0	< 23.54			
Crocidolite	ADX	0	0	< 23.54			
Tremolite	ADX	0	0	< 23.54			
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.54**			
Other Minerals	-	0	0	< 23.54			
Total All Structures	**-**	**0**	**0**	**< 23.54**			

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**	**< 23.54**			
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.54**			
Actinolite	ADX	0	0	< 23.54			
Amosite	ADX	0	0	< 23.54			
Anthophyllite	ADX	0	0	< 23.54			
Crocidolite	ADX	0	0	< 23.54			
Tremolite	ADX	0	0	< 23.54			
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.54**			
Other Minerals	-	0	0	< 23.54			
Total All Structures (PCMe)	**-**	**0**	**0**	**< 23.54**			

Comment

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

EMSL Order ID:	**042420192**
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: 042420192-0010 **Customer Sample:** MFL-FB01-092424-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	A6	None Detected									
H2	C10	None Detected									
H2	E3	None Detected									
H2	G8	None Detected									
H2	I9	None Detected									
H3	A3	None Detected									
H3	C10	None Detected									
H3	E8	None Detected									
H3	G9	None Detected									
H3	I7	None Detected									

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

EMSL Order:	042420192
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:	09/30/2024 09:00 AM
Analysis Date:	10/01/2024
Report Date:	10/02/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM05-092524-AB** **Sample Description: DL275058**

EMSL Sample Number:	042420192-0011		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7132.2
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):	0.0127
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**	**< 47.09**	**< 0.0027**	**Not Applicable**	**0.0027**
Total Amphibole	**ADX**	**0**	**0**	**< 47.09**	**< 0.0027**	**Not Applicable**	**0.0027**
Actinolite	ADX	0	0	< 47.09	< 0.0027	Not Applicable	0.0027
Amosite	ADX	0	0	< 47.09	< 0.0027	Not Applicable	0.0027
Anthophyllite	ADX	0	0	< 47.09	< 0.0027	Not Applicable	0.0027
Crocidolite	ADX	0	0	< 47.09	< 0.0027	Not Applicable	0.0027
Tremolite	ADX	0	0	< 47.09	< 0.0027	Not Applicable	0.0027
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0027**	**Not Applicable**	**0.0027**
Other Minerals	-	0	0	< 47.09	< 0.0027	Not Applicable	0.0027
Total All Structures	**-**	**0**	**0**	**< 47.09**	**< 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**	**< 47.09**	**< 0.0027**	**Not Applicable**	**0.0027**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 47.09**	**< 0.0027**	**Not Applicable**	**0.0027**
Actinolite	ADX	0	0	< 47.09	< 0.0027	Not Applicable	0.0027
Amosite	ADX	0	0	< 47.09	< 0.0027	Not Applicable	0.0027
Anthophyllite	ADX	0	0	< 47.09	< 0.0027	Not Applicable	0.0027
Crocidolite	ADX	0	0	< 47.09	< 0.0027	Not Applicable	0.0027
Tremolite	ADX	0	0	< 47.09	< 0.0027	Not Applicable	0.0027
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0027**	**Not Applicable**	**0.0027**
Other Minerals	-	0	0	< 47.09	< 0.0027	Not Applicable	0.0027
Total All Structures (PCMe)	**-**	**0**	**0**	**< 47.09**	**< 0.0027**	**Not Applicable**	**0.0027**

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: 042420192
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: 042420192-0011 **Customer Sample:** MFL-AM05-092524-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	A8	None Detected									
H5	E7	None Detected									
H5	H5	None Detected									
H6	C7	None Detected									
H6	H8	None Detected									

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

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EMSL Order:	042420192
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:	09/30/2024 09:00 AM
Analysis Date:	10/01/2024
Report Date:	10/02/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-092524-AB**		**Sample Description:**	**DL275116**
EMSL Sample Number:	042420192-0012		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7194.5
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):	0.0127
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**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 47.09**	**< 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**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**

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: 042420192
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: 042420192-0012 **Customer Sample:** MFL-AM02-092524-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	A8	None Detected									
I2	G6	None Detected									
I2	J7	None Detected									
I3	B9	None Detected									
I3	H6	None Detected									

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

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:	042420192
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
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Analysis Date:	10/01/2024
Report Date:	10/02/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-092524-AB**		**Sample Description:**	**DL274912**
EMSL Sample Number:	042420192-0013		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7208.0
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):	0.0127
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**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 47.09**	**< 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**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**

Comment

Robyn Ray
Approved Signatory

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Tel/Fax: (800) 220-3675 / (856) 786-5974
http://www.EMSL.com / cinnasblab@EMSL.com

EMSL Order ID: 042420192
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: 042420192-0013 **Customer Sample:** MFL-AM03-092524-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					
I6	A5	None Detected									
I6	D3	None Detected									
I6	G6	None Detected									
I7	I3	None Detected									
I7	G7	None Detected									

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

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:	042420192
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:	09/30/2024 09:00 AM
Analysis Date:	10/01/2024
Report Date:	10/02/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM07-092524-AB**		**Sample Description:**	**DL275062**
EMSL Sample Number:	042420192-0014		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7292.5
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):	0.0127
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**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 47.09**	**< 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**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**

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: 042420192
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: 042420192-0014 **Customer Sample:** MFL-AM07-092524-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					
J2	J4	None Detected									
J2	G8	None Detected									
J2	C6	None Detected									
J3	H5	None Detected									
J3	C9	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:	042420192
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:	09/30/2024 09:00 AM
Analysis Date:	10/01/2024
Report Date:	10/02/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-092524-AB** **Sample Description: DL274914**

EMSL Sample Number:	042420192-0015		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):	0.0127
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**	**< 23.54**			
Total Amphibole	**ADX**	**0**	**0**	**< 23.54**			
Actinolite	ADX	0	0	< 23.54			
Amosite	ADX	0	0	< 23.54			
Anthophyllite	ADX	0	0	< 23.54			
Crocidolite	ADX	0	0	< 23.54			
Tremolite	ADX	0	0	< 23.54			
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.54**			
Other Minerals	-	0	0	< 23.54			
Total All Structures	**-**	**0**	**0**	**< 23.54**			

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**	**< 23.54**			
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.54**			
Actinolite	ADX	0	0	< 23.54			
Amosite	ADX	0	0	< 23.54			
Anthophyllite	ADX	0	0	< 23.54			
Crocidolite	ADX	0	0	< 23.54			
Tremolite	ADX	0	0	< 23.54			
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.54**			
Other Minerals	-	0	0	< 23.54			
Total All Structures (PCMe)	**-**	**0**	**0**	**< 23.54**			

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: 042420192
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: 042420192-0015 **Customer Sample:** MFL-FB01-092524-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	A1	None Detected									
J5	C4	None Detected									
J5	E3	None Detected									
J5	G4	None Detected									
J5	I4	None Detected									
J6	J10	None Detected									
J6	H6	None Detected									
J6	F8	None Detected									
J6	D8	None Detected									
J6	A7	None Detected									

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

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Tel/Fax: (800) 220-3675 / (856) 786-5974
http://www.EMSL.com / cinnasblab@EMSL.com

EMSL Order:	042420192
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:	09/30/2024 09:00 AM
Analysis Date:	10/01/2024
Report Date:	10/02/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**Lab Blank**		**Sample Description:**	**Lab Blank**
EMSL Sample Number:	042420192-0016		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):	0.0127
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**	**< 23.54**			
Total Amphibole	**ADX**	**0**	**0**	**< 23.54**			
Actinolite	ADX	0	0	< 23.54			
Amosite	ADX	0	0	< 23.54			
Anthophyllite	ADX	0	0	< 23.54			
Crocidolite	ADX	0	0	< 23.54			
Tremolite	ADX	0	0	< 23.54			
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.54**			
Other Minerals	-	0	0	< 23.54			
Total All Structures	**-**	**0**	**0**	**< 23.54**			

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**	**< 23.54**			
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.54**			
Actinolite	ADX	0	0	< 23.54			
Amosite	ADX	0	0	< 23.54			
Anthophyllite	ADX	0	0	< 23.54			
Crocidolite	ADX	0	0	< 23.54			
Tremolite	ADX	0	0	< 23.54			
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.54**			
Other Minerals	-	0	0	< 23.54			
Total All Structures (PCMe)	**-**	**0**	**0**	**< 23.54**			

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: 042420192
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: 042420192-0016 **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					
C2	J4	None Detected									
C2	H2	None Detected									
C2	F4	None Detected									
C2	D6	None Detected									
C2	B3	None Detected									
C3	J5	None Detected									
C3	H6	None Detected									
C3	F2	None Detected									
C3	D5	None Detected									
C3	B6	None Detected									

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

OrderID: 042420192

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL Order Number / Lab Use Only

#042420192

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

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

RECEIVED EMSL CINNAMINSON, NJ SEP 30 AM 9:18 24

☐ 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-AM05-092324-AB	DL274881		7,244.190	09/23/24 1103
MFL-AM02-092324-AB	DL274856		7,193.354	09/23/24 1118
MFL-AM03-092324-AB	DL274877		7,224.132	09/23/24 1304
MFL-AM07-092324-AB	DL275142		7,186.045	09/23/24 1326
MFL-FB01-092324-AB	DL274968		0	09/23/24 1200
MFL-AM05-092424-AB	DL274887		7,087.053	09/24/24 1052
MFL-AM02-092424-AB	DL274861		7,140.137	09/24/24 1108
MFL-AM03-092424-AB	DL274957		7,159.698	09/24/24 1259

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

MFL-AM02-092324-AB not able to be analyzed due to non-uniform particulate distribution. MFL-AM02-092424-AB not able to be analyzed due to overloaded filter. All other samples received acceptable for analysis.l

Method of Shipment:	FED EX	Sample Condition Upon Receipt:	
Relinquished by:		Date/Time: 09/26/24 1100	Received by: FedEx
Relinquished by:		Date/Time:	Received by:

Date/Time 9/30/24 am

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.

15

OrderID: 042420192

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL Order Number / Lab Use Only

#042420192

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-AM07-092424-AB	DL274867	7,163.710	09/24/24 1327
MFL-FB01-092424-AB	DL274872	0	09/24/24 1200
MFL-AM05-092524-AB	DL275058	7,132.218	09/25/24 1057
MFL-AM02-092524-AB	DL275116	7,194.528	09/25/24 1111
MFL-AM03-092524-AB	DL274912	7,207.975	09/25/24 1303
MFL-AM07-092524-AB	DL275062	7,292.482	09/25/24 1327
MFL-FB01-092524-AB	DL274914	0	09/25/24 1200

RECEIVED
EMSL
CINNAMINSON, NJ
24 SEP 30 AM 9:48

Method of Shipment: FED EX		Sample Condition Upon Receipt:	
Relinquished by:	Date/Time: 09/26/24 1100	Received by: FEDEX	Date/Time 9/30/24 9AM
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 10/04/2024 and Shanna Vasser 10/07/2024
Laboratory: EMSL Analytical, Inc. – North Cinnaminson, NJ
Collection date(s): 09/23/2024 – 09/25/2024
Report No: 42420192

√	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:

2. MFL-AM02-092324-AB could not be analyzed due to non-uniform particulate distribution. MFL-AM02-092424-AB could not be analyzed due to filter overload. All other samples were received acceptable for analysis.

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

October 08, 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 09/30/24 13:19.

