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

August 8 through August 14, 2024
[Report Updated: September 24, 2024]

Tetra Tech, Inc. (Tetra Tech) prepared a Community Air Monitoring and Sampling Plan (CAMSP) to address community air monitoring during debris removal operations in response to the 2023 Maui Wildfires. Air monitoring and sampling occurred from August 8 through August 14, 2024 at the four community locations listed below and shown on **Figure 1**:

- Leialii Hawaiian Homelands (AM-01)
- WW Pump Station #4 (AM-02)
- Lahaina Intermediate School (AM-03)
- Lahaina Boys & Girls Club (AM-04)

The CAMSP addresses ambient community air monitoring and sampling to assess conditions and determine whether debris removal activities, managed by the U.S. Army Corps of Engineers (USACE), and private contractors, significantly impact air quality in Lahaina. Data collected is made available to the State of Hawaii Department of Health, Clean Air Branch (HDOH) through an online shared site and the information presented in these weekly reports. Air monitoring and sampling as prescribed in the CAMSP will continue until debris removal activities are complete or until HDOH advises otherwise.

Air quality monitoring for particulate matter was collected at all four community locations 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 August 8 through August 14 at each of the four locations listed above. 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 [$PM_{2.5}$]). The Department of Health or 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 monitoring location throughout this reporting period. None of the results exceeded the 150 µg/m^3 screening level established in the CAMSP, as shown in **Table 1**.

Air Sampling Results

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

The heavy metal sample collected on August 14, 2024, from WW Pump Station #4 was voided because of equipment motor malfunction resulting in insufficient sample time and volume. For all other heavy metals, only low levels (i.e., all below the respective SSALs) were detected in ambient air samples at all community sampling locations (see **Table 2**).

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

Meteorological Summary

Overall wind conditions during this weekly event averaged 1.2 miles per hour originating from a generally 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, according to a primary calibration standard. Pump calibration and sampling were performed according to Tetra Tech SOPs 064-2 "Calibration of Air Sampling Pump" 073-3 "Air Quality Monitoring" and EPA Environmental Response Team (ERT) SOPs 2008 "General Air Monitoring and Sampling Guidelines" and 2015 "Asbestos Air Sampling," which were included in the CAMSP.

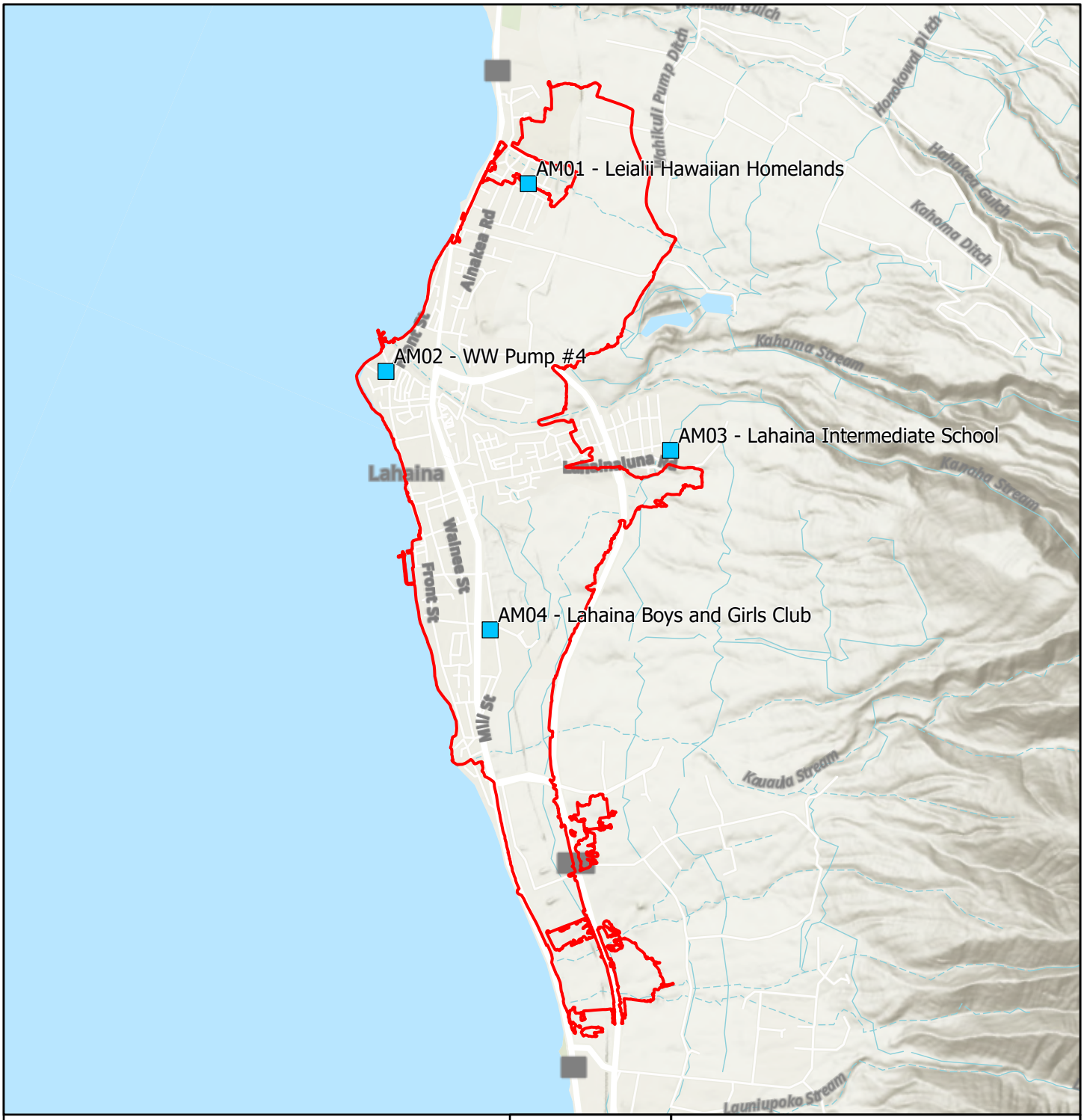
Sampling for metals occurred using Tisch Environmental High Volume Air Samplers (or equivalent) in accordance with the following methods:

- 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
- 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
August 8 through August 14, 2024
[Report Updated: September 24, 2024]

Screening Level		TWA Results 150 ($\mu g/m^3$)
8/8/2024	Leialii Hawaiian Homelands (AM-01)	8.9
	WW Pump Station #4 (AM-02)	4.6
	Lahaina Intermediate School (AM-03)	6.4
	Lahaina Boys & Girls Club (AM-04)	14
8/9/2024	Leialii Hawaiian Homelands (AM-01)	6.3
	WW Pump Station #4 (AM-02)	5.1
	Lahaina Intermediate School (AM-03)	7.8
	Lahaina Boys & Girls Club (AM-04)	17
8/10/2024	Leialii Hawaiian Homelands (AM-01)	6.6
	WW Pump Station #4 (AM-02)	6.4
	Lahaina Intermediate School (AM-03)	7.6
	Lahaina Boys & Girls Club (AM-04)	15
8/11/2024	Leialii Hawaiian Homelands (AM-01)	16
	WW Pump Station #4 (AM-02)	7.3
	Lahaina Intermediate School (AM-03)	12
	Lahaina Boys & Girls Club (AM-04)	9.7
8/12/2024	Leialii Hawaiian Homelands (AM-01)	16
	WW Pump Station #4 (AM-02)	6.5
	Lahaina Intermediate School (AM-03)	7.5
	Lahaina Boys & Girls Club (AM-04)	14
8/13/2024	Leialii Hawaiian Homelands (AM-01)	13
	WW Pump Station #4 (AM-02)	7.0
	Lahaina Intermediate School (AM-03)	14
	Lahaina Boys & Girls Club (AM-04)	32
8/14/2024	Leialii Hawaiian Homelands (AM-01)	8.6
	WW Pump Station #4 (AM-02)	7.1
	Lahaina Intermediate School (AM-03)	9.8
	Lahaina Boys & Girls Club (AM-04)	15