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: 10/08/24 13:06
SUBMITTED: 09/30/24
AQS SITE CODE:
SITE CODE: Lahaina fires

ANALYTICAL REPORT FOR SAMPLES

SampleName	LabNumber	Matrix	Sampled	Received
MFL-AM05-091924-HM	4093027-01	Air	09/19/24 23:59	09/30/24 13:19
MFL-AM02-091924-HM	4093027-02	Air	09/19/24 23:59	09/30/24 13:19
MFL-AM03-091924-HM	4093027-03	Air	09/19/24 23:59	09/30/24 13:19
MFL-AM07-091924-HM	4093027-04	Air	09/19/24 23:59	09/30/24 13:19
MFL-FB01-091924-HM	4093027-05	Air	09/19/24 00:00	09/30/24 13:19
MFL-AM05-092024-HM	4093027-06	Air	09/20/24 23:59	09/30/24 13:19
MFL-AM02-092024-HM	4093027-07	Air	09/20/24 23:59	09/30/24 13:19
MFL-AM03-092024-HM	4093027-08	Air	09/20/24 23:59	09/30/24 13:19
MFL-AM07-092024-HM	4093027-09	Air	09/20/24 23:59	09/30/24 13:19
MFL-AM05-092124-HM	4093027-10	Air	09/21/24 23:59	09/30/24 13:19
MFL-AM02-092124-HM	4093027-11	Air	09/21/24 23:59	09/30/24 13:19
MFL-AM03-092124-HM	4093027-12	Air	09/21/24 23:59	09/30/24 13:19
MFL-AM07-092124-HM	4093027-13	Air	09/21/24 23:59	09/30/24 13:19
MFL-FB01-092124-HM	4093027-14	Air	09/21/24 00:00	09/30/24 13:19
MFL-AM05-092224-HM	4093027-15	Air	09/22/24 23:59	09/30/24 13:19
MFL-AM02-092224-HM	4093027-16	Air	09/22/24 23:59	09/30/24 13:19
MFL-AM03-092224-HM	4093027-17	Air	09/22/24 23:59	09/30/24 13:19
MFL-AM07-092224-HM	4093027-18	Air	09/22/24 23:59	09/30/24 13:19
MFL-LB01-092224-HM	4093027-19	Air	09/22/24 00:00	09/30/24 13:19
MFL-AM05-092324-HM	4093027-20	Air	09/23/24 23:59	09/30/24 13:19
MFL-AM02-092324-HM	4093027-21	Air	09/23/24 23:59	09/30/24 13:19

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: 10/08/24 13:06
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AQS SITE CODE:
SITE CODE: Lahaina fires

MFL-AM03-092324-HM	4093027-22	Air	09/23/24 23:59	09/30/24 13:19
MFL-AM07-092324-HM	4093027-23	Air	09/23/24 23:59	09/30/24 13:19
MFL-FB01-092324-HM	4093027-24	Air	09/23/24 00:00	09/30/24 13:19
MFL-AM05-092424-HM	4093027-25	Air	09/24/24 23:59	09/30/24 13:19
MFL-AM02-092424-HM	4093027-26	Air	09/24/24 23:59	09/30/24 13:19
MFL-AM03-092424-HM	4093027-27	Air	09/24/24 23:59	09/30/24 13:19
MFL-AM07-092424-HM	4093027-28	Air	09/24/24 23:59	09/30/24 13:19
MFL-AM05-092524-HM	4093027-29	Air	09/25/24 23:59	09/30/24 13:19
MFL-AM02-092524-HM	4093027-30	Air	09/25/24 23:59	09/30/24 13:19
MFL-AM03-092524-HM	4093027-31	Air	09/25/24 23:59	09/30/24 13:19
MFL-AM07-092524-HM	4093027-32	Air	09/25/24 23:59	09/30/24 13:19
MFL-FB01-092524-HM	4093027-33	Air	09/25/24 00:00	09/30/24 13:19

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FILE #: 4205.00.003.001
REPORTED: 10/08/24 13:06
SUBMITTED: 09/30/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM05-091924-HM
Matrix: Air
Lab ID: 4093027-01
Sample Volume: 1923.099 m³
Filter ID:
Sampled: 09/19/24 23:59
Received: 09/30/24 13:19
Analysis Date: 10/02/24 00:29

Comments: Q8518482 - Recived 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**	**0.0906**	SL	**0.0327**
Arsenic	**7440-38-2**	**0.193**		**0.00793**
Barium	**7440-39-3**	**3.26**		**0.905**
Beryllium	**7440-41-7**	**0.00844**		**0.00271**
Cadmium	7440-43-9	0.0230	U	0.0627
Chromium	7440-47-3	1.80	U	1.87
Cobalt	**7440-48-4**	**0.274**		**0.0369**
Copper	**7440-50-8**	**46.7**		**2.23**
Lead	**7439-92-1**	**0.444**		**0.181**
Manganese	**7439-96-5**	**9.18**		**1.60**
Molybdenum	**7439-98-7**	**2.51**		**0.304**
Nickel	**7440-02-0**	**1.07**		**0.552**
Selenium	**7782-49-2**	**0.178**		**0.00758**
Thallium	**7440-28-0**	**7.76E-4**		**4.98E-4**
Vanadium	**7440-62-2**	**1.19**		**0.0448**
Zinc	7440-66-6	10.6	U	65.0

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Blue Bell, PA 19422
ATTN: Ms. Chelsea Saber
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FILE #: 4205.00.003.001
REPORTED: 10/08/24 13:06
SUBMITTED: 09/30/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-091924-HM
Matrix: Air
Lab ID: 4093027-02
Sample Volume: 2065.905 m³
Filter ID:
Sampled: 09/19/24 23:59
Received: 09/30/24 13:19
Analysis Date: 10/02/24 00:43

Comments: Q8518481 - Recived 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**	**0.119**	SL	**0.0304**
Arsenic	**7440-38-2**	**0.250**		**0.00738**
Barium	**7440-39-3**	**4.56**		**0.843**
Beryllium	**7440-41-7**	**0.0147**		**0.00252**
Cadmium	7440-43-9	0.0123	U	0.0584
Chromium	**7440-47-3**	**2.22**		**1.74**
Cobalt	**7440-48-4**	**0.463**		**0.0343**
Copper	**7440-50-8**	**47.0**		**2.07**
Lead	**7439-92-1**	**0.705**		**0.169**
Manganese	**7439-96-5**	**14.9**		**1.49**
Molybdenum	**7439-98-7**	**1.80**		**0.283**
Nickel	**7440-02-0**	**1.42**		**0.513**
Selenium	**7782-49-2**	**0.205**		**0.00706**
Thallium	**7440-28-0**	**9.88E-4**		**4.64E-4**
Vanadium	**7440-62-2**	**1.80**		**0.0417**
Zinc	7440-66-6	11.5	U	60.5

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FILE #: 4205.00.003.001
REPORTED: 10/08/24 13:06
SUBMITTED: 09/30/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-091924-HM
Matrix: Air
Lab ID: 4093027-03
Sample Volume: 1846.978 m³
Filter ID:
Sampled: 09/19/24 23:59
Received: 09/30/24 13:19
Analysis Date: 10/02/24 00:59

Comments: Q8518479 - Recived 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**	**0.0496**	SL	**0.0340**
Arsenic	**7440-38-2**	**0.143**		**0.00825**
Barium	**7440-39-3**	**2.78**		**0.943**
Beryllium	**7440-41-7**	**0.0163**		**0.00282**
Cadmium	7440-43-9	0.00932	U	0.0653
Chromium	**7440-47-3**	**2.27**		**1.95**
Cobalt	**7440-48-4**	**0.397**		**0.0384**
Copper	**7440-50-8**	**67.3**		**2.32**
Lead	**7439-92-1**	**0.429**		**0.189**
Manganese	**7439-96-5**	**11.2**		**1.66**
Molybdenum	**7439-98-7**	**2.28**		**0.316**
Nickel	**7440-02-0**	**2.29**		**0.574**
Selenium	**7782-49-2**	**0.156**		**0.00789**
Thallium	**7440-28-0**	**8.62E-4**		**5.19E-4**
Vanadium	**7440-62-2**	**1.17**		**0.0466**
Zinc	7440-66-6	14.3	U	67.7

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FILE #: 4205.00.003.001
REPORTED: 10/08/24 13:06
SUBMITTED: 09/30/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM07-091924-HM
Matrix: Air
Lab ID: 4093027-04
Sample Volume: 1927.561 m³
Filter ID:
Sampled: 09/19/24 23:59
Received: 09/30/24 13:19
Analysis Date: 10/02/24 01:14

Comments: Q8518478 - Recived 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**	**0.0967**	SL	**0.0326**
Arsenic	**7440-38-2**	**0.410**		**0.00791**
Barium	**7440-39-3**	**4.20**		**0.903**
Beryllium	**7440-41-7**	**0.0326**		**0.00270**
Cadmium	7440-43-9	0.0191	U	0.0625
Chromium	**7440-47-3**	**22.0**		**1.87**
Cobalt	**7440-48-4**	**0.885**		**0.0368**
Copper	**7440-50-8**	**33.4**		**2.22**
Lead	**7439-92-1**	**0.418**		**0.181**
Manganese	**7439-96-5**	**29.4**		**1.60**
Molybdenum	**7439-98-7**	**2.12**		**0.303**
Nickel	**7440-02-0**	**10.3**		**0.550**
Selenium	**7782-49-2**	**0.238**		**0.00756**
Thallium	**7440-28-0**	**0.00151**		**4.97E-4**
Vanadium	**7440-62-2**	**2.07**		**0.0447**
Zinc	7440-66-6	13.4	U	64.8

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ATTN: Ms. Chelsea Saber
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FILE #: 4205.00.003.001
REPORTED: 10/08/24 13:06
SUBMITTED: 09/30/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-FB01-091924-HM
Matrix: Air
Lab ID: 4093027-05
Sample Volume: 1923.099 m³
Filter ID:
Sampled: 09/19/24 00:00
Received: 09/30/24 13:19
Analysis Date: 10/02/24 01:28

Comments: Q8518477 - Recived 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	0.0180	SL, U	0.0327
Arsenic	7440-38-2	0.00338	U	0.00793
Barium	7440-39-3	0.801	U	0.905
Beryllium	7440-41-7	5.76E-4	U	0.00271
Cadmium	7440-43-9	7.37E-4	U	0.0627
Chromium	7440-47-3	0.940	U	1.87
Cobalt	7440-48-4	0.0121	U	0.0369
Copper	7440-50-8	1.16	U	2.23
Lead	7439-92-1	0.0228	U	0.181
Manganese	7439-96-5	0.201	U	1.60
Molybdenum	7439-98-7	0.219	U	0.304
Nickel	7440-02-0	0.460	U	0.552
Selenium	7782-49-2	0.00520	U	0.00758
Thallium	7440-28-0	1.05E-4	U	4.98E-4
Vanadium	7440-62-2	0.0188	U	0.0448
Zinc	7440-66-6	3.65	U	65.0

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REPORTED: 10/08/24 13:06
SUBMITTED: 09/30/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM05-092024-HM
Matrix: Air
Lab ID: 4093027-06
Sample Volume: 1844.84 m³
Filter ID:
Sampled: 09/20/24 23:59
Received: 09/30/24 13:19
Analysis Date: 10/02/24 01:42

Comments: Q8518476 - Recived 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**	**0.107**	SL	**0.0340**
Arsenic	**7440-38-2**	**0.238**		**0.00826**
Barium	**7440-39-3**	**4.15**		**0.944**
Beryllium	**7440-41-7**	**0.0114**		**0.00282**
Cadmium	7440-43-9	0.0174	U	0.0654
Chromium	**7440-47-3**	**2.57**		**1.95**
Cobalt	**7440-48-4**	**0.463**		**0.0385**
Copper	**7440-50-8**	**46.1**		**2.32**
Lead	**7439-92-1**	**0.468**		**0.189**
Manganese	**7439-96-5**	**13.1**		**1.67**
Molybdenum	**7439-98-7**	**2.56**		**0.317**
Nickel	**7440-02-0**	**1.51**		**0.575**
Selenium	**7782-49-2**	**0.166**		**0.00790**
Thallium	**7440-28-0**	**8.53E-4**		**5.19E-4**
Vanadium	**7440-62-2**	**1.64**		**0.0467**
Zinc	7440-66-6	11.6	U	67.7

CERTIFICATE OF ANALYSIS

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FILE #: 4205.00.003.001
REPORTED: 10/08/24 13:06
SUBMITTED: 09/30/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-092024-HM
Matrix: Air
Lab ID: 4093027-07
Sample Volume: 2017.2 m³
Filter ID:
Sampled: 09/20/24 23:59
Received: 09/30/24 13:19
Analysis Date: 10/02/24 01:56

Comments: Q8518475 - Recived 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	**0.0311**
Arsenic	**7440-38-2**	**0.240**		**0.00756**
Barium	**7440-39-3**	**3.71**		**0.863**
Beryllium	**7440-41-7**	**0.0112**		**0.00258**
Cadmium	**7440-43-9**	**0.0798**		**0.0598**
Chromium	**7440-47-3**	**2.42**		**1.78**
Cobalt	**7440-48-4**	**0.390**		**0.0352**
Copper	**7440-50-8**	**35.7**		**2.12**
Lead	**7439-92-1**	**0.664**		**0.173**
Manganese	**7439-96-5**	**11.9**		**1.52**
Molybdenum	**7439-98-7**	**1.76**		**0.290**
Nickel	**7440-02-0**	**1.30**		**0.526**
Selenium	**7782-49-2**	**0.179**		**0.00723**
Thallium	**7440-28-0**	**8.52E-4**		**4.75E-4**
Vanadium	**7440-62-2**	**1.49**		**0.0427**
Zinc	7440-66-6	12.6	U	61.9

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FILE #: 4205.00.003.001
REPORTED: 10/08/24 13:06
SUBMITTED: 09/30/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-092024-HM
Matrix: Air
Lab ID: 4093027-08
Sample Volume: 1902.79 m³
Filter ID:
Sampled: 09/20/24 23:59
Received: 09/30/24 13:19
Analysis Date: 10/02/24 02:10

Comments: Q8518473 - Recived 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**	**0.0412**	SL	**0.0330**
Arsenic	**7440-38-2**	**0.103**		**0.00801**
Barium	**7440-39-3**	**2.08**		**0.915**
Beryllium	**7440-41-7**	**0.0130**		**0.00274**
Cadmium	7440-43-9	0.0296	U	0.0634
Chromium	7440-47-3	1.76	U	1.89
Cobalt	**7440-48-4**	**0.260**		**0.0373**
Copper	**7440-50-8**	**47.2**		**2.25**
Lead	**7439-92-1**	**0.187**		**0.183**
Manganese	**7439-96-5**	**7.18**		**1.62**
Molybdenum	**7439-98-7**	**1.71**		**0.307**
Nickel	**7440-02-0**	**1.17**		**0.557**
Selenium	**7782-49-2**	**0.103**		**0.00766**
Thallium	**7440-28-0**	**5.25E-4**		**5.04E-4**
Vanadium	**7440-62-2**	**0.719**		**0.0452**
Zinc	7440-66-6	8.12	U	65.7

CERTIFICATE OF ANALYSIS

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FILE #: 4205.00.003.001
REPORTED: 10/08/24 13:06
SUBMITTED: 09/30/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM07-092024-HM
Matrix: Air
Lab ID: 4093027-09
Sample Volume: 1566.004 m³
Filter ID:
Sampled: 09/20/24 23:59
Received: 09/30/24 13:19
Analysis Date: 10/02/24 02:24

Comments: Q8518471 - Recived 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**	**0.143**	SL	**0.0401**
Arsenic	**7440-38-2**	**0.369**		**0.00973**
Barium	**7440-39-3**	**4.23**		**1.11**
Beryllium	**7440-41-7**	**0.0382**		**0.00332**
Cadmium	7440-43-9	0.0131	U	0.0770
Chromium	**7440-47-3**	**7.51**		**2.30**
Cobalt	**7440-48-4**	**0.808**		**0.0453**
Copper	**7440-50-8**	**18.1**		**2.73**
Lead	**7439-92-1**	**0.379**		**0.222**
Manganese	**7439-96-5**	**28.0**		**1.96**
Molybdenum	**7439-98-7**	**1.03**		**0.373**
Nickel	**7440-02-0**	**3.53**		**0.677**
Selenium	**7782-49-2**	**0.175**		**0.00931**
Thallium	**7440-28-0**	**0.00134**		**6.12E-4**
Vanadium	**7440-62-2**	**2.09**		**0.0550**
Zinc	7440-66-6	11.3	U	79.8

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: 10/08/24 13:06
SUBMITTED: 09/30/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM05-092124-HM
Matrix: Air
Lab ID: 4093027-10
Sample Volume: 1901.627 m³
Filter ID:
Sampled: 09/21/24 23:59
Received: 09/30/24 13:19
Analysis Date: 10/02/24 02:39

Comments: Q8518470 - Recived 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**	**0.0932**	SL	**0.0330**
Arsenic	**7440-38-2**	**0.153**		**0.00802**
Barium	**7440-39-3**	**3.20**		**0.915**
Beryllium	**7440-41-7**	**0.00788**		**0.00274**
Cadmium	7440-43-9	0.0157	U	0.0634
Chromium	7440-47-3	1.84	U	1.89
Cobalt	**7440-48-4**	**0.272**		**0.0373**
Copper	**7440-50-8**	**55.8**		**2.25**
Lead	**7439-92-1**	**0.320**		**0.183**
Manganese	**7439-96-5**	**7.95**		**1.62**
Molybdenum	**7439-98-7**	**1.84**		**0.307**
Nickel	**7440-02-0**	**1.15**		**0.558**
Selenium	**7782-49-2**	**0.167**		**0.00767**
Thallium	**7440-28-0**	**6.05E-4**		**5.04E-4**
Vanadium	**7440-62-2**	**0.980**		**0.0453**
Zinc	7440-66-6	10.5	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: 10/08/24 13:06
SUBMITTED: 09/30/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-092124-HM
Matrix: Air
Lab ID: 4093027-11
Sample Volume: 2005.754 m³
Filter ID:
Sampled: 09/21/24 23:59
Received: 09/30/24 13:19
Analysis Date: 10/02/24 03:48

Comments: Q8518469 - Recived 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**	**0.154**	SL	**0.0313**
Arsenic	**7440-38-2**	**0.251**		**0.00760**
Barium	**7440-39-3**	**3.83**		**0.868**
Beryllium	**7440-41-7**	**0.0100**		**0.00260**
Cadmium	7440-43-9	0.00804	U	0.0601
Chromium	**7440-47-3**	**1.87**		**1.79**
Cobalt	**7440-48-4**	**0.297**		**0.0354**
Copper	**7440-50-8**	**23.1**		**2.13**
Lead	**7439-92-1**	**0.567**		**0.174**
Manganese	**7439-96-5**	**9.65**		**1.53**
Molybdenum	**7439-98-7**	**0.914**		**0.291**
Nickel	**7440-02-0**	**1.11**		**0.529**
Selenium	**7782-49-2**	**0.178**		**0.00727**
Thallium	**7440-28-0**	**8.30E-4**		**4.78E-4**
Vanadium	**7440-62-2**	**1.10**		**0.0429**
Zinc	7440-66-6	11.3	U	62.3

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: 10/08/24 13:06
SUBMITTED: 09/30/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-092124-HM
Matrix: Air
Lab ID: 4093027-12
Sample Volume: 1888.404 m³
Filter ID:
Sampled: 09/21/24 23:59
Received: 09/30/24 13:19
Analysis Date: 10/02/24 04:02

Comments: Q8518468 - Recived 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**	**0.0684**	SL	**0.0333**
Arsenic	**7440-38-2**	**0.154**		**0.00807**
Barium	**7440-39-3**	**3.23**		**0.922**
Beryllium	**7440-41-7**	**0.0242**		**0.00276**
Cadmium	7440-43-9	0.0119	U	0.0638
Chromium	**7440-47-3**	**2.72**		**1.90**
Cobalt	**7440-48-4**	**0.412**		**0.0376**
Copper	**7440-50-8**	**37.8**		**2.27**
Lead	**7439-92-1**	**0.216**		**0.184**
Manganese	**7439-96-5**	**10.3**		**1.63**
Molybdenum	**7439-98-7**	**1.66**		**0.309**
Nickel	**7440-02-0**	**1.50**		**0.562**
Selenium	**7782-49-2**	**0.147**		**0.00772**
Thallium	**7440-28-0**	**7.07E-4**		**5.07E-4**
Vanadium	**7440-62-2**	**1.17**		**0.0456**
Zinc	7440-66-6	13.9	U	66.2

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: 10/08/24 13:06
SUBMITTED: 09/30/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM07-092124-HM
Matrix: Air
Lab ID: 4093027-13
Sample Volume: 1978.144 m³
Filter ID:
Sampled: 09/21/24 23:59
Received: 09/30/24 13:19
Analysis Date: 10/01/24 18:43

Comments: Q8518466 MS/MSD - Recived 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**	**0.0712**	SL	**0.0317**
Arsenic	**7440-38-2**	**0.367**		**0.00771**
Barium	**7440-39-3**	**2.33**		**0.880**
Beryllium	**7440-41-7**	**0.00839**		**0.00263**
Cadmium	7440-43-9	0.0110	U	0.0609
Chromium	**7440-47-3**	**2.01**		**1.82**
Cobalt	**7440-48-4**	**0.248**		**0.0359**
Copper	**7440-50-8**	**30.4**	D-F, QM-07	**2.16**
Lead	**7439-92-1**	**0.193**		**0.176**
Manganese	**7439-96-5**	**8.05**		**1.55**
Molybdenum	**7439-98-7**	**1.09**	QM-07	**0.295**
Nickel	**7440-02-0**	**1.00**		**0.536**
Selenium	**7782-49-2**	**0.134**		**0.00737**
Thallium	**7440-28-0**	**6.72E-4**		**4.84E-4**
Vanadium	**7440-62-2**	**0.775**		**0.0435**
Zinc	7440-66-6	9.63	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: 10/08/24 13:06
SUBMITTED: 09/30/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-FB01-092124-HM
Matrix: Air
Lab ID: 4093027-14
Sample Volume: 1901.627 m³
Filter ID:
Sampled: 09/21/24 00:00
Received: 09/30/24 13:19
Analysis Date: 10/02/24 04:16

Comments: Q8518461 - Recived 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	0.0218	SL, U	0.0330
Arsenic	7440-38-2	0.00569	U	0.00802
Barium	7440-39-3	0.857	U	0.915
Beryllium	7440-41-7	4.59E-4	U	0.00274
Cadmium	7440-43-9	0.00373	U	0.0634
Chromium	7440-47-3	1.27	U	1.89
Cobalt	7440-48-4	0.0215	U	0.0373
Copper	7440-50-8	0.588	U	2.25
Lead	7439-92-1	0.0589	U	0.183
Manganese	7439-96-5	0.238	U	1.62
Molybdenum	7439-98-7	0.163	U	0.307
Nickel	7440-02-0	0.546	U	0.558
Selenium	7782-49-2	0.00684	U	0.00767
Thallium	7440-28-0	1.07E-4	U	5.04E-4
Vanadium	7440-62-2	0.0244	U	0.0453
Zinc	7440-66-6	5.22	U	65.7

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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: 10/08/24 13:06
SUBMITTED: 09/30/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM05-092224-HM
Matrix: Air
Lab ID: 4093027-15
Sample Volume: 1999.14 m³
Filter ID:
Sampled: 09/22/24 23:59
Received: 09/30/24 13:19
Analysis Date: 10/02/24 04:31

Comments: Q8518464 - Recived 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**	**0.0978**	SL	**0.0314**
Arsenic	**7440-38-2**	**0.168**		**0.00763**
Barium	**7440-39-3**	**2.49**		**0.871**
Beryllium	**7440-41-7**	**0.00534**		**0.00260**
Cadmium	7440-43-9	0.0147	U	0.0603
Chromium	7440-47-3	1.66	U	1.80
Cobalt	**7440-48-4**	**0.196**		**0.0355**
Copper	**7440-50-8**	**53.3**		**2.14**
Lead	**7439-92-1**	**0.406**		**0.174**
Manganese	**7439-96-5**	**5.81**		**1.54**
Molybdenum	**7439-98-7**	**1.61**		**0.292**
Nickel	**7440-02-0**	**0.856**		**0.531**
Selenium	**7782-49-2**	**0.136**		**0.00729**
Thallium	**7440-28-0**	**7.03E-4**		**4.79E-4**
Vanadium	**7440-62-2**	**0.641**		**0.0431**
Zinc	7440-66-6	10.8	U	62.5

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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: 10/08/24 13:06
SUBMITTED: 09/30/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-092224-HM
Matrix: Air
Lab ID: 4093027-16
Sample Volume: 2089.846 m³
Filter ID:
Sampled: 09/22/24 23:59
Received: 09/30/24 13:19
Analysis Date: 10/02/24 04:45

Comments: Q9540574 - Recived 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**	**0.0924**	SL	**0.0301**
Arsenic	**7440-38-2**	**0.202**		**0.00729**
Barium	**7440-39-3**	**3.53**		**0.833**
Beryllium	**7440-41-7**	**0.00855**		**0.00249**
Cadmium	7440-43-9	0.0117	U	0.0577
Chromium	**7440-47-3**	**2.58**		**1.72**
Cobalt	**7440-48-4**	**0.278**		**0.0339**
Copper	**7440-50-8**	**21.0**		**2.05**
Lead	**7439-92-1**	**0.570**		**0.167**
Manganese	**7439-96-5**	**8.05**		**1.47**
Molybdenum	**7439-98-7**	**1.05**		**0.279**
Nickel	**7440-02-0**	**1.09**		**0.508**
Selenium	**7782-49-2**	**0.154**		**0.00698**
Thallium	**7440-28-0**	**8.23E-4**		**4.59E-4**
Vanadium	**7440-62-2**	**0.873**		**0.0412**
Zinc	7440-66-6	11.9	U	59.8

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: 10/08/24 13:06
SUBMITTED: 09/30/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-092224-HM
Matrix: Air
Lab ID: 4093027-17
Sample Volume: 1970.337 m³
Filter ID:
Sampled: 09/22/24 23:59
Received: 09/30/24 13:19
Analysis Date: 10/02/24 05:00

Comments: Q9540573 - Recived 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	0.0235	SL, U	0.0319
Arsenic	**7440-38-2**	**0.130**		**0.00774**
Barium	**7440-39-3**	**2.09**		**0.884**
Beryllium	**7440-41-7**	**0.0208**		**0.00264**
Cadmium	7440-43-9	0.00710	U	0.0612
Chromium	**7440-47-3**	**2.90**		**1.82**
Cobalt	**7440-48-4**	**0.339**		**0.0360**
Copper	**7440-50-8**	**26.5**		**2.17**
Lead	**7439-92-1**	**0.324**		**0.177**
Manganese	**7439-96-5**	**8.39**		**1.56**
Molybdenum	**7439-98-7**	**1.67**		**0.296**
Nickel	**7440-02-0**	**1.10**		**0.538**
Selenium	**7782-49-2**	**0.103**		**0.00740**
Thallium	**7440-28-0**	**7.15E-4**		**4.86E-4**
Vanadium	**7440-62-2**	**0.880**		**0.0437**
Zinc	7440-66-6	8.84	U	63.4