Notes:
$\mu g/m^3$ = micrograms per cubic meter
TWA = 24 Hour Time-Weighted Average
TWA calculation results are shown in two significant figures

Table 2
State of Hawaii, Department of Health, Clean Air Branch
Asbestos and Metals Sampling Results
Maui Wildfires, Lahaina
August 8 through August 14, 2024
[Report Updated: September 24, 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
8/8/2024	Leialii Hawaiian Homelands (AM-01)	<0.0024	0.0000431	0.00301	0.00715	0.0000301	ND	0.00734	0.00149	0.259	0.000304	0.0344	0.0117	0.00328	0.000225	0.00000188	0.00443	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.000168	0.000309	0.00436	0.0000127	ND	0.00218	0.000360	0.0438	0.000635	0.0121	0.00212	0.000977	0.000162	0.000000940	0.00127	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000465	0.000158	0.00295	0.0000246	ND	0.00254	0.000439	0.0485	0.000537	0.0117	0.00215	0.00115	0.000150	0.000000897	0.00119	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0024	0.0000686	0.000229	0.00258	0.0000102	ND	0.00224	0.000322	0.0338	0.000392	0.0106	0.00181	0.000929	0.000131	0.000000748	0.000965	ND
8/9/2024	Leialii Hawaiian Homelands (AM-01)	<0.0024	0.0000837	0.00164	0.00838	0.0000367	ND	0.00704	0.00149	0.215	0.000533	0.0368	0.0100	0.00337	0.000230	0.00000168	0.00455	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.000191	0.000368	0.00506	0.0000136	ND	0.00252	0.000447	0.0445	0.000849	0.0129	0.00216	0.00123	0.000148	0.000000798	0.00152	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000650	0.000140	0.00291	0.0000209	ND	0.00222	0.000358	0.0394	0.000278	0.00914	0.00191	0.00117	0.000111	0.000000675	0.00103	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0024	0.000111	0.000399	0.00356	0.00000940	ND	0.00228	0.000341	0.0439	0.000689	0.0107	0.00202	0.00114	0.000119	0.000000654	0.00103	ND
8/10/2024	Leialii Hawaiian Homelands (AM-01)	<0.0024	0.0000465	0.000591	0.00305	0.0000107	ND	0.00305	0.000413	0.172	0.000238	0.0110	0.0102	0.00132	0.000137	0.00000101	0.00138	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.000107	0.000272	0.00383	0.0000108	ND	0.00251	0.000297	0.0620	0.000687	0.00968	0.00357	0.000905	0.000161	0.000000960	0.00104	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000369	0.000156	0.00259	0.0000235	ND	0.00260	0.000363	0.0538	0.000261	0.00939	0.00405	0.000973	0.000142	0.000000978	0.00102	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0024	0.000101	0.000358	0.00338	0.00000955	ND	0.00283	0.000344	0.0367	0.000696	0.0115	0.00237	0.00112	0.000160	0.000000944	0.000879	ND
8/11/2024	Leialii Hawaiian Homelands (AM-01)	<0.0024	0.0000340	0.000315	0.00233	0.00000630	ND	0.00226	0.000243	0.211	0.000237	0.00630	0.0141	0.000798	0.000173	0.00000137	0.000872	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.000138	0.000312	0.00385	0.0000108	ND	0.00258	0.000288	0.0507	0.000928	0.00898	0.00421	0.00114	0.000229	0.00000173	0.00120	ND
	Lahaina Intermediate School (AM-03)	<0.0024	ND	0.000118	0.00219	0.0000132	ND	0.00213	0.000254	0.0441	0.000315	0.00649	0.00397	0.000828	0.000149	0.00000117	0.000793	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0024	0.000119	0.000238	0.00312	0.00000677	ND	ND	0.000214	0.0309	0.000593	0.00716	0.00219	0.00105	0.000203	0.00000145	0.000970	ND
8/12/2024	Leialii Hawaiian Homelands (AM-01)	<0.0024	0.0000759	0.00203	0.0190	0.0000790	ND	0.00757	0.001800	0.316	0.000930	0.0638	0.0214	0.00354	0.000431	0.00000535	0.00752	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.000101	0.000355	0.00331	0.00000779	ND	ND	0.000203	0.0438	0.000554	0.00677	0.00427	0.000895	0.000212	0.00000135	0.00108	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000746	0.000155	0.00345	0.0000187	ND	0.00213	0.000334	0.0687	0.000657	0.00866	0.00504	0.00209	0.000180	0.00000127	0.00113	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0024	0.0000965	0.000183	0.00282	0.00000589	ND	ND	0.000177	0.0307	0.000442	0.00598	0.00178	0.000983	0.000148	0.00000103	0.000786	ND
8/13/2024	Leialii Hawaiian Homelands (AM-01)	<0.0024	0.000118	0.00284	0.0220	0.0000452	ND	0.00920	0.00194	0.170	0.000627	0.0474	0.0130	0.00497	0.000333	0.00000332	0.00596	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.000149	0.000589	0.00823	0.0000306	0.0000875	0.00507	0.00116	0.0404	0.00111	0.0286	0.00251	0.00323	0.000287	0.0000027	0.00363	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000657	0.000213	0.00370	0.0000278	ND	0.00304	0.000526	0.0505	0.000318	0.0132	0.00378	0.00181	0.000204	0.00000179	0.00150	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0024	0.000142	0.000460	0.00458	0.0000137	ND	0.00540	0.000530	0.0414	0.000644	0.0154	0.00239	0.00311	0.000210	0.00000197	0.00142	ND
8/14/2024	Leialii Hawaiian Homelands (AM-01)	<0.0024	0.0000878	0.00210	0.0117	0.0000528	0.0000969	0.00993	0.00235	0.189	0.000778	0.0546	0.0123	0.00528	0.000372	0.00000331	0.00678	ND
	WW Pump Station #4 (AM-02)	<0.0024																
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000590	0.000210	0.00332	0.0000313	ND	0.00290	0.000501	0.0377	0.000549	0.0120	0.00306	0.00133	0.000185	0.00000159	0.00140	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0024	0.0000780	0.000397	0.00292	0.0000132	ND	0.00273	0.000419	0.0364	0.000470	0.0121	0.00228	0.00124	0.000167	0.00000161	0.00116	ND
95% Upper Confidence Limit[2]		NA	0.000110	0.000970	0.00659	0.0000280	NA	0.00479	0.000860	0.118	0.000670	0.0226	0.00750	0.00229	0.000220	0.00000190	0.00266	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

HM Sample voided due to equipment motor malfunction

Table 3
State of Hawaii, Department of Health, Clean Air Branch
Meteorological Data
Maui Wildfires, Lahaina
August 8 through August 14, 2024
[Report Updated: September 24, 2024]