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: 10/08/24 13:06
SUBMITTED: 09/30/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM07-092224-HM
Matrix: Air
Lab ID: 4093027-18
Sample Volume: 2009.517 m³
Filter ID:
Sampled: 09/22/24 23:59
Received: 09/30/24 13:19
Analysis Date: 10/02/24 05:14

Comments: Q9540572 - Recived 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**	**0.0589**	SL	**0.0313**
Arsenic	**7440-38-2**	**1.30**		**0.00759**
Barium	**7440-39-3**	**2.64**		**0.866**
Beryllium	**7440-41-7**	**0.0140**		**0.00259**
Cadmium	7440-43-9	0.0428	U	0.0600
Chromium	**7440-47-3**	**3.67**		**1.79**
Cobalt	**7440-48-4**	**0.452**		**0.0353**
Copper	**7440-50-8**	**26.7**		**2.13**
Lead	**7439-92-1**	**0.447**		**0.173**
Manganese	**7439-96-5**	**13.5**		**1.53**
Molybdenum	**7439-98-7**	**1.31**		**0.291**
Nickel	**7440-02-0**	**1.45**		**0.528**
Selenium	**7782-49-2**	**0.140**		**0.00725**
Thallium	**7440-28-0**	**0.00100**		**4.77E-4**
Vanadium	**7440-62-2**	**1.19**		**0.0428**
Zinc	7440-66-6	12.8	U	62.2

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: 10/08/24 13:06
SUBMITTED: 09/30/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-LB01-092224-HM
Matrix: Air
Lab ID: 4093027-19
Sample Volume: 1999.14 m³
Filter ID:
Sampled: 09/22/24 00:00
Received: 09/30/24 13:19
Analysis Date: 10/02/24 05:28

Comments: Q9540569 - Recived 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	0.00772	SL, U	0.0314
Arsenic	7440-38-2	0.00605	U	0.00763
Barium	7440-39-3	0.569	U	0.871
Beryllium	7440-41-7	8.46E-4	U	0.00260
Cadmium	7440-43-9	0.00239	U	0.0603
Chromium	7440-47-3	1.42	U	1.80
Cobalt	7440-48-4	0.0299	U	0.0355
Copper	7440-50-8	0.738	U	2.14
Lead	7439-92-1	0.0996	U	0.174
Manganese	7439-96-5	0.218	U	1.54
Molybdenum	7439-98-7	0.246	U	0.292
Nickel	7440-02-0	0.263	U	0.531
Selenium	7782-49-2	0.00513	U	0.00729
Thallium	7440-28-0	5.19E-5	U	4.79E-4
Vanadium	7440-62-2	0.0264	U	0.0431
Zinc	7440-66-6	4.85	U	62.5

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: 10/08/24 13:06
SUBMITTED: 09/30/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM05-092324-HM
Matrix: Air
Lab ID: 4093027-20
Sample Volume: 2051.941 m³
Filter ID:
Sampled: 09/23/24 23:59
Received: 09/30/24 13:19
Analysis Date: 10/01/24 22:10

Comments: Q9540571 - Recived 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**	**0.0597**	SL	**0.0306**
Arsenic	**7440-38-2**	**0.182**		**0.00743**
Barium	**7440-39-3**	**2.43**		**0.848**
Beryllium	**7440-41-7**	**0.00616**		**0.00254**
Cadmium	7440-43-9	0.0177	U	0.0588
Chromium	**7440-47-3**	**2.31**		**1.75**
Cobalt	**7440-48-4**	**0.225**		**0.0346**
Copper	**7440-50-8**	**48.8**	QM-07	**2.09**
Lead	**7439-92-1**	**0.588**		**0.170**
Manganese	**7439-96-5**	**5.82**		**1.50**
Molybdenum	**7439-98-7**	**1.83**	QM-07	**0.285**
Nickel	**7440-02-0**	**0.948**		**0.517**
Selenium	**7782-49-2**	**0.160**		**0.00710**
Thallium	**7440-28-0**	**0.00100**		**4.67E-4**
Vanadium	**7440-62-2**	**0.883**		**0.0419**
Zinc	7440-66-6	11.4	U	60.9

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: 10/08/24 13:06
SUBMITTED: 09/30/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-092324-HM
Matrix: Air
Lab ID: 4093027-21
Sample Volume: 1949.857 m³
Filter ID:
Sampled: 09/23/24 23:59
Received: 09/30/24 13:19
Analysis Date: 10/02/24 05:42

Comments: Q9540568 - Recived 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**	**0.115**	SL	**0.0322**
Arsenic	**7440-38-2**	**0.202**		**0.00782**
Barium	**7440-39-3**	**4.48**		**0.893**
Beryllium	**7440-41-7**	**0.0109**		**0.00267**
Cadmium	7440-43-9	0.0157	U	0.0618
Chromium	**7440-47-3**	**3.93**		**1.84**
Cobalt	**7440-48-4**	**0.389**		**0.0364**
Copper	**7440-50-8**	**22.5**		**2.19**
Lead	**7439-92-1**	**0.663**		**0.179**
Manganese	**7439-96-5**	**11.0**		**1.58**
Molybdenum	**7439-98-7**	**1.36**		**0.300**
Nickel	**7440-02-0**	**1.31**		**0.544**
Selenium	**7782-49-2**	**0.198**		**0.00748**
Thallium	**7440-28-0**	**0.00129**		**4.91E-4**
Vanadium	**7440-62-2**	**1.41**		**0.0441**
Zinc	7440-66-6	15.3	U	64.1

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: 10/08/24 13:06
SUBMITTED: 09/30/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-092324-HM
Matrix: Air
Lab ID: 4093027-22
Sample Volume: 2006.006 m³
Filter ID:
Sampled: 09/23/24 23:59
Received: 09/30/24 13:19
Analysis Date: 10/02/24 05:59

Comments: Q9540567 - Recived 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	0.0257	SL, U	0.0313
Arsenic	**7440-38-2**	**0.133**		**0.00760**
Barium	**7440-39-3**	**1.97**		**0.868**
Beryllium	**7440-41-7**	**0.0133**		**0.00260**
Cadmium	7440-43-9	0.00905	U	0.0601
Chromium	**7440-47-3**	**2.33**		**1.79**
Cobalt	**7440-48-4**	**0.267**		**0.0354**
Copper	**7440-50-8**	**35.8**		**2.13**
Lead	**7439-92-1**	**0.320**		**0.174**
Manganese	**7439-96-5**	**6.85**		**1.53**
Molybdenum	**7439-98-7**	**1.90**		**0.291**
Nickel	**7440-02-0**	**0.975**		**0.529**
Selenium	**7782-49-2**	**0.135**		**0.00727**
Thallium	**7440-28-0**	**8.88E-4**		**4.78E-4**
Vanadium	**7440-62-2**	**0.811**		**0.0429**
Zinc	7440-66-6	9.19	U	62.3

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: 10/08/24 13:06
SUBMITTED: 09/30/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM07-092324-HM
Matrix: Air
Lab ID: 4093027-23
Sample Volume: 1993.634 m³
Filter ID:
Sampled: 09/23/24 23:59
Received: 09/30/24 13:19
Analysis Date: 10/02/24 06:50

Comments: Q9540566 - Recived 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**	**0.0837**	SL	**0.0315**
Arsenic	**7440-38-2**	**0.532**		**0.00765**
Barium	**7440-39-3**	**5.13**		**0.873**
Beryllium	**7440-41-7**	**0.0500**		**0.00261**
Cadmium	7440-43-9	0.0224	U	0.0605
Chromium	**7440-47-3**	**5.02**		**1.80**
Cobalt	**7440-48-4**	**1.11**		**0.0356**
Copper	**7440-50-8**	**26.7**		**2.15**
Lead	**7439-92-1**	**0.608**		**0.175**
Manganese	**7439-96-5**	**40.9**		**1.54**
Molybdenum	**7439-98-7**	**1.52**		**0.293**
Nickel	**7440-02-0**	**2.77**		**0.532**
Selenium	**7782-49-2**	**0.276**		**0.00731**
Thallium	**7440-28-0**	**0.00239**		**4.81E-4**
Vanadium	**7440-62-2**	**2.84**		**0.0432**
Zinc	7440-66-6	14.3	U	62.7

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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: 10/08/24 13:06
SUBMITTED: 09/30/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-FB01-092324-HM
Matrix: Air
Lab ID: 4093027-24
Sample Volume: 2051.941 m³
Filter ID:
Sampled: 09/23/24 00:00
Received: 09/30/24 13:19
Analysis Date: 10/02/24 07:07

Comments: Q9540562 - Recived 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	0.00692	SL, U	0.0306
Arsenic	7440-38-2	0.00309	U	0.00743
Barium	7440-39-3	0.502	U	0.848
Beryllium	7440-41-7	7.02E-4	U	0.00254
Cadmium	7440-43-9	0.00177	U	0.0588
Chromium	7440-47-3	1.32	U	1.75
Cobalt	7440-48-4	0.0232	U	0.0346
Copper	7440-50-8	0.329	U	2.09
Lead	7439-92-1	0.0467	U	0.170
Manganese	7439-96-5	0.153	U	1.50
Molybdenum	7439-98-7	0.222	U	0.285
Nickel	7440-02-0	0.225	U	0.517
Selenium	7782-49-2	0.00363	U	0.00710
Thallium	7440-28-0	6.41E-5	U	4.67E-4
Vanadium	7440-62-2	0.00637	U	0.0419
Zinc	7440-66-6	3.18	U	60.9

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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: 10/08/24 13:06
SUBMITTED: 09/30/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM05-092424-HM
Matrix: Air
Lab ID: 4093027-25
Sample Volume: 1969.272 m³
Filter ID:
Sampled: 09/24/24 23:59
Received: 09/30/24 13:19
Analysis Date: 10/02/24 07:21

Comments: Q9540565 - Recived 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**	**0.0586**	SL	**0.0319**
Arsenic	**7440-38-2**	**0.174**		**0.00774**
Barium	**7440-39-3**	**2.68**		**0.884**
Beryllium	**7440-41-7**	**0.00663**		**0.00264**
Cadmium	7440-43-9	0.0153	U	0.0612
Chromium	**7440-47-3**	**2.45**		**1.83**
Cobalt	**7440-48-4**	**0.231**		**0.0360**
Copper	**7440-50-8**	**55.2**		**2.17**
Lead	**7439-92-1**	**0.576**		**0.177**
Manganese	**7439-96-5**	**6.76**		**1.56**
Molybdenum	**7439-98-7**	**2.34**		**0.297**
Nickel	**7440-02-0**	**0.939**		**0.539**
Selenium	**7782-49-2**	**0.207**		**0.00740**
Thallium	**7440-28-0**	**0.00102**		**4.87E-4**
Vanadium	**7440-62-2**	**1.05**		**0.0437**
Zinc	7440-66-6	10.1	U	63.5

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

FILE #: 4205.00.003.001
REPORTED: 10/08/24 13:06
SUBMITTED: 09/30/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-092424-HM
Matrix: Air
Lab ID: 4093027-26
Sample Volume: 2197.068 m³
Filter ID:
Sampled: 09/24/24 23:59
Received: 09/30/24 13:19
Analysis Date: 10/02/24 07:35

Comments: Q9540564 - Recived 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**	**0.105**	SL	**0.0286**
Arsenic	**7440-38-2**	**0.359**		**0.00694**
Barium	**7440-39-3**	**5.73**		**0.792**
Beryllium	**7440-41-7**	**0.0167**		**0.00237**
Cadmium	7440-43-9	0.0150	U	0.0549
Chromium	**7440-47-3**	**2.93**		**1.64**
Cobalt	**7440-48-4**	**0.496**		**0.0323**
Copper	**7440-50-8**	**19.6**		**1.95**
Lead	**7439-92-1**	**1.53**		**0.158**
Manganese	**7439-96-5**	**16.0**		**1.40**
Molybdenum	**7439-98-7**	**1.02**		**0.266**
Nickel	**7440-02-0**	**1.52**		**0.483**
Selenium	**7782-49-2**	**0.208**		**0.00664**
Thallium	**7440-28-0**	**0.00118**		**4.36E-4**
Vanadium	**7440-62-2**	**1.79**		**0.0392**
Zinc	7440-66-6	18.6	U	56.9

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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: 10/08/24 13:06
SUBMITTED: 09/30/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-092424-HM
Matrix: Air
Lab ID: 4093027-27
Sample Volume: 2032.96 m³
Filter ID:
Sampled: 09/24/24 23:59
Received: 09/30/24 13:19
Analysis Date: 10/02/24 08:08

Comments: Q9540563 - Recived 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**	**0.0626**	SL	**0.0309**
Arsenic	**7440-38-2**	**0.194**		**0.00750**
Barium	**7440-39-3**	**3.55**		**0.856**
Beryllium	**7440-41-7**	**0.0360**		**0.00256**
Cadmium	7440-43-9	0.0265	U	0.0593
Chromium	**7440-47-3**	**3.51**		**1.77**
Cobalt	**7440-48-4**	**0.691**		**0.0349**
Copper	**7440-50-8**	**67.6**		**2.10**
Lead	**7439-92-1**	**0.405**		**0.171**
Manganese	**7439-96-5**	**18.2**		**1.51**
Molybdenum	**7439-98-7**	**2.65**		**0.287**
Nickel	**7440-02-0**	**1.95**		**0.522**
Selenium	**7782-49-2**	**0.222**		**0.00717**
Thallium	**7440-28-0**	**0.00136**		**4.71E-4**
Vanadium	**7440-62-2**	**1.73**		**0.0423**
Zinc	7440-66-6	11.6	U	61.5

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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: 10/08/24 13:06
SUBMITTED: 09/30/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM07-092424-HM
Matrix: Air
Lab ID: 4093027-28
Sample Volume: 1836.803 m³
Filter ID:
Sampled: 09/24/24 23:59
Received: 09/30/24 13:19
Analysis Date: 10/02/24 08:23

Comments: Q9540559 - Recived 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**	**0.0598**	SL	**0.0342**
Arsenic	**7440-38-2**	**0.333**		**0.00830**
Barium	**7440-39-3**	**3.22**		**0.948**
Beryllium	**7440-41-7**	**0.0207**		**0.00283**
Cadmium	7440-43-9	0.0125	U	0.0656
Chromium	**7440-47-3**	**16.4**		**1.96**
Cobalt	**7440-48-4**	**0.721**		**0.0386**
Copper	**7440-50-8**	**20.5**		**2.33**
Lead	**7439-92-1**	**0.372**		**0.190**
Manganese	**7439-96-5**	**20.8**		**1.67**
Molybdenum	**7439-98-7**	**1.53**		**0.318**
Nickel	**7440-02-0**	**7.00**		**0.578**
Selenium	**7782-49-2**	**0.214**		**0.00794**
Thallium	**7440-28-0**	**0.00135**		**5.22E-4**
Vanadium	**7440-62-2**	**1.76**		**0.0469**
Zinc	7440-66-6	9.81	U	68.0

CERTIFICATE OF ANALYSIS

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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: 10/08/24 13:06
SUBMITTED: 09/30/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM05-092524-HM
Matrix: Air
Lab ID: 4093027-29
Sample Volume: 2053.418 m³
Filter ID:
Sampled: 09/25/24 23:59
Received: 09/30/24 13:19
Analysis Date: 10/02/24 08:37

Comments: Q9540558 - Recived 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**	**0.0541**	SL	**0.0306**
Arsenic	**7440-38-2**	**0.196**		**0.00742**
Barium	**7440-39-3**	**3.34**		**0.848**
Beryllium	**7440-41-7**	**0.00916**		**0.00254**
Cadmium	7440-43-9	0.0170	U	0.0587
Chromium	**7440-47-3**	**2.46**		**1.75**
Cobalt	**7440-48-4**	**0.308**		**0.0345**
Copper	**7440-50-8**	**52.7**		**2.08**
Lead	**7439-92-1**	**0.727**		**0.170**
Manganese	**7439-96-5**	**9.38**		**1.50**
Molybdenum	**7439-98-7**	**2.30**		**0.284**
Nickel	**7440-02-0**	**0.945**		**0.517**
Selenium	**7782-49-2**	**0.188**		**0.00710**
Thallium	**7440-28-0**	**6.20E-4**		**4.67E-4**
Vanadium	**7440-62-2**	**1.12**		**0.0419**
Zinc	7440-66-6	10.7	U	60.9

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: 10/08/24 13:06
SUBMITTED: 09/30/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-092524-HM
Matrix: Air
Lab ID: 4093027-30
Sample Volume: 2026.68 m³
Filter ID:
Sampled: 09/25/24 23:59
Received: 09/30/24 13:19
Analysis Date: 10/02/24 08:53

Comments: Q9540557 - Recived 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**	**0.129**	SL	**0.0310**
Arsenic	**7440-38-2**	**0.260**		**0.00752**
Barium	**7440-39-3**	**5.64**		**0.859**
Beryllium	**7440-41-7**	**0.0145**		**0.00257**
Cadmium	7440-43-9	0.00981	U	0.0595
Chromium	**7440-47-3**	**2.87**		**1.77**
Cobalt	**7440-48-4**	**0.451**		**0.0350**
Copper	**7440-50-8**	**22.3**		**2.11**
Lead	**7439-92-1**	**0.929**		**0.172**
Manganese	**7439-96-5**	**14.1**		**1.52**
Molybdenum	**7439-98-7**	**1.38**		**0.288**
Nickel	**7440-02-0**	**1.24**		**0.523**
Selenium	**7782-49-2**	**0.228**		**0.00719**
Thallium	**7440-28-0**	**9.10E-4**		**4.73E-4**
Vanadium	**7440-62-2**	**1.61**		**0.0425**
Zinc	7440-66-6	14.2	U	61.7

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: 10/08/24 13:06
SUBMITTED: 09/30/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-092524-HM
Matrix: Air
Lab ID: 4093027-31
Sample Volume: 1916.41 m³
Filter ID:
Sampled: 09/25/24 23:59
Received: 09/30/24 13:19
Analysis Date: 10/02/24 09:42

Comments: Q9540556 - Recived 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**	**0.0330**	SL	**0.0328**
Arsenic	**7440-38-2**	**0.153**		**0.00795**
Barium	**7440-39-3**	**2.95**		**0.908**
Beryllium	**7440-41-7**	**0.0235**		**0.00272**
Cadmium	7440-43-9	0.0163	U	0.0629
Chromium	**7440-47-3**	**3.27**		**1.88**
Cobalt	**7440-48-4**	**0.471**		**0.0370**
Copper	**7440-50-8**	**47.6**		**2.23**
Lead	**7439-92-1**	**0.289**		**0.182**
Manganese	**7439-96-5**	**12.5**		**1.60**
Molybdenum	**7439-98-7**	**2.69**		**0.305**
Nickel	**7440-02-0**	**1.71**		**0.554**
Selenium	**7782-49-2**	**0.183**		**0.00761**
Thallium	**7440-28-0**	**9.11E-4**		**5.00E-4**
Vanadium	**7440-62-2**	**1.25**		**0.0449**
Zinc	7440-66-6	10.2	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: 10/08/24 13:06
SUBMITTED: 09/30/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM07-092524-HM
Matrix: Air
Lab ID: 4093027-32
Sample Volume: 1902.545 m³
Filter ID:
Sampled: 09/25/24 23:59
Received: 09/30/24 13:19
Analysis Date: 10/02/24 10:14

Comments: Q9540553 - Recived 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**	**0.0505**	SL	**0.0330**
Arsenic	**7440-38-2**	**0.152**		**0.00801**
Barium	**7440-39-3**	**2.29**		**0.915**
Beryllium	**7440-41-7**	**0.00893**		**0.00274**
Cadmium	7440-43-9	0.00987	U	0.0634
Chromium	**7440-47-3**	**8.63**		**1.89**
Cobalt	**7440-48-4**	**0.411**		**0.0373**
Copper	**7440-50-8**	**23.3**		**2.25**
Lead	**7439-92-1**	**0.246**		**0.183**
Manganese	**7439-96-5**	**10.9**		**1.62**
Molybdenum	**7439-98-7**	**1.77**		**0.307**
Nickel	**7440-02-0**	**3.87**		**0.558**
Selenium	**7782-49-2**	**0.168**		**0.00766**
Thallium	**7440-28-0**	**7.28E-4**		**5.04E-4**
Vanadium	**7440-62-2**	**0.961**		**0.0452**
Zinc	7440-66-6	8.38	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: 10/08/24 13:06
SUBMITTED: 09/30/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-FB01-092524-HM
Matrix: Air
Lab ID: 4093027-33
Sample Volume: 2053.418 m³
Filter ID:
Sampled: 09/25/24 00:00
Received: 09/30/24 13:19
Analysis Date: 10/02/24 10:30

Comments: Q9540546 - Recived 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	0.00774	SL, U	0.0306
Arsenic	7440-38-2	0.00446	U	0.00742
Barium	7440-39-3	0.759	U	0.848
Beryllium	7440-41-7	0.00102	U	0.00254
Cadmium	7440-43-9	0.00324	U	0.0587
Chromium	7440-47-3	1.38	U	1.75
Cobalt	**7440-48-4**	**0.0353**	FB-01	**0.0345**
Copper	7440-50-8	0.568	U	2.08
Lead	7439-92-1	0.0494	U	0.170
Manganese	7439-96-5	0.219	U	1.50
Molybdenum	7439-98-7	0.228	U	0.284
Nickel	7440-02-0	0.285	U	0.517
Selenium	7782-49-2	0.00350	U	0.00710
Thallium	7440-28-0	3.69E-5	U	4.67E-4
Vanadium	7440-62-2	0.0221	U	0.0419
Zinc	7440-66-6	2.44	U	60.9

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: 10/08/24 13:06
SUBMITTED: 09/30/24
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 2410006 - B4J0107										
Calibration Blank (2410006-CCB1)				Prepared & Analyzed: 10/01/24						
Antimony	5.18		ng/l							
Arsenic	-0.365		ng/l							U
Barium	2.11		ng/l							
Beryllium	-0.104		ng/l							U
Cadmium	0.177		ng/l							
Chromium	3.50		ng/l							
Cobalt	0.535		ng/l							
Copper	89.3		ng/l							
Lead	5.47		ng/l							
Manganese	8.42		ng/l							
Molybdenum	67.7		ng/l							
Nickel	1.97		ng/l							
Selenium	13.1		ng/l							
Thallium	0.619		ng/l							
Vanadium	-29.4		ng/l							U
Zinc	-122		ng/l							U
Calibration Blank (2410006-CCB2)				Prepared & Analyzed: 10/01/24						
Antimony	3.33		ng/l							
Arsenic	3.07		ng/l							
Barium	1.51		ng/l							
Beryllium	0.393		ng/l							
Cadmium	0.208		ng/l							
Chromium	4.28		ng/l							
Cobalt	0.516		ng/l							
Copper	61.7		ng/l							
Lead	3.49		ng/l							
Manganese	7.65		ng/l							
Molybdenum	21.5		ng/l							
Nickel	2.12		ng/l							
Selenium	3.10		ng/l							
Thallium	0.219		ng/l							
Vanadium	-24.5		ng/l							U
Zinc	-136		ng/l							U
Calibration Blank (2410006-CCB3)				Prepared: 10/01/24 Analyzed: 10/02/24						
Antimony	3.52		ng/l							
Arsenic	4.48		ng/l							
Barium	2.22		ng/l							
Beryllium	0.0164		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 2410006 - B4J0107										
Calibration Blank (2410006-CCB3) Contin				Prepared: 10/01/24 Analyzed: 10/02/24						
Cadmium	0.230		ng/l							
Chromium	4.34		ng/l							
Cobalt	0.482		ng/l							
Copper	49.9		ng/l							
Lead	2.95		ng/l							
Manganese	6.67		ng/l							
Molybdenum	25.0		ng/l							
Nickel	2.68		ng/l							
Selenium	7.38		ng/l							
Thallium	0.403		ng/l							
Vanadium	-30.3		ng/l							U
Zinc	-125		ng/l							U
Calibration Blank (2410006-CCB4)				Prepared: 10/01/24 Analyzed: 10/02/24						
Antimony	3.14		ng/l							
Arsenic	2.30		ng/l							
Barium	1.07		ng/l							
Beryllium	0.0219		ng/l							
Cadmium	0.0634		ng/l							
Chromium	3.56		ng/l							
Cobalt	0.518		ng/l							
Copper	48.7		ng/l							
Lead	3.15		ng/l							
Manganese	6.84		ng/l							
Molybdenum	24.9		ng/l							
Nickel	2.86		ng/l							
Selenium	-0.724		ng/l							U
Thallium	0.481		ng/l							
Vanadium	-34.4		ng/l							U
Zinc	-142		ng/l							U
Calibration Blank (2410006-CCB5)				Prepared: 10/01/24 Analyzed: 10/02/24						
Antimony	2.29		ng/l							
Arsenic	3.69		ng/l							
Barium	1.08		ng/l							
Beryllium	-0.308		ng/l							U
Cadmium	0.0884		ng/l							
Chromium	2.23		ng/l							
Cobalt	0.412		ng/l							
Copper	37.8		ng/l							