Date	Station ID	Weather Station Name	Wind Speed (mph)	Wind Direction (angle)	Temperature (°F)	Rel Humidity (%)	Baro Pressure (mBar)
8/8/2024	AM-01	Leialii Hawaiian Homelands	1.2	ESE	85	59	759.9
8/8/2024	AM-02	WW Pump Station #4	1.1	SE	84	65	762.0
8/8/2024	AM-03	Lahaina Intermediate School	1.1	ESE	80	64	752.5
8/8/2024	AM-04	Lahaina Boys & Girls Club	1.2	SSW	78	67	761.5
8/9/2024	AM-01	Leialii Hawaiian Homelands	1.2	ESE	86	56	759.2
8/9/2024	AM-02	WW Pump Station #4	1.1	SSE	84	63	761.2
8/9/2024	AM-03	Lahaina Intermediate School	1.2	ESE	80	61	751.7
8/9/2024	AM-04	Lahaina Boys & Girls Club	1.3	SSW	79	64	760.7
8/10/2024	AM-01	Leialii Hawaiian Homelands	1.2	SE	87	57	760.2
8/10/2024	AM-02	WW Pump Station #4	1.1	SSE	84	65	762.3
8/10/2024	AM-03	Lahaina Intermediate School	1.1	ESE	81	62	752.8
8/10/2024	AM-04	Lahaina Boys & Girls Club	1.3	SSW	79	66	761.8
8/11/2024	AM-01	Leialii Hawaiian Homelands	1.0	SE	88	59	761.4
8/11/2024	AM-02	WW Pump Station #4	1.1	S	84	68	763.5
8/11/2024	AM-03	Lahaina Intermediate School	1.1	ESE	81	65	754.0
8/11/2024	AM-04	Lahaina Boys & Girls Club	1.3	SSW	80	69	763.0
8/12/2024	AM-01	Leialii Hawaiian Homelands	1.4	SE	87	58	761.6
8/12/2024	AM-02	WW Pump Station #4	1.2	SSE	83	65	763.7
8/12/2024	AM-03	Lahaina Intermediate School	1.2	SE	82	62	754.3
8/12/2024	AM-04	Lahaina Boys & Girls Club	1.4	SSW	81	66	763.3
8/13/2024	AM-01	Leialii Hawaiian Homelands	1.3	ESE	86	55	760.8
8/13/2024	AM-02	WW Pump Station #4	1.0	SE	82	62	763.0
8/13/2024	AM-03	Lahaina Intermediate School	1.2	ESE	82	60	753.6
8/13/2024	AM-04	Lahaina Boys & Girls Club	1.2	S	82	63	762.6
8/14/2024	AM-01	Leialii Hawaiian Homelands	1.4	ESE	86	54	760.6
8/14/2024	AM-02	WW Pump Station #4	1.1	SE	81	59	762.8
8/14/2024	AM-03	Lahaina Intermediate School	1.2	ESE	81	58	753.4
8/14/2024	AM-04	Lahaina Boys & Girls Club	1.3	S	80	61	762.4

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:	042416969
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:	08/14/2024 12:00 PM
Analysis Date:	08/19/2024
Report Date:	08/21/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM01-080824-AB** **Sample Description:** **DL274923**

EMSL Sample Number:	042416969-0001		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7186.7
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):	0.0130
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	5			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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: 042416969
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: 042416969-0001 **Customer Sample:** MFL-AM01-080824-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	A3	None Detected									
B2	D6	None Detected									
B2	I4	None Detected									
B3	I3	None Detected									
B3	A5	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:	042416969
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Fires - Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	08/14/2024 12:00 PM
Analysis Date:	08/19/2024
Report Date:	08/21/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM02-080824-AB** **Sample Description:** **DL274883**

EMSL Sample Number:	042416969-0002		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7157.6
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0130
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	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**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**

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

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

Comment

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EMSL Order ID: 042416969
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: 042416969-0002 **Customer Sample:** MFL-AM02-080824-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	B6	None Detected									
B5	G5	None Detected									
B5	I3	None Detected									
B6	C6	None Detected									
B6	F7	None Detected									

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

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EMSL Order:	042416969
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

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Received Date:	08/14/2024 12:00 PM
Analysis Date:	08/19/2024
Report Date:	08/21/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-080824-AB**	**Sample Description:**	**DL274951**
EMSL Sample Number:	042416969-0003	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L) :	7198.6
Aspect ratio for fiber definition:	3:1	Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5	Grid Opening Area (mm^2):	0.0130
Chi^2 Test for Random Distribution on Filter:	N/A *(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD	Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX		
Estimated Particulate Loading on Filter %:	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**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**

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

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

Comment

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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: 042416969-0003 **Customer Sample:** MFL-AM03-080824-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	A5	None Detected									
C2	E4	None Detected									
C2	J1	None Detected									
C3	C4	None Detected									
C3	H8	None Detected									

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

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Customer PO:	1207085
Project ID:	N/A

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Received Date:	08/14/2024 12:00 PM
Analysis Date:	08/19/2024
Report Date:	08/21/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM04-080824-AB** **Sample Description:** **DL274847**

EMSL Sample Number:	042416969-0004		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7194.8
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0130
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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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: 042416969-0004 **Customer Sample:** MFL-AM04-080824-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	I2	None Detected									
C5	F1	None Detected									
C5	C4	None Detected									
C6	C8	None Detected									
C6	H5	None Detected									

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

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

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Received Date:	08/14/2024 12:00 PM
Analysis Date:	08/19/2024
Report Date:	08/21/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-080824-AB** **Sample Description:** **DL274849**

EMSL Sample Number:	042416969-0005		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):	0.0130
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**N/A**		**Limit of Detection (Structures/cc):**	**N/A**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected 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**	**< 23.00**			
Total Amphibole	**ADX**	**0**	**0**	**< 23.00**			
Actinolite	ADX	0	0	< 23.00			
Amosite	ADX	0	0	< 23.00			
Anthophyllite	ADX	0	0	< 23.00			
Crocidolite	ADX	0	0	< 23.00			
Tremolite	ADX	0	0	< 23.00			
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.00**			
Other Minerals	-	0	0	< 23.00			
Total All Structures	**-**	**0**	**0**	**< 23.00**			

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

	Minimum ID Level	Fibers Detected 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**	**< 23.00**			
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.00**			
Actinolite	ADX	0	0	< 23.00			
Amosite	ADX	0	0	< 23.00			
Anthophyllite	ADX	0	0	< 23.00			
Crocidolite	ADX	0	0	< 23.00			
Tremolite	ADX	0	0	< 23.00			
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.00**			
Other Minerals	-	0	0	< 23.00			
Total All Structures (PCMe)	**-**	**0**	**0**	**< 23.00**			

Comment

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EMSL Order ID: 042416969
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: 042416969-0005 **Customer Sample:** MFL-FB01-080824-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	J8	None Detected									
D2	H6	None Detected									
D2	F7	None Detected									
D2	D9	None Detected									
D2	B7	None Detected									
D3	J6	None Detected									
D3	H4	None Detected									
D3	F2	None Detected									
D3	D4	None Detected									
D3	B7	None Detected									

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

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EMSL Order:	042416969
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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Received Date:	08/14/2024 12:00 PM
Analysis Date:	08/19/2024
Report Date:	08/21/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM01-080924-AB**	**Sample Description:**	**DL275037**
EMSL Sample Number:	042416969-0006	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L) :	7198.7
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):	0.0130
Chi^2 Test for Random Distribution on Filter:	N/A *(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD	Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX		
Estimated Particulate Loading on Filter %:	5		
Target Analytical Sensitivity (Structures/cc):	0.001		
Analytical Sensitivity (Structures/cc):	**0.0008**	**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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

EMSL Order ID: 042416969
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: 042416969-0006 **Customer Sample:** MFL-AM01-080924-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	I5	None Detected									
D5	E10	None Detected									
D5	B7	None Detected									
D6	B4	None Detected									
D6	G8	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:	042416969
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:	08/14/2024 12:00 PM
Analysis Date:	08/19/2024
Report Date:	08/21/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-080924-AB**		**Sample Description:**	**DL274858**
EMSL Sample Number:	042416969-0007		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7323.4
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0130
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	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**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**