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2410006 - B4J0107										
Calibration Blank (2410006-CCB5) Contin				Prepared: 10/01/24 Analyzed: 10/02/24						
Lead	2.62		ng/l							
Manganese	4.89		ng/l							
Molybdenum	18.2		ng/l							
Nickel	2.11		ng/l							
Selenium	9.15		ng/l							
Thallium	0.617		ng/l							
Vanadium	-31.9		ng/l							U
Zinc	-118		ng/l							U
Calibration Blank (2410006-CCB6)				Prepared: 10/01/24 Analyzed: 10/02/24						
Antimony	1.77		ng/l							
Arsenic	3.23		ng/l							
Barium	0.793		ng/l							
Beryllium	-0.544		ng/l							U
Cadmium	0.222		ng/l							
Chromium	1.95		ng/l							
Cobalt	0.409		ng/l							
Copper	29.3		ng/l							
Lead	2.43		ng/l							
Manganese	5.00		ng/l							
Molybdenum	21.3		ng/l							
Nickel	3.69		ng/l							
Selenium	5.11		ng/l							
Thallium	0.880		ng/l							
Vanadium	-35.2		ng/l							U
Zinc	-115		ng/l							U
Calibration Blank (2410006-CCB7)				Prepared: 10/01/24 Analyzed: 10/02/24						
Antimony	1.68		ng/l							
Arsenic	7.13		ng/l							
Barium	1.01		ng/l							
Beryllium	-0.711		ng/l							U
Cadmium	0.0376		ng/l							
Chromium	3.40		ng/l							
Cobalt	0.371		ng/l							
Copper	29.0		ng/l							
Lead	2.54		ng/l							
Manganese	3.87		ng/l							
Molybdenum	22.5		ng/l							
Nickel	2.63		ng/l							

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2410006 - B4J0107										
Calibration Blank (2410006-CCB7) Contin				Prepared: 10/01/24 Analyzed: 10/02/24						
Selenium	14.4		ng/l							
Thallium	1.19		ng/l							
Vanadium	-39.9		ng/l							U
Zinc	-138		ng/l							U
Calibration Check (2410006-CCV1)				Prepared & Analyzed: 10/01/24						
Antimony	20000		ng/l	20000		100	90-110			
Arsenic	19900		ng/l	20000		99.7	90-110			
Barium	200000		ng/l	200000		99.9	90-110			
Beryllium	4750		ng/l	5000.0		95.0	90-110			
Cadmium	20100		ng/l	20000		101	90-110			
Chromium	237000		ng/l	240000		98.9	90-110			
Cobalt	50100		ng/l	50000		100	90-110			
Copper	2.02E6		ng/l	2.0000E6		101	90-110			
Lead	199000		ng/l	200000		99.6	90-110			
Manganese	500000		ng/l	500000		100	90-110			
Molybdenum	49600		ng/l	50000		99.1	90-110			
Nickel	121000		ng/l	120000		101	90-110			
Selenium	20000		ng/l	20000		100	90-110			
Thallium	497		ng/l	500.00		99.5	90-110			
Vanadium	19900		ng/l	20000		99.3	90-110			
Zinc	514000		ng/l	500000		103	90-110			
Calibration Check (2410006-CCV2)				Prepared & Analyzed: 10/01/24						
Antimony	19900		ng/l	20000		99.5	90-110			
Arsenic	19700		ng/l	20000		98.5	90-110			
Barium	199000		ng/l	200000		99.3	90-110			
Beryllium	5010		ng/l	5000.0		100	90-110			
Cadmium	19800		ng/l	20000		98.9	90-110			
Chromium	233000		ng/l	240000		97.3	90-110			
Cobalt	49000		ng/l	50000		98.0	90-110			
Copper	1.98E6		ng/l	2.0000E6		99.2	90-110			
Lead	197000		ng/l	200000		98.3	90-110			
Manganese	491000		ng/l	500000		98.2	90-110			
Molybdenum	48700		ng/l	50000		97.4	90-110			
Nickel	118000		ng/l	120000		98.2	90-110			
Selenium	19900		ng/l	20000		99.4	90-110			
Thallium	494		ng/l	500.00		98.8	90-110			
Vanadium	19600		ng/l	20000		98.0	90-110			
Zinc	507000		ng/l	500000		101	90-110			

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2410006 - B4J0107										
Calibration Check (2410006-CCV3)					Prepared & Analyzed: 10/01/24					
Antimony	20100		ng/l	20000		100	90-110			
Arsenic	19800		ng/l	20000		99.0	90-110			
Barium	199000		ng/l	200000		99.3	90-110			
Beryllium	4980		ng/l	5000.0		99.5	90-110			
Cadmium	19900		ng/l	20000		99.7	90-110			
Chromium	235000		ng/l	240000		97.8	90-110			
Cobalt	49200		ng/l	50000		98.4	90-110			
Copper	1.99E6		ng/l	2.0000E6		99.3	90-110			
Lead	198000		ng/l	200000		98.8	90-110			
Manganese	497000		ng/l	500000		99.4	90-110			
Molybdenum	48600		ng/l	50000		97.1	90-110			
Nickel	118000		ng/l	120000		98.3	90-110			
Selenium	20300		ng/l	20000		101	90-110			
Thallium	492		ng/l	500.00		98.4	90-110			
Vanadium	19700		ng/l	20000		98.6	90-110			
Zinc	511000		ng/l	500000		102	90-110			
Calibration Check (2410006-CCV4)					Prepared: 10/01/24 Analyzed: 10/02/24					
Antimony	20900		ng/l	20000		105	90-110			
Arsenic	20400		ng/l	20000		102	90-110			
Barium	206000		ng/l	200000		103	90-110			
Beryllium	5090		ng/l	5000.0		102	90-110			
Cadmium	20600		ng/l	20000		103	90-110			
Chromium	239000		ng/l	240000		99.7	90-110			
Cobalt	50300		ng/l	50000		101	90-110			
Copper	2.02E6		ng/l	2.0000E6		101	90-110			
Lead	204000		ng/l	200000		102	90-110			
Manganese	509000		ng/l	500000		102	90-110			
Molybdenum	50200		ng/l	50000		100	90-110			
Nickel	121000		ng/l	120000		101	90-110			
Selenium	20600		ng/l	20000		103	90-110			
Thallium	500		ng/l	500.00		100	90-110			
Vanadium	20300		ng/l	20000		101	90-110			
Zinc	522000		ng/l	500000		104	90-110			
Calibration Check (2410006-CCV5)					Prepared: 10/01/24 Analyzed: 10/02/24					
Antimony	21000		ng/l	20000		105	90-110			
Arsenic	20400		ng/l	20000		102	90-110			
Barium	207000		ng/l	200000		104	90-110			
Beryllium	5060		ng/l	5000.0		101	90-110			

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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 2410006 - B4J0107										
Calibration Check (2410006-CCV5) Contin				Prepared: 10/01/24 Analyzed: 10/02/24						
Cadmium	20500		ng/l	20000		103	90-110			
Chromium	240000		ng/l	240000		99.9	90-110			
Cobalt	50500		ng/l	50000		101	90-110			
Copper	2.03E6		ng/l	2.0000E6		102	90-110			
Lead	205000		ng/l	200000		103	90-110			
Manganese	514000		ng/l	500000		103	90-110			
Molybdenum	50400		ng/l	50000		101	90-110			
Nickel	121000		ng/l	120000		101	90-110			
Selenium	20500		ng/l	20000		102	90-110			
Thallium	495		ng/l	500.00		98.9	90-110			
Vanadium	20300		ng/l	20000		101	90-110			
Zinc	522000		ng/l	500000		104	90-110			
Calibration Check (2410006-CCV6)				Prepared: 10/01/24 Analyzed: 10/02/24						
Antimony	20900		ng/l	20000		104	90-110			
Arsenic	20500		ng/l	20000		103	90-110			
Barium	211000		ng/l	200000		105	90-110			
Beryllium	5080		ng/l	5000.0		102	90-110			
Cadmium	20500		ng/l	20000		102	90-110			
Chromium	241000		ng/l	240000		100	90-110			
Cobalt	50200		ng/l	50000		100	90-110			
Copper	2.04E6		ng/l	2.0000E6		102	90-110			
Lead	205000		ng/l	200000		102	90-110			
Manganese	515000		ng/l	500000		103	90-110			
Molybdenum	50500		ng/l	50000		101	90-110			
Nickel	121000		ng/l	120000		101	90-110			
Selenium	20900		ng/l	20000		104	90-110			
Thallium	490		ng/l	500.00		97.9	90-110			
Vanadium	20300		ng/l	20000		102	90-110			
Zinc	524000		ng/l	500000		105	90-110			
Calibration Check (2410006-CCV7)				Prepared: 10/01/24 Analyzed: 10/02/24						
Antimony	21200		ng/l	20000		106	90-110			
Arsenic	20500		ng/l	20000		102	90-110			
Barium	212000		ng/l	200000		106	90-110			
Beryllium	5080		ng/l	5000.0		102	90-110			
Cadmium	20600		ng/l	20000		103	90-110			
Chromium	241000		ng/l	240000		100	90-110			
Cobalt	50300		ng/l	50000		101	90-110			
Copper	2.04E6		ng/l	2.0000E6		102	90-110			

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2410006 - B4J0107										
Calibration Check (2410006-CCV7) Contin					Prepared: 10/01/24 Analyzed: 10/02/24					
Lead	206000		ng/l	200000		103	90-110			
Manganese	512000		ng/l	500000		102	90-110			
Molybdenum	51300		ng/l	50000		103	90-110			
Nickel	121000		ng/l	120000		101	90-110			
Selenium	20500		ng/l	20000		103	90-110			
Thallium	495		ng/l	500.00		99.0	90-110			
Vanadium	20300		ng/l	20000		101	90-110			
Zinc	524000		ng/l	500000		105	90-110			
High Cal Check (2410006-HCV1)					Prepared & Analyzed: 10/01/24					
Antimony	40400		ng/l	40000		101	95-105			
Arsenic	40100		ng/l	40000		100	95-105			
Barium	403000		ng/l	400000		101	95-105			
Beryllium	9910		ng/l	10000		99.1	95-105			
Cadmium	40000		ng/l	40000		100	95-105			
Chromium	480000		ng/l	480000		100	95-105			
Cobalt	99900		ng/l	100000		99.9	95-105			
Copper	3.98E6		ng/l	4.0000E6		99.5	95-105			
Lead	401000		ng/l	400000		100	95-105			
Manganese	1.00E6		ng/l	1.0000E6		100	95-105			
Molybdenum	100000		ng/l	100000		100	95-105			
Nickel	239000		ng/l	240000		99.5	95-105			
Selenium	40700		ng/l	40000		102	95-105			
Thallium	994		ng/l	1000.0		99.4	95-105			
Vanadium	40200		ng/l	40000		101	95-105			
Zinc	999000		ng/l	1.0000E6		99.9	95-105			
Initial Cal Blank (2410006-ICB1)					Prepared & Analyzed: 10/01/24					
Antimony	1.84		ng/l							
Arsenic	-3.91		ng/l							U
Barium	-0.412		ng/l							U
Beryllium	-0.274		ng/l							U
Cadmium	0.0447		ng/l							
Chromium	1.40		ng/l							
Cobalt	0.137		ng/l							
Copper	31.7		ng/l							
Lead	1.93		ng/l							
Manganese	3.86		ng/l							
Molybdenum	10.5		ng/l							
Nickel	-1.12		ng/l							U

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2410006 - B4J0107										
Initial Cal Blank (2410006-ICB1) Continu				Prepared & Analyzed: 10/01/24						
Selenium	3.49		ng/l							
Thallium	0.331		ng/l							
Vanadium	-15.5		ng/l							U
Zinc	-107		ng/l							U
Initial Cal Check (2410006-ICV1)				Prepared & Analyzed: 10/01/24						
Antimony	20100		ng/l	20000		100	90-110			
Arsenic	19200		ng/l	20000		95.9	90-110			
Barium	193000		ng/l	200000		96.7	90-110			
Beryllium	4950		ng/l	5000.0		98.9	90-110			
Cadmium	20400		ng/l	20000		102	90-110			
Chromium	237000		ng/l	240000		98.6	90-110			
Cobalt	49900		ng/l	50000		99.8	90-110			
Copper	2.06E6		ng/l	2.0000E6		103	90-110			
Lead	199000		ng/l	200000		99.7	90-110			
Manganese	497000		ng/l	500000		99.3	90-110			
Molybdenum	49300		ng/l	50000		98.6	90-110			
Nickel	123000		ng/l	120000		102	90-110			
Selenium	20300		ng/l	20000		102	90-110			
Thallium	478		ng/l	500.00		95.7	90-110			
Vanadium	20400		ng/l	20000		102	90-110			
Zinc	532000		ng/l	500000		106	90-110			
Interference Check A (2410006-IFA1)				Prepared & Analyzed: 10/01/24						
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	313000		ng/l	60000		522	80-120			
Nickel	0.00		ng/l				80-120			U
Selenium	0.00		ng/l				80-120			U
Thallium	0.00		ng/l				80-120			U
Vanadium	0.00		ng/l				80-120			U
Zinc	0.00		ng/l				80-120			U

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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2410006 - B4J0107										
Interference Check B (2410006-IFB1)					Prepared & Analyzed: 10/01/24					
Antimony	20800		ng/l	10000		208	80-120			
Arsenic	20300		ng/l	10000		203	80-120			
Barium	202000		ng/l	250000		80.7	80-120			
Beryllium	4870		ng/l	5000.0		97.4	80-120			
Cadmium	20000		ng/l	50000		40.0	80-120			
Chromium	232000		ng/l	120000		193	80-120			
Cobalt	51900		ng/l	5000.0		NR	80-120			
Copper	1.93E6		ng/l	200000		963	80-120			
Lead	210000		ng/l	200000		105	80-120			
Manganese	521000		ng/l	100000		521	80-120			
Molybdenum	369000		ng/l	70000		527	80-120			
Nickel	118000		ng/l	25000		472	80-120			
Selenium	19500		ng/l	10000		195	80-120			
Thallium	510		ng/l	500.00		102	80-120			
Vanadium	19900		ng/l	20000		99.4	80-120			
Zinc	493000		ng/l	700000		70.5	80-120			
Batch B4J0107 - ICP-MS Extraction										
Blank (B4J0107-BLK1)					Prepared & Analyzed: 10/01/24					
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 (B4J0107-BS1)					Prepared & Analyzed: 10/01/24					
Antimony	0.814	0.0386	ng/m³ Air	1.3829		58.9	80-120			SL
Arsenic	2.72	0.00937	ng/m³ Air	2.7658		98.4	80-120			
Barium	29.2	1.07	ng/m³ Air	27.658		105	80-120			

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: 10/08/24 13:06
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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 B4J0107 - ICP-MS Extraction										
LCS (B4J0107-BS1) Continued					Prepared & Analyzed: 10/01/24					
Beryllium	1.33	0.00320	ng/m³ Air	1.3829		96.1	80-120			
Cadmium	1.42	0.0741	ng/m³ Air	1.3829		102	80-120			
Chromium	15.2	2.21	ng/m³ Air	13.829		110	80-120			
Cobalt	1.38	0.0436	ng/m³ Air	1.3829		100	80-120			
Copper	29.4	2.63	ng/m³ Air	27.658		106	80-120			
Lead	13.5	0.214	ng/m³ Air	13.829		97.3	80-120			
Manganese	8.59	1.89	ng/m³ Air	8.2975		104	80-120			
Molybdenum	1.55	0.359	ng/m³ Air	1.3829		112	80-120			
Nickel	3.27	0.652	ng/m³ Air	2.7658		118	80-120			
Selenium	2.75	0.00896	ng/m³ Air	2.7658		99.5	80-120			
Thallium	0.134	5.89E-4	ng/m³ Air	0.13829		96.7	80-120			
Vanadium	2.77	0.0529	ng/m³ Air	2.7658		100	80-120			
Zinc	94.2	76.8	ng/m³ Air	82.975		113	80-120			
LCS (B4J0107-BS2)					Prepared & Analyzed: 10/01/24					
Antimony	0.816	0.0386	ng/m³ Air	1.3829		59.0	80-120			SL
Arsenic	2.72	0.00937	ng/m³ Air	2.7658		98.2	80-120			
Barium	28.9	1.07	ng/m³ Air	27.658		105	80-120			
Beryllium	1.31	0.00320	ng/m³ Air	1.3829		94.6	80-120			
Cadmium	1.41	0.0741	ng/m³ Air	1.3829		102	80-120			
Chromium	15.1	2.21	ng/m³ Air	13.829		109	80-120			
Cobalt	1.38	0.0436	ng/m³ Air	1.3829		99.6	80-120			
Copper	29.2	2.63	ng/m³ Air	27.658		106	80-120			
Lead	13.3	0.214	ng/m³ Air	13.829		96.4	80-120			
Manganese	8.56	1.89	ng/m³ Air	8.2975		103	80-120			
Molybdenum	1.53	0.359	ng/m³ Air	1.3829		111	80-120			
Nickel	3.24	0.652	ng/m³ Air	2.7658		117	80-120			
Selenium	2.76	0.00896	ng/m³ Air	2.7658		99.8	80-120			
Thallium	0.130	5.89E-4	ng/m³ Air	0.13829		94.1	80-120			
Vanadium	2.77	0.0529	ng/m³ Air	2.7658		100	80-120			
Zinc	94.9	76.8	ng/m³ Air	82.975		114	80-120			
Duplicate (B4J0107-DUP1)		**Source: 4093027-13**			Prepared & Analyzed: 10/01/24					
Antimony	0.0659	0.0317	ng/m³ Air		0.0712			7.74	10	SL
Arsenic	0.335	0.00771	ng/m³ Air		0.367			9.13	10	
Barium	2.11	0.880	ng/m³ Air		2.33			9.98	10	
Beryllium	0.00772	0.00263	ng/m³ Air		0.00839			8.34	10	
Cadmium	ND	0.0609	ng/m³ Air		ND				10	U
Chromium	ND	1.82	ng/m³ Air		2.01				10	U
Cobalt	0.221	0.0359	ng/m³ Air		0.248			11.6	10	

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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 B4J0107 - ICP-MS Extraction										
Duplicate (B4J0107-DUP1) Continued			**Source: 4093027-13**		Prepared & Analyzed: 10/01/24					
Copper	24.8	2.16	ng/m³ Air		30.4			20.2	10	D-F
Lead	0.205	0.176	ng/m³ Air		0.193			5.98	10	
Manganese	7.28	1.55	ng/m³ Air		8.05			9.96	10	
Molybdenum	0.907	0.295	ng/m³ Air		1.09			18.0	10	
Nickel	0.835	0.536	ng/m³ Air		1.00			18.1	10	
Selenium	0.126	0.00737	ng/m³ Air		0.134			6.14	10	
Thallium	5.71E-4	4.84E-4	ng/m³ Air		6.72E-4			16.3	10	
Vanadium	0.712	0.0435	ng/m³ Air		0.775			8.46	10	
Zinc	ND	63.2	ng/m³ Air		ND				10	U
Duplicate (B4J0107-DUP2)			**Source: 4093027-20**		Prepared & Analyzed: 10/01/24					
Antimony	0.0610	0.0306	ng/m³ Air		0.0597			2.08	10	SL
Arsenic	0.178	0.00743	ng/m³ Air		0.182			2.06	10	
Barium	2.48	0.848	ng/m³ Air		2.43			2.01	10	
Beryllium	0.00609	0.00254	ng/m³ Air		0.00616			1.04	10	
Cadmium	ND	0.0588	ng/m³ Air		ND				10	U
Chromium	2.33	1.75	ng/m³ Air		2.31			0.825	10	
Cobalt	0.235	0.0346	ng/m³ Air		0.225			4.18	10	
Copper	46.1	2.09	ng/m³ Air		48.8			5.60	10	
Lead	0.474	0.170	ng/m³ Air		0.588			21.5	10	
Manganese	5.82	1.50	ng/m³ Air		5.82			0.0705	10	
Molybdenum	1.76	0.285	ng/m³ Air		1.83			3.95	10	
Nickel	0.979	0.517	ng/m³ Air		0.948			3.19	10	
Selenium	0.153	0.00710	ng/m³ Air		0.160			4.96	10	
Thallium	9.17E-4	4.67E-4	ng/m³ Air		0.00100			9.20	10	
Vanadium	0.872	0.0419	ng/m³ Air		0.883			1.35	10	
Zinc	ND	60.9	ng/m³ Air		ND				10	U
Duplicate (B4J0107-DUP3)			**Source: 4093027-26**		Prepared: 10/01/24 Analyzed: 10/02/24					
Antimony	0.105	0.0286	ng/m³ Air		0.105			0.127	10	SL
Arsenic	0.364	0.00694	ng/m³ Air		0.359			1.60	10	
Barium	5.69	0.792	ng/m³ Air		5.73			0.732	10	
Beryllium	0.0180	0.00237	ng/m³ Air		0.0167			7.64	10	
Cadmium	ND	0.0549	ng/m³ Air		ND				10	U
Chromium	2.95	1.64	ng/m³ Air		2.93			0.634	10	
Cobalt	0.505	0.0323	ng/m³ Air		0.496			1.77	10	
Copper	19.8	1.95	ng/m³ Air		19.6			0.925	10	
Lead	1.52	0.158	ng/m³ Air		1.53			0.352	10	
Manganese	16.1	1.40	ng/m³ Air		16.0			1.08	10	
Molybdenum	1.02	0.266	ng/m³ Air		1.02			0.104	10	