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

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

Comment

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EMSL Order ID: 042416969
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: 042416969-0007 **Customer Sample:** MFL-AM02-080924-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	I3	None Detected									
E2	F3	None Detected									
E2	A4	None Detected									
E3	G5	None Detected									
E3	B1	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:	042416969
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

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Received Date:	08/14/2024 12:00 PM
Analysis Date:	08/19/2024
Report Date:	08/21/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM03-080924-AB** **Sample Description:** **DL274876**

EMSL Sample Number:	042416969-0008		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7203.7
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):	0.0130
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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EMSL Order ID: 042416969
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: 042416969-0008 **Customer Sample:** MFL-AM03-080924-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	I3	None Detected									
E5	F1	None Detected									
E5	B2	None Detected									
E6	B10	None Detected									
E6	G7	None Detected									

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

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EMSL Order:	042416969
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Fires - Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	08/14/2024 12:00 PM
Analysis Date:	08/19/2024
Report Date:	08/21/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM04-080924-AB** **Sample Description:** **DL274844**

EMSL Sample Number:	042416969-0009		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7182.1
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):	0.0130
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	5			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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EMSL Order ID: 042416969
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: 042416969-0009 **Customer Sample:** MFL-AM04-080924-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	J4	None Detected									
F2	G7	None Detected									
F2	C8	None Detected									
F3	G9	None Detected									
F3	A6	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:	042416969
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

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Received Date:	08/14/2024 12:00 PM
Analysis Date:	08/19/2024
Report Date:	08/21/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-080924-AB** **Sample Description:** **DL274992**

EMSL Sample Number:	042416969-0010		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):	0.0130
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**N/A**		**Limit of Detection (Structures/cc):**	**N/A**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected 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**	**< 23.00**			
Total Amphibole	**ADX**	**0**	**0**	**< 23.00**			
Actinolite	ADX	0	0	< 23.00			
Amosite	ADX	0	0	< 23.00			
Anthophyllite	ADX	0	0	< 23.00			
Crocidolite	ADX	0	0	< 23.00			
Tremolite	ADX	0	0	< 23.00			
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.00**			
Other Minerals	-	0	0	< 23.00			
Total All Structures	**-**	**0**	**0**	**< 23.00**			

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

	Minimum ID Level	Fibers Detected 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**	**< 23.00**			
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.00**			
Actinolite	ADX	0	0	< 23.00			
Amosite	ADX	0	0	< 23.00			
Anthophyllite	ADX	0	0	< 23.00			
Crocidolite	ADX	0	0	< 23.00			
Tremolite	ADX	0	0	< 23.00			
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.00**			
Other Minerals	-	0	0	< 23.00			
Total All Structures (PCMe)	**-**	**0**	**0**	**< 23.00**			

Comment

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EMSL Order ID: 042416969
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: 042416969-0010 **Customer Sample:** MFL-FB01-080924-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	J8	None Detected									
F5	H7	None Detected									
F5	F10	None Detected									
F5	D7	None Detected									
F5	B4	None Detected									
F6	J7	None Detected									
F6	H8	None Detected									
F6	F2	None Detected									
F6	C5	None Detected									
F6	A6	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:	042416969
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

Attn: **Chelsea Saber**
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Received Date:	08/14/2024 12:00 PM
Analysis Date:	08/19/2024
Report Date:	08/21/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM01-081024-AB** **Sample Description:** **DL275071**

EMSL Sample Number:	042416969-0011		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7149.5
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0130
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	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**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**

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

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

Comment

Robyn Ray
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EMSL Order ID: 042416969
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: 042416969-0011 **Customer Sample:** MFL-AM01-081024-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	I6	None Detected									
G2	G3	None Detected									
G2	D4	None Detected									
G3	D5	None Detected									
G3	F4	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:	042416969
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:	08/14/2024 12:00 PM
Analysis Date:	08/19/2024
Report Date:	08/21/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM02-081024-AB** **Sample Description:** **DL275128**

EMSL Sample Number:	042416969-0012		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7061.8
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0130
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	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**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**

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

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

Comment

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EMSL Order ID: 042416969
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: 042416969-0012 **Customer Sample:** MFL-AM02-081024-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	A9	None Detected									
G5	D5	None Detected									
G5	G10	None Detected									
G6	I4	None Detected									
G6	D3	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:	042416969
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Phone:	(703) 489-2674
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Received Date:	08/14/2024 12:00 PM
Analysis Date:	08/19/2024
Report Date:	08/21/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM03-081024-AB** **Sample Description:** **DL274838**

EMSL Sample Number:	042416969-0013		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7156.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0130
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	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**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**

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

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

Comment

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EMSL Order ID: 042416969
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: 042416969-0013 **Customer Sample:** MFL-AM03-081024-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	B9	None Detected									
H2	D5	None Detected									
H2	I8	None Detected									
H3	I3	None Detected									
H3	B5	None Detected									

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

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Customer PO:	1207085
Project ID:	N/A

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

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Fax:	N/A
Received Date:	08/14/2024 12:00 PM
Analysis Date:	08/19/2024
Report Date:	08/21/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM04-081024-AB** **Sample Description:** **DL275057**

EMSL Sample Number:	042416969-0014		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7127.4
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0130
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	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**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**

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

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

Comment

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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: 042416969-0014 **Customer Sample:** MFL-AM04-081024-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					
H7	H7	None Detected									
H7	F9	None Detected									
H7	D7	None Detected									
H8	D3	None Detected									
H8	I4	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:	042416969
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

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Fax:	N/A
Received Date:	08/14/2024 12:00 PM
Analysis Date:	08/19/2024
Report Date:	08/21/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-081024-AB** **Sample Description:** **DL274875**

EMSL Sample Number:	042416969-0015		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):	0.0130
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**N/A**		**Limit of Detection (Structures/cc):**	**N/A**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected 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**	**< 23.00**			
Total Amphibole	**ADX**	**0**	**0**	**< 23.00**			
Actinolite	ADX	0	0	< 23.00			
Amosite	ADX	0	0	< 23.00			
Anthophyllite	ADX	0	0	< 23.00			
Crocidolite	ADX	0	0	< 23.00			
Tremolite	ADX	0	0	< 23.00			
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.00**			
Other Minerals	-	0	0	< 23.00			
Total All Structures	**-**	**0**	**0**	**< 23.00**			

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

	Minimum ID Level	Fibers Detected 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**	**< 23.00**			
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.00**			
Actinolite	ADX	0	0	< 23.00			
Amosite	ADX	0	0	< 23.00			
Anthophyllite	ADX	0	0	< 23.00			
Crocidolite	ADX	0	0	< 23.00			
Tremolite	ADX	0	0	< 23.00			
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.00**			
Other Minerals	-	0	0	< 23.00			
Total All Structures (PCMe)	**-**	**0**	**0**	**< 23.00**			

Comment

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EMSL Order ID: 042416969
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: 042416969-0015 **Customer Sample:** MFL-FB01-081024-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
I2	A7	None Detected									
I2	C9	None Detected									
I2	E7	None Detected									
I2	G10	None Detected									
I2	I6	None Detected									
I3	J4	None Detected									
I3	H3	None Detected									
I3	F1	None Detected									
I3	D4	None Detected									
I3	B6	None Detected									

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

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EMSL Order:	042416969
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

Attn: **Chelsea Saber**
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Received Date:	08/14/2024 12:00 PM
Analysis Date:	08/19/2024
Report Date:	08/21/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM01-081124-AB**	**Sample Description:**	**DL275105**
EMSL Sample Number:	042416969-0016	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L) :	7184.6
Aspect ratio for fiber definition:	3:1	Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5	Grid Opening Area (mm^2):	0.0130
Chi^2 Test for Random Distribution on Filter:	N/A *(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD	Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX		
Estimated Particulate Loading on Filter %:	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**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**