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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 B4J0107 - ICP-MS Extraction										
Duplicate (B4J0107-DUP3) Continued		**Source: 4093027-26**		Prepared: 10/01/24 Analyzed: 10/02/24						
Nickel	1.53	0.483	ng/m³ Air		1.52			0.965	10	
Selenium	0.207	0.00664	ng/m³ Air		0.208			0.382	10	
Thallium	0.00123	4.36E-4	ng/m³ Air		0.00118			4.24	10	
Vanadium	1.80	0.0392	ng/m³ Air		1.79			0.462	10	
Zinc	ND	56.9	ng/m³ Air		ND				10	U
Duplicate (B4J0107-DUP4)		**Source: 4093027-31**		Prepared: 10/01/24 Analyzed: 10/02/24						
Antimony	ND	0.0328	ng/m³ Air		0.0330				10	SL, U
Arsenic	0.155	0.00795	ng/m³ Air		0.153			1.53	10	
Barium	2.96	0.908	ng/m³ Air		2.95			0.510	10	
Beryllium	0.0233	0.00272	ng/m³ Air		0.0235			0.855	10	
Cadmium	ND	0.0629	ng/m³ Air		ND				10	U
Chromium	3.24	1.88	ng/m³ Air		3.27			1.14	10	
Cobalt	0.471	0.0370	ng/m³ Air		0.471			0.176	10	
Copper	47.5	2.23	ng/m³ Air		47.6			0.151	10	
Lead	0.286	0.182	ng/m³ Air		0.289			1.10	10	
Manganese	12.5	1.60	ng/m³ Air		12.5			0.147	10	
Molybdenum	2.66	0.305	ng/m³ Air		2.69			1.21	10	
Nickel	1.72	0.554	ng/m³ Air		1.71			0.414	10	
Selenium	0.178	0.00761	ng/m³ Air		0.183			2.77	10	
Thallium	7.85E-4	5.00E-4	ng/m³ Air		9.11E-4			14.9	10	
Vanadium	1.24	0.0449	ng/m³ Air		1.25			0.544	10	
Zinc	ND	65.2	ng/m³ Air		ND				10	U
Matrix Spike (B4J0107-MS1)		**Source: 4093027-13**		Prepared & Analyzed: 10/01/24						
Antimony	0.769	0.0317	ng/m³ Air	1.1374	0.0712	61.3	80-120			SL
Arsenic	2.64	0.00771	ng/m³ Air	2.2749	0.367	99.8	80-120			
Barium	25.2	0.880	ng/m³ Air	22.749	2.33	100	80-120			
Beryllium	1.10	0.00263	ng/m³ Air	1.1374	0.00839	95.7	80-120			
Cadmium	1.17	0.0609	ng/m³ Air	1.1374	ND	103	80-120			
Chromium	13.3	1.82	ng/m³ Air	11.374	2.01	98.9	80-120			
Cobalt	1.34	0.0359	ng/m³ Air	1.1374	0.248	96.2	80-120			
Copper	47.2	2.16	ng/m³ Air	22.749	30.4	73.7	80-120			QM-07
Lead	11.3	0.176	ng/m³ Air	11.374	0.193	97.6	80-120			
Manganese	14.2	1.55	ng/m³ Air	6.8246	8.05	89.5	80-120			
Molybdenum	2.02	0.295	ng/m³ Air	1.1374	1.09	82.2	80-120			
Nickel	3.11	0.536	ng/m³ Air	2.2749	1.00	92.6	80-120			
Selenium	2.39	0.00737	ng/m³ Air	2.2749	0.134	99.1	80-120			
Thallium	0.108	4.84E-4	ng/m³ Air	0.11374	6.72E-4	94.4	80-120			
Vanadium	2.95	0.0435	ng/m³ Air	2.2749	0.775	95.8	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 B4J0107 - ICP-MS Extraction										
Matrix Spike (B4J0107-MS1) Continued Source: 4093027-13 Prepared & Analyzed: 10/01/24										
Zinc	82.1	63.2	ng/m³ Air	68.246	ND	120	80-120			
Matrix Spike (B4J0107-MS2) Source: 4093027-20 Prepared & Analyzed: 10/01/24										
Antimony	0.609	0.0306	ng/m³ Air	1.0965	0.0597	50.1	80-120			SL
Arsenic	2.28	0.00743	ng/m³ Air	2.1930	0.182	95.7	80-120			
Barium	24.0	0.848	ng/m³ Air	21.930	2.43	98.6	80-120			
Beryllium	1.07	0.00254	ng/m³ Air	1.0965	0.00616	96.8	80-120			
Cadmium	1.12	0.0588	ng/m³ Air	1.0965	ND	102	80-120			
Chromium	13.7	1.75	ng/m³ Air	10.965	2.31	104	80-120			
Cobalt	1.28	0.0346	ng/m³ Air	1.0965	0.225	96.5	80-120			
Copper	66.1	2.09	ng/m³ Air	21.930	48.8	79.0	80-120			QM-07
Lead	11.0	0.170	ng/m³ Air	10.965	0.588	95.0	80-120			
Manganese	12.2	1.50	ng/m³ Air	6.5791	5.82	97.1	80-120			
Molybdenum	2.68	0.285	ng/m³ Air	1.0965	1.83	77.4	80-120			QM-07
Nickel	3.06	0.517	ng/m³ Air	2.1930	0.948	96.4	80-120			
Selenium	2.30	0.00710	ng/m³ Air	2.1930	0.160	97.6	80-120			
Thallium	0.102	4.67E-4	ng/m³ Air	0.10965	0.00100	92.4	80-120			
Vanadium	2.97	0.0419	ng/m³ Air	2.1930	0.883	95.0	80-120			
Zinc	80.9	60.9	ng/m³ Air	65.791	ND	123	80-120			
Matrix Spike Dup (B4J0107-MSD1) Source: 4093027-13 Prepared & Analyzed: 10/01/24										
Antimony	0.788	0.0317	ng/m³ Air	1.1374	0.0712	63.0	80-120	2.44	20	SL
Arsenic	2.52	0.00771	ng/m³ Air	2.2749	0.367	94.7	80-120	4.48	20	
Barium	25.0	0.880	ng/m³ Air	22.749	2.33	99.7	80-120	0.564	20	
Beryllium	1.10	0.00263	ng/m³ Air	1.1374	0.00839	96.2	80-120	0.586	20	
Cadmium	1.32	0.0609	ng/m³ Air	1.1374	ND	116	80-120	12.2	20	
Chromium	13.0	1.82	ng/m³ Air	11.374	2.01	96.4	80-120	2.09	20	
Cobalt	1.32	0.0359	ng/m³ Air	1.1374	0.248	94.1	80-120	1.77	20	
Copper	47.1	2.16	ng/m³ Air	22.749	30.4	73.1	80-120	0.271	20	QM-07
Lead	11.2	0.176	ng/m³ Air	11.374	0.193	97.2	80-120	0.462	20	
Manganese	13.9	1.55	ng/m³ Air	6.8246	8.05	85.3	80-120	2.03	20	
Molybdenum	1.98	0.295	ng/m³ Air	1.1374	1.09	79.0	80-120	1.86	20	QM-07
Nickel	3.00	0.536	ng/m³ Air	2.2749	1.00	88.0	80-120	3.45	20	
Selenium	2.37	0.00737	ng/m³ Air	2.2749	0.134	98.4	80-120	0.671	20	
Thallium	0.109	4.84E-4	ng/m³ Air	0.11374	6.72E-4	95.6	80-120	1.20	20	
Vanadium	2.92	0.0435	ng/m³ Air	2.2749	0.775	94.3	80-120	1.20	20	
Zinc	80.9	63.2	ng/m³ Air	68.246	ND	119	80-120	1.42	20	
Matrix Spike Dup (B4J0107-MSD2) Source: 4093027-20 Prepared & Analyzed: 10/01/24										
Antimony	0.586	0.0306	ng/m³ Air	1.0965	0.0597	48.0	80-120	3.80	20	SL
Arsenic	2.29	0.00743	ng/m³ Air	2.1930	0.182	96.3	80-120	0.546	20	

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4J0107 - ICP-MS Extraction										
Matrix Spike Dup (B4J0107-MSD2) Contir			**Source: 4093027-20**		Prepared & Analyzed: 10/01/24					
Barium	24.6	0.848	ng/m³ Air	21.930	2.43	101	80-120	2.40	20	
Beryllium	1.07	0.00254	ng/m³ Air	1.0965	0.00616	97.2	80-120	0.437	20	
Cadmium	1.12	0.0588	ng/m³ Air	1.0965	ND	102	80-120	0.196	20	
Chromium	13.1	1.75	ng/m³ Air	10.965	2.31	98.8	80-120	4.07	20	
Cobalt	1.29	0.0346	ng/m³ Air	1.0965	0.225	97.5	80-120	0.915	20	
Copper	66.5	2.09	ng/m³ Air	21.930	48.8	80.7	80-120	0.568	20	
Lead	11.2	0.170	ng/m³ Air	10.965	0.588	96.4	80-120	1.44	20	
Manganese	12.5	1.50	ng/m³ Air	6.5791	5.82	102	80-120	2.60	20	
Molybdenum	2.79	0.285	ng/m³ Air	1.0965	1.83	87.0	80-120	3.88	20	
Nickel	3.03	0.517	ng/m³ Air	2.1930	0.948	94.9	80-120	1.06	20	
Selenium	2.34	0.00710	ng/m³ Air	2.1930	0.160	99.2	80-120	1.49	20	
Thallium	0.104	4.67E-4	ng/m³ Air	0.10965	0.00100	94.1	80-120	1.77	20	
Vanadium	3.04	0.0419	ng/m³ Air	2.1930	0.883	98.5	80-120	2.54	20	
Zinc	80.2	60.9	ng/m³ Air	65.791	ND	122	80-120	0.808	20	
Post Spike (B4J0107-PS1)			**Source: 4093027-13**		Prepared & Analyzed: 10/01/24					
Antimony	0.294	0.0317	ng/m³ Air	0.22749	0.0712	98.1	75-125			SL
Arsenic	1.41	0.00771	ng/m³ Air	1.1374	0.367	91.9	75-125			
Barium	4.43	0.880	ng/m³ Air	2.2749	2.33	92.5	75-125			
Beryllium	0.227	0.00263	ng/m³ Air	0.22749	0.00839	95.9	75-125			
Cadmium	0.123	0.0609	ng/m³ Air	0.11374	ND	108	75-125			
Chromium	3.08	1.82	ng/m³ Air	1.1374	2.01	93.7	75-125			
Cobalt	0.465	0.0359	ng/m³ Air	0.22749	0.248	95.3	75-125			
Copper	41.6	2.16	ng/m³ Air	11.374	30.4	98.5	75-125			
Lead	22.6	0.176	ng/m³ Air	22.749	0.193	98.5	75-125			
Manganese	10.3	1.55	ng/m³ Air	2.2749	8.05	98.4	75-125			
Molybdenum	2.13	0.295	ng/m³ Air	1.1374	1.09	92.0	75-125			
Nickel	3.19	0.536	ng/m³ Air	2.2749	1.00	96.3	75-125			
Selenium	1.23	0.00737	ng/m³ Air	1.1374	0.134	96.7	75-125			
Thallium	0.0544	4.84E-4	ng/m³ Air	5.6871E-2	6.72E-4	94.5	75-125			
Vanadium	1.88	0.0435	ng/m³ Air	1.1374	0.775	96.7	75-125			
Zinc	ND	63.2	ng/m³ Air	22.749	ND		75-125			U
Post Spike (B4J0107-PS2)			**Source: 4093027-20**		Prepared & Analyzed: 10/01/24					
Antimony	0.281	0.0306	ng/m³ Air	0.21930	0.0597	101	75-125			SL
Arsenic	1.20	0.00743	ng/m³ Air	1.0965	0.182	92.9	75-125			
Barium	4.50	0.848	ng/m³ Air	2.1930	2.43	94.1	75-125			
Beryllium	0.223	0.00254	ng/m³ Air	0.21930	0.00616	98.8	75-125			
Cadmium	0.129	0.0588	ng/m³ Air	0.10965	ND	117	75-125			
Chromium	3.37	1.75	ng/m³ Air	1.0965	2.31	96.7	75-125			

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: 10/08/24 13:06
SUBMITTED: 09/30/24
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 B4J0107 - ICP-MS Extraction										
Post Spike (B4J0107-PS2) Continued		**Source: 4093027-20**		Prepared & Analyzed: 10/01/24						
Cobalt	0.438	0.0346	ng/m³ Air	0.21930	0.225	97.3	75-125			
Copper	60.3	2.09	ng/m³ Air	10.965	48.8	105	75-125			
Lead	22.7	0.170	ng/m³ Air	21.930	0.588	101	75-125			
Manganese	7.99	1.50	ng/m³ Air	2.1930	5.82	99.2	75-125			
Molybdenum	2.85	0.285	ng/m³ Air	1.0965	1.83	92.6	75-125			
Nickel	3.07	0.517	ng/m³ Air	2.1930	0.948	96.9	75-125			
Selenium	1.23	0.00710	ng/m³ Air	1.0965	0.160	98.0	75-125			
Thallium	0.0531	4.67E-4	ng/m³ Air	5.4826E-2	0.00100	95.1	75-125			
Vanadium	1.97	0.0419	ng/m³ Air	1.0965	0.883	99.3	75-125			
Zinc	ND	60.9	ng/m³ Air	21.930	ND		75-125			U
Dilution Check (B4J0107-SRL1)		**Source: 4093027-13**		Prepared & Analyzed: 10/01/24						
Antimony	ND	0.159	ng/m³ Air		ND				10	SL, U
Arsenic	0.371	0.0385	ng/m³ Air		0.367			1.19	10	
Barium	ND	4.40	ng/m³ Air		ND				10	U
Beryllium	ND	0.0132	ng/m³ Air		ND				10	U
Cadmium	ND	0.305	ng/m³ Air		ND				10	U
Chromium	ND	9.09	ng/m³ Air		ND				10	U
Cobalt	0.251	0.179	ng/m³ Air		0.248			1.06	10	
Copper	30.6	10.8	ng/m³ Air		30.4			0.486	10	
Lead	ND	0.880	ng/m³ Air		ND				10	U
Manganese	8.04	7.77	ng/m³ Air		8.05			0.0733	10	
Molybdenum	ND	1.48	ng/m³ Air		ND				10	U
Nickel	ND	2.68	ng/m³ Air		ND				10	U
Selenium	0.119	0.0368	ng/m³ Air		0.134			11.4	10	
Thallium	ND	0.00242	ng/m³ Air		ND				10	U
Vanadium	0.799	0.218	ng/m³ Air		0.775			3.02	10	
Zinc	ND	316	ng/m³ Air		ND				10	U
Dilution Check (B4J0107-SRL2)		**Source: 4093027-20**		Prepared & Analyzed: 10/01/24						
Antimony	ND	0.153	ng/m³ Air		ND				10	SL, U
Arsenic	0.189	0.0371	ng/m³ Air		0.182			4.01	10	
Barium	ND	4.24	ng/m³ Air		ND				10	U
Beryllium	ND	0.0127	ng/m³ Air		ND				10	U
Cadmium	ND	0.294	ng/m³ Air		ND				10	U
Chromium	ND	8.76	ng/m³ Air		ND				10	U
Cobalt	0.229	0.173	ng/m³ Air		0.225			1.57	10	
Copper	49.8	10.4	ng/m³ Air		48.8			2.06	10	
Lead	ND	0.848	ng/m³ Air		ND				10	U
Manganese	ND	7.49	ng/m³ Air		ND				10	U

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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 B4J0107 - ICP-MS Extraction										
Dilution Check (B4J0107-SRL2) Continued				**Source: 4093027-20**			Prepared & Analyzed: 10/01/24			
Molybdenum	1.82	1.42	ng/m³ Air		1.83			0.540	10	
Nickel	ND	2.58	ng/m³ Air		ND				10	U
Selenium	0.149	0.0355	ng/m³ Air		0.160			7.34	10	
Thallium	ND	0.00234	ng/m³ Air		ND				10	U
Vanadium	0.905	0.210	ng/m³ Air		0.883			2.44	10	
Zinc	ND	304	ng/m³ Air		ND				10	U

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Notes and Definitions

U	Under Detection Limit
SL	The spike recovery was outside acceptance limits. Reported value may be biased low.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD.
FB-01	Analyte exceeds Field Blank criteria.
D-F	Duplicate exceeds DQO 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 10/09/2024 and Shanna Vasser 10/09/2024
Laboratory: Eastern Research Group – Morrisville, NC
Collection date(s): 09/19/2025 – 09/25/2024
Report No: 4093027

√	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 cobalt in MFL-FB01-092524-HM.

Notes: None.