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

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

Comment

Robyn Ray
Approved Signatory

EMSL Analytical, Inc.
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EMSL Order ID: 042416969
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: 042416969-0016 **Customer Sample:** MFL-AM01-081124-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	I3	None Detected									
I5	G1	None Detected									
I5	C3	None Detected									
I6	D5	None Detected									
I6	I4	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:	042416969
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:	08/14/2024 12:00 PM
Analysis Date:	08/19/2024
Report Date:	08/21/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM02-081124-AB** **Sample Description: DL275099**

EMSL Sample Number:	042416969-0017		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7208.4
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0130
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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EMSL Order ID: 042416969
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: 042416969-0017 **Customer Sample:** MFL-AM02-081124-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	D6	None Detected									
J3	C9	None Detected									
J3	H9	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:	042416969
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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Project: **Maui Fires - Lahaina**

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Received Date:	08/14/2024 12:00 PM
Analysis Date:	08/19/2024
Report Date:	08/21/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM03-081124-AB** **Sample Description:** **DL274886**

EMSL Sample Number:	042416969-0018		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7225.5
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0130
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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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: 042416969-0018 **Customer Sample:** MFL-AM03-081124-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	C10	None Detected									
J5	G7	None Detected									
J5	J9	None Detected									
J6	C9	None Detected									
J6	I7	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:	042416969
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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Project: **Maui Fires - Lahaina**

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Fax:	N/A
Received Date:	08/14/2024 12:00 PM
Analysis Date:	08/19/2024
Report Date:	08/21/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM04-081124-AB** **Sample Description:** **DL275044**

EMSL Sample Number:	042416969-0019		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7178.6
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0130
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	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**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**

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

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

Comment

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EMSL Order ID: 042416969
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: 042416969-0019 **Customer Sample:** MFL-AM04-081124-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	A8	None Detected									
K2	F4	None Detected									
K2	I10	None Detected									
K3	I1	None Detected									
K3	F2	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:	042416969
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	08/14/2024 12:00 PM
Analysis Date:	08/19/2024
Report Date:	08/21/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-081124-AB** **Sample Description:** **DL274839**

EMSL Sample Number:	042416969-0020		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):	0.0130
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**N/A**		**Limit of Detection (Structures/cc):**	**N/A**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected 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**	**< 23.00**			
Total Amphibole	**ADX**	**0**	**0**	**< 23.00**			
Actinolite	ADX	0	0	< 23.00			
Amosite	ADX	0	0	< 23.00			
Anthophyllite	ADX	0	0	< 23.00			
Crocidolite	ADX	0	0	< 23.00			
Tremolite	ADX	0	0	< 23.00			
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.00**			
Other Minerals	-	0	0	< 23.00			
Total All Structures	**-**	**0**	**0**	**< 23.00**			

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

	Minimum ID Level	Fibers Detected 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**	**< 23.00**			
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.00**			
Actinolite	ADX	0	0	< 23.00			
Amosite	ADX	0	0	< 23.00			
Anthophyllite	ADX	0	0	< 23.00			
Crocidolite	ADX	0	0	< 23.00			
Tremolite	ADX	0	0	< 23.00			
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.00**			
Other Minerals	-	0	0	< 23.00			
Total All Structures (PCMe)	**-**	**0**	**0**	**< 23.00**			

Comment

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EMSL Order ID: 042416969
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: 042416969-0020 **Customer Sample:** MFL-FB01-081124-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	A10	None Detected									
K5	C9	None Detected									
K5	E7	None Detected									
K5	G9	None Detected									
K5	I10	None Detected									
K6	J5	None Detected									
K6	H3	None Detected									
K6	F4	None Detected									
K6	D3	None Detected									
K6	B5	None Detected									

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

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EMSL Order:	042416969
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	08/14/2024 12:00 PM
Analysis Date:	08/19/2024
Report Date:	08/21/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

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

EMSL Sample Number:	042416969-0021		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):	0.0130
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**N/A**		**Limit of Detection (Structures/cc):**	**N/A**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected 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**	**< 23.00**			
Total Amphibole	**ADX**	**0**	**0**	**< 23.00**			
Actinolite	ADX	0	0	< 23.00			
Amosite	ADX	0	0	< 23.00			
Anthophyllite	ADX	0	0	< 23.00			
Crocidolite	ADX	0	0	< 23.00			
Tremolite	ADX	0	0	< 23.00			
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.00**			
Other Minerals	-	0	0	< 23.00			
Total All Structures	**-**	**0**	**0**	**< 23.00**			

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

	Minimum ID Level	Fibers Detected 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**	**< 23.00**			
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.00**			
Actinolite	ADX	0	0	< 23.00			
Amosite	ADX	0	0	< 23.00			
Anthophyllite	ADX	0	0	< 23.00			
Crocidolite	ADX	0	0	< 23.00			
Tremolite	ADX	0	0	< 23.00			
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.00**			
Other Minerals	-	0	0	< 23.00			
Total All Structures (PCMe)	**-**	**0**	**0**	**< 23.00**			

Comment

Approved Signatory

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: 042416969
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: 042416969-0021 **Customer Sample:** Lab Blank

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
A1	J2	None Detected									
A1	H3	None Detected									
A1	F7	None Detected									
A1	D9	None Detected									
A1	B10	None Detected									
A2	J10	None Detected									
A2	H6	None Detected									
A2	F3	None Detected									
A2	D5	None Detected									
A2	B7	None Detected									

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

OrderID: 042416969

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

EMSL Order Number / Lab Use Only

#042416969

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

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

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: Shaina Epstein
Sampled By 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.

RECEIVED EMSL CINNAMINSON NJ 24 AUG 14 P 1:00

☐ 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-AM01-080824-AB	DL274923	7,186.749	08/08/24 1101
MFL-AM02-080824-AB	DL274883	7,157.579	08/08/24 1114
MFL-AM03-080824-AB	DL274951	7,198.598	08/08/24 1258
MFL-AM04-080824-AB	DL274847	7,194.816	08/08/24 1321
MFL-FB01-080824-AB	DL274849	0	08/08/24 1200
MFL-AM01-080924-AB	DL275037	7,198.668	08/09/24 1059
MFL-AM02-080924-AB	DL274858	7,323.391	08/09/24 1126
MFL-AM03-080924-AB	DL274876	7,203.681	08/09/24 1300

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

All samples received acceptable for analysis.

Method of Shipment: Fedex
Sample Condition Upon Receipt:

Relinquished by:	Date/Time:	Received by:	Date/Time
[signature]	08/12/24 1100	[signature] FX	8/14/24 12[illegible]
Relinquished by:	Date/Time:	Received by:	Date/Time

Controlled Document - COC-06 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.

Page 1 of 20 B

OrderID: 042416969

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL Order Number / Lab Use Only

#042416969

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-AM04-080924-AB	DL274844	7,182.144	08/09/24 1326
MFL-FB01-080924-AB	DL274992	0	08/09/24 1200
MFL-AM01-081024-AB	DL275071	7,149.506	08/10/24 1100
MFL-AM02-081024-AB	DL275128	7,061.782	08/10/24 1115
MFL-AM03-081024-AB	DL274838	7,156.002	08/10/24 1259
MFL-AM04-081024-AB	DL275057	7,127.380	08/10/24 1321
MFL-FB01-081024-AB	DL274875	0	08/10/24 1200
MFL-AM01-081124-AB	DL275105	7,184.595	08/11/24 1101
MFL-AM02-081124-AB	DL275099	7,208.433	08/11/24 1114
MFL-AM03-081124-AB	DL274886	7,225.512	08/11/24 1259
MFL-AM04-081124-AB	DL275044	7,178.612	08/11/24 1316
MFL-FB01-081124-AB	DL274839	0	08/11/24 1200

RECEIVED
EMSL
CINNAMINSON, NJ
24 AUG 14 PM 12:03

Method of Shipment: Fedex		Sample Condition Upon Receipt:	
Relinquished by: [signature]	Date/Time: 08/12/24 1100	Received by: [signature]	Date/Time 8/14/24
Relinquished by:	Date/Time:	Received by:	Date/Time

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

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

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

Page 2 of 2

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 08/26/2024 and Shanna Vasser 08/26/2024
Laboratory: EMSL Analytical, Inc. – North Cinnaminson, NJ
Collection date(s): 08/08/2024 – 08/11/2024
Report No: 42416969

√	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:	042417270
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:	08/19/2024 09:30 AM
Analysis Date:	08/20/2024
Report Date:	08/21/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM01-081224-AB**	**Sample Description:**	**DL274842**
EMSL Sample Number:	042417270-0001	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L) :	7231.5
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 %:	8		
Target Analytical Sensitivity (Structures/cc):	0.001		
Analytical Sensitivity (Structures/cc):	**0.0008**	**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 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: 042417270
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: 042417270-0001 **Customer Sample:** MFL-AM01-081224-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
A5	A4	None Detected									
A5	D9	None Detected									
A5	H10	None Detected									
A6	H3	None Detected									
A6	D1	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:	042417270
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:	08/19/2024 09:30 AM
Analysis Date:	08/20/2024
Report Date:	08/21/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-081224-AB**		**Sample Description:**	**DL275052**
EMSL Sample Number:	042417270-0002		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7125.1
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 %:	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: 042417270
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: 042417270-0002 **Customer Sample:** MFL-AM02-081224-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
B1	E9	None Detected									
B1	G6	None Detected									
B1	J8	None Detected									
B2	C9	None Detected									
B2	I10	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:	042417270
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:	08/19/2024 09:30 AM
Analysis Date:	08/20/2024
Report Date:	08/21/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-081224-AB**	**Sample Description:**	**DL274843**
EMSL Sample Number:	042417270-0003	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L) :	7199.4
Aspect ratio for fiber definition:	3:1	Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5	Grid Opening Area (mm^2):	0.0128
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
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EMSL Order ID: 042417270
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: 042417270-0003 **Customer Sample:** MFL-AM03-081224-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	I2	None Detected									
B5	F4	None Detected									
B5	D2	None Detected									
B6	F2	None Detected									
B6	C1	None Detected									

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

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

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Project: **Maui Fires - Lahaina**

Phone:	(703) 489-2674
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Received Date:	08/19/2024 09:30 AM
Analysis Date:	08/20/2024
Report Date:	08/21/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM04-081224-AB**	**Sample Description:**	**DL274863**
EMSL Sample Number:	042417270-0004	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L) :	7177.7
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

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Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042417270-0004 **Customer Sample:** MFL-AM04-081224-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
C1	C9	None Detected									
C1	E8	None Detected									
C1	F4	None Detected									
C2	B4	None Detected									
C2	H9	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:	042417270
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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Received Date:	08/19/2024 09:30 AM
Analysis Date:	08/20/2024
Report Date:	08/21/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-081224-AB** **Sample Description:** **DL274859**

EMSL Sample Number:	042417270-0005		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

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EMSL Order ID: 042417270
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: 042417270-0005 **Customer Sample:** MFL-FB01-081224-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	J1	None Detected									
C5	H2	None Detected									
C5	F1	None Detected									
C5	D3	None Detected									
C5	B4	None Detected									
C6	J2	None Detected									
C6	H4	None Detected									
C6	F7	None Detected									
C6	D10	None Detected									
C6	A8	None Detected									

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

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

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Analysis Date:	08/20/2024
Report Date:	08/21/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM01-081324-AB**	**Sample Description:**	**DL274865**
EMSL Sample Number:	042417270-0006	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L) :	7159.5
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

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EMSL Order ID: 042417270
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: 042417270-0006 **Customer Sample:** MFL-AM01-081324-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
D1	A6	None Detected									
D1	D8	None Detected									
D1	J9	None Detected									
D2	H2	None Detected									
D2	D10	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:	042417270
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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Analysis Date:	08/20/2024
Report Date:	08/21/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-081324-AB**		**Sample Description:**	**DL274845**
EMSL Sample Number:	042417270-0007		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7128.4
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
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

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Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042417270-0007 **Customer Sample:** MFL-AM02-081324-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	B6	None Detected									
D5	D5	None Detected									
D5	F3	None Detected									
D6	H5	None Detected									
D6	E1	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:	042417270
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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Received Date:	08/19/2024 09:30 AM
Analysis Date:	08/20/2024
Report Date:	08/21/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-081324-AB**	**Sample Description:**	**DL274884**
EMSL Sample Number:	042417270-0008	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L) :	7218.3
Aspect ratio for fiber definition:	3:1	Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5	Grid Opening Area (mm^2):	0.0128
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

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EMSL Order ID: 042417270
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: 042417270-0008 **Customer Sample:** MFL-AM03-081324-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
E1	H4	None Detected									
E1	E2	None Detected									
E1	B4	None Detected									
E2	B9	None Detected									
E2	I5	None Detected									

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

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

Attn: **Chelsea Saber**
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Received Date:	08/19/2024 09:30 AM
Analysis Date:	08/20/2024
Report Date:	08/21/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM04-081324-AB**		**Sample Description:**	**DL275043**
EMSL Sample Number:	042417270-0009		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7227.1
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

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Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042417270-0009 **Customer Sample:** MFL-AM04-081324-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	J8	None Detected									
E5	H5	None Detected									
E5	G9	None Detected									
E6	B5	None Detected									
E6	G6	None Detected									

Abbreviations used:
XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled
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Customer PO:	1207085
Project ID:	N/A

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Project: **Maui Fires - Lahaina**

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Analysis Date:	08/20/2024
Report Date:	08/21/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-081324-AB** **Sample Description:** **DL274848**

EMSL Sample Number:	042417270-0010		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

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EMSL Order ID: 042417270
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: 042417270-0010 **Customer Sample:** MFL-FB01-081324-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	J8	None Detected									
F2	H10	None Detected									
F2	F7	None Detected									
F2	D3	None Detected									
F2	B1	None Detected									
F3	J2	None Detected									
F3	H3	None Detected									
F3	F4	None Detected									
F3	D5	None Detected									
F3	B6	None Detected									

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

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Customer PO:	1207085
Project ID:	N/A

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Received Date:	08/19/2024 09:30 AM
Analysis Date:	08/20/2024
Report Date:	08/21/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM01-081424-AB** **Sample Description:** **DL275089**

EMSL Sample Number:	042417270-0011		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7148.6
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

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EMSL Order ID:	**042417270**
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: 042417270-0011 **Customer Sample:** MFL-AM01-081424-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	F7	None Detected									
F5	H6	None Detected									
F6	H3	None Detected									
F6	E1	None Detected									

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

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

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Analysis Date:	08/20/2024
Report Date:	08/21/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM02-081424-AB** **Sample Description:** **Dl274960**

EMSL Sample Number:	042417270-0012		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7244.3
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
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

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Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042417270-0012 **Customer Sample:** MFL-AM02-081424-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
G1	F3	None Detected									
G1	D5	None Detected									
G1	B4	None Detected									
G2	I5	None Detected									
G2	D7	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:	042417270
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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Received Date:	08/19/2024 09:30 AM
Analysis Date:	08/20/2024
Report Date:	08/21/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM03-081424-AB** **Sample Description:** **DL275080**

EMSL Sample Number:	042417270-0013		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7197.3
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
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: 042417270
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: 042417270-0013 **Customer Sample:** MFL-AM03-081424-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	J5	None Detected									
G5	G3	None Detected									
G5	D2	None Detected									
G6	C9	None Detected									
G6	E7	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:	042417270
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:	08/19/2024 09:30 AM
Analysis Date:	08/20/2024
Report Date:	08/21/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM04-081424-AB**		**Sample Description:**	**DL274980**
EMSL Sample Number:	042417270-0014		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7227.8
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 %:	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: 042417270
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: 042417270-0014 **Customer Sample:** MFL-AM04-081424-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
H1	C5	None Detected									
H1	E7	None Detected									
H1	G5	None Detected									
H2	B8	None Detected									
H2	H10	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:	042417270
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:	08/19/2024 09:30 AM
Analysis Date:	08/20/2024
Report Date:	08/21/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-FB01-081424-AB**		**Sample Description:**	**DL274854**
EMSL Sample Number:	042417270-0015		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

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: 042417270
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: 042417270-0015 **Customer Sample:** MFL-FB01-081424-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	A10	None Detected									
H5	C9	None Detected									
H5	E7	None Detected									
H5	G9	None Detected									
H5	I10	None Detected									
H6	J1	None Detected									
H6	H4	None Detected									
H6	F3	None Detected									
H6	D1	None Detected									
H6	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
http://www.EMSL.com / cinnasblab@EMSL.com

EMSL Order:	042417270
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:	08/19/2024 09:30 AM
Analysis Date:	08/20/2024
Report Date:	08/21/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**Lab Blank**		**Sample Description:**	**Lab Blank**
EMSL Sample Number:	042417270-0016		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):	0.0128
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: 042417270
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: 042417270-0016 **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					
A2	A2	None Detected									
A2	C3	None Detected									
A2	E2	None Detected									
A2	G3	None Detected									
A2	I2	None Detected									
A3	A2	None Detected									
A3	B6	None Detected									
A3	C3	None Detected									
A3	E7	None Detected									
A3	G5	None Detected									

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

OrderID: 042417270

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL Order Number / Lab Use Only

#042417270

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

RECEIVED EMSL CINNAMINSON, NJ 2024 AUG 19 A 10:55

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:
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: Shaina Epstein
Sampled By Signature:
No. of Samples in Shipment: 15

Turn-Around-Time (TAT)

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

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

Test Selection

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

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

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

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

Other Test (please specify)

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

Soil - Rock - Vermiculite (reporting limit)*
☐ PLM EPA 600/R-93/116 with milling prep (<0.25%)
☐ PLM EPA 600/R-93/116 with milling prep (<0.1%)
☐ TEM EPA 600/R-93/116 with milling prep (<0.1%)
☐ TEM Qualitative via Filtration Prep
☐ TEM Qualitative via Drop Mount Prep

*Please call with your project-specific requirements.

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

Sample Number	Sample Location / Description	Volume, Area or Homogeneous Area	Date / Time Sampled (Air Monitoring Only)
MFL-AM01-081224-AB	DL274842	7,231.536	08/12/24 1103
MFL-AM02-081224-AB	DL275052	7,125.120	08/12/24 1118
MFL-AM03-081224-AB	DL274843	7,199.424	08/12/24 1302
MFL-AM04-081224-AB	DL274863	7,177.680	08/12/24 1320
MFL-FB01-081224-AB	DL274859	0	08/12/24 1200
MFL-AM01-081324-AB	DL274865	7,159.544	08/13/24 1055
MFL-AM02-081324-AB	DL274845	7,128.407	08/13/24 1112
MFL-AM03-081324-AB	DL274884	7,218.326	08/13/24 1259

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

All samples received acceptable for analysis.

Method of Shipment: Fedex
Relinquished by: Shaina Epstein Date/Time: 08/15/24 1100
Relinquished by: Date/Time:
Sample Condition Upon Receipt:
Received by: FX Date/Time: 8/15/24 933
Received by: Date/Time:

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

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

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

OrderID: 042417270

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL Order Number / Lab Use Only

#042417270

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-AM04-081324-AB	DL275043	7,227.101	08/13/24 1320
MFL-FB01-081324-AB	DL274848	0	08/13/24 1200
MFL-AM01-081424-AB	DL275089	7,148.592	08/14/24 1058
MFL-AM02-081424-AB	DL274960	7,244.261	08/14/24 1122
MFL-AM03-081424-AB	DL275080	7,197.264	08/14/24 1302
MFL-AM04-081424-AB	DL274980	7,227.792	08/14/24 1322
MFL-FB01-081424-AB	DL274854	0	08/14/24 1200

RECEIVED
EMSL
CINNAMINSON, NJ
2024 AUG 19 A 10:55

Method of Shipment: FedEx		Sample Condition Upon Receipt:	
Relinquished by: Shaina Epstein	Date/Time: 08/15/24 1100	Received by: FK	Date/Time: 8/19/24 930
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.

Page of

Stage 1 Data Verification Checklist – Asbestos

HDOH CAB – Ambient Community Air Sampling – Lahaina

Task Order No. 23141

Reviewed by:
Kierra Johnson 08/26/2024 and Shanna Vasser 08/27/2024
Laboratory: EMSL Analytical, Inc. – North Cinnaminson, NJ
Collection date(s): 08/12/2024 – 08/14/2024
Report No: 42417270

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

Discrepancies: None.

Notes: None.

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

August 28, 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 08/19/24 10:39.

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: 08/28/24 14:58
SUBMITTED: 08/19/24
AQS SITE CODE:
SITE CODE: Lahaina fires

ANALYTICAL REPORT FOR SAMPLES

SampleName	LabNumber	Matrix	Sampled	Received
MFL-AM01-080824-HM	4082761-01	Air	08/08/24 23:59	08/19/24 10:39
MFL-AM02-080824-HM	4082761-02	Air	08/08/24 23:59	08/19/24 10:39
MFL-AM03-080824-HM	4082761-03	Air	08/08/24 23:59	08/19/24 10:39
MFL-AM04-080824-HM	4082761-04	Air	08/08/24 23:59	08/19/24 10:39
MFL-AM01-080924-HM	4082761-05	Air	08/09/24 23:59	08/19/24 10:39
MFL-AM02-080924-HM	4082761-06	Air	08/09/24 23:59	08/19/24 10:39
MFL-AM03-080924-HM	4082761-07	Air	08/09/24 23:59	08/19/24 10:39
MFL-AM04-080924-HM	4082761-08	Air	08/09/24 23:59	08/19/24 10:39
MFL-FB01-080924-HM	4082761-09	Air	08/09/24 00:00	08/19/24 10:39
MFL-LB01-080924-HM	4082761-10	Air	08/09/24 00:00	08/19/24 10:39
MFL-AM01-081024-HM	4082761-11	Air	08/10/24 23:59	08/19/24 10:39
MFL-AM02-081024-HM	4082761-12	Air	08/10/24 23:59	08/19/24 10:39
MFL-AM03-081024-HM	4082761-13	Air	08/10/24 23:59	08/19/24 10:39
MFL-AM04-081024-HM	4082761-14	Air	08/10/24 23:59	08/19/24 10:39
MFL-AM01-081124-HM	4082761-15	Air	08/11/24 23:59	08/19/24 10:39
MFL-AM02-081124-HM	4082761-16	Air	08/11/24 23:59	08/19/24 10:39
MFL-AM03-081124-HM	4082761-17	Air	08/11/24 23:59	08/19/24 10:39
MFL-AM04-081124-HM	4082761-18	Air	08/11/24 23:59	08/19/24 10:39
MFL-FB01-081124-HM	4082761-19	Air	08/11/24 00:00	08/19/24 10:39
MFL-AM01-081224-HM	4082761-20	Air	08/12/24 23:59	08/19/24 10:39
MFL-AM02-081224-HM	4082761-21	Air	08/12/24 23:59	08/19/24 10:39

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: 08/28/24 14:58
SUBMITTED: 08/19/24
AQS SITE CODE:
SITE CODE: Lahaina fires

MFL-AM03-081224-HM	4082761-22	Air	08/12/24 23:59	08/19/24 10:39
MFL-AM04-081224-HM	4082761-23	Air	08/12/24 23:59	08/19/24 10:39
MFL-AM01-081324-HM	4082761-24	Air	08/13/24 23:59	08/19/24 10:39
MFL-AM02-081324-HM	4082761-25	Air	08/13/24 23:59	08/19/24 10:39
MFL-AM03-081324-HM	4082761-26	Air	08/13/24 23:59	08/19/24 10:39
MFL-AM04-081324-HM	4082761-27	Air	08/13/24 23:59	08/19/24 10:39
MFL-FB01-081324-HM	4082761-28	Air	08/13/24 00:00	08/19/24 10:39
MFL-AM01-081424-HM	4082761-29	Air	08/14/24 23:59	08/19/24 10:39
MFL-AM03-081424-HM	4082761-31	Air	08/14/24 23:59	08/19/24 10:39
MFL-AM04-081424-HM	4082761-32	Air	08/14/24 23:59	08/19/24 10:39
MFL-LB01-081424-HM	4082761-33	Air	08/14/24 00:00	08/19/24 10:39

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: 08/28/24 14:58
SUBMITTED: 08/19/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-080824-HM
Matrix: Air
Lab ID: 4082761-01
Sample Volume: 1964.549 m³
Filter ID:
Sampled: 08/08/24 23:59
Received: 08/19/24 10:39
Analysis Date: 08/22/24 04:13

Comments: Q9547481 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0431**	SL	**0.0320**
Arsenic	**7440-38-2**	**3.01**		**0.00776**
Barium	**7440-39-3**	**7.15**		**0.886**
Beryllium	**7440-41-7**	**0.0301**		**0.00265**
Cadmium	7440-43-9	0.0152	U	0.0614
Chromium	**7440-47-3**	**7.34**		**1.83**
Cobalt	**7440-48-4**	**1.49**		**0.0361**
Copper	**7440-50-8**	**259**		**2.18**
Lead	**7439-92-1**	**0.304**		**0.177**
Manganese	**7439-96-5**	**34.4**		**1.57**
Molybdenum	**7439-98-7**	**11.7**		**0.297**
Nickel	**7440-02-0**	**3.28**		**0.540**
Selenium	**7782-49-2**	**0.225**		**0.00742**
Thallium	**7440-28-0**	**0.00188**		**4.88E-4**
Vanadium	**7440-62-2**	**4.43**		**0.0438**
Zinc	7440-66-6	10.0	U	63.6

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/28/24 14:58
SUBMITTED: 08/19/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-080824-HM
Matrix: Air
Lab ID: 4082761-02
Sample Volume: 2006.416 m³
Filter ID:
Sampled: 08/08/24 23:59
Received: 08/19/24 10:39
Analysis Date: 08/22/24 04:32

Comments: Q9547478 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.168**	SL	**0.0313**
Arsenic	**7440-38-2**	**0.309**		**0.00760**
Barium	**7440-39-3**	**4.36**		**0.868**
Beryllium	**7440-41-7**	**0.0127**		**0.00259**
Cadmium	7440-43-9	0.0111	U	0.0601
Chromium	**7440-47-3**	**2.18**		**1.79**
Cobalt	**7440-48-4**	**0.360**		**0.0354**
Copper	**7440-50-8**	**43.8**		**2.13**
Lead	**7439-92-1**	**0.635**		**0.174**
Manganese	**7439-96-5**	**12.1**		**1.53**
Molybdenum	**7439-98-7**	**2.12**		**0.291**
Nickel	**7440-02-0**	**0.977**		**0.529**
Selenium	**7782-49-2**	**0.162**		**0.00727**
Thallium	**7440-28-0**	**9.40E-4**		**4.78E-4**
Vanadium	**7440-62-2**	**1.27**		**0.0429**
Zinc	7440-66-6	11.8	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: 08/28/24 14:58
SUBMITTED: 08/19/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-080824-HM
Matrix: Air
Lab ID: 4082761-03
Sample Volume: 1987.846 m³
Filter ID:
Sampled: 08/08/24 23:59
Received: 08/19/24 10:39
Analysis Date: 08/22/24 01:27

Comments: Q9547476 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0465**	SL	**0.0316**
Arsenic	**7440-38-2**	**0.158**		**0.00767**
Barium	**7440-39-3**	**2.95**		**0.876**
Beryllium	**7440-41-7**	**0.0246**		**0.00262**
Cadmium	7440-43-9	0.00825	U	0.0606
Chromium	**7440-47-3**	**2.54**		**1.81**
Cobalt	**7440-48-4**	**0.439**		**0.0357**
Copper	**7440-50-8**	**48.5**	QM-07	**2.15**
Lead	**7439-92-1**	**0.537**		**0.175**
Manganese	**7439-96-5**	**11.7**		**1.55**
Molybdenum	**7439-98-7**	**2.15**	QM-07	**0.294**
Nickel	**7440-02-0**	**1.15**		**0.534**
Selenium	**7782-49-2**	**0.150**		**0.00733**
Thallium	**7440-28-0**	**8.97E-4**		**4.82E-4**
Vanadium	**7440-62-2**	**1.19**		**0.0433**
Zinc	7440-66-6	11.5	U	62.9

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/28/24 14:58
SUBMITTED: 08/19/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-080824-HM
Matrix: Air
Lab ID: 4082761-04
Sample Volume: 1831.907 m³
Filter ID:
Sampled: 08/08/24 23:59
Received: 08/19/24 10:39
Analysis Date: 08/22/24 04:47

Comments: Q9547475 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0686**	SL	**0.0343**
Arsenic	**7440-38-2**	**0.229**		**0.00832**
Barium	**7440-39-3**	**2.58**		**0.950**
Beryllium	**7440-41-7**	**0.0102**		**0.00284**
Cadmium	7440-43-9	0.0127	U	0.0658
Chromium	**7440-47-3**	**2.24**		**1.96**
Cobalt	**7440-48-4**	**0.322**		**0.0387**
Copper	**7440-50-8**	**33.8**		**2.34**
Lead	**7439-92-1**	**0.392**		**0.190**
Manganese	**7439-96-5**	**10.6**		**1.68**
Molybdenum	**7439-98-7**	**1.81**		**0.319**
Nickel	**7440-02-0**	**0.929**		**0.579**
Selenium	**7782-49-2**	**0.131**		**0.00796**
Thallium	**7440-28-0**	**7.48E-4**		**5.23E-4**
Vanadium	**7440-62-2**	**0.965**		**0.0470**
Zinc	7440-66-6	7.65	U	68.2

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: 08/28/24 14:58
SUBMITTED: 08/19/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-080924-HM
Matrix: Air
Lab ID: 4082761-05
Sample Volume: 1865.755 m³
Filter ID:
Sampled: 08/09/24 23:59
Received: 08/19/24 10:39
Analysis Date: 08/22/24 05:01

Comments: Q9547471 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0837**	SL	**0.0337**
Arsenic	**7440-38-2**	**1.64**		**0.00817**
Barium	**7440-39-3**	**8.38**		**0.933**
Beryllium	**7440-41-7**	**0.0367**		**0.00279**
Cadmium	7440-43-9	0.0445	U	0.0646
Chromium	**7440-47-3**	**7.04**		**1.93**
Cobalt	**7440-48-4**	**1.49**		**0.0380**
Copper	**7440-50-8**	**215**		**2.29**
Lead	**7439-92-1**	**0.533**		**0.187**
Manganese	**7439-96-5**	**36.8**		**1.65**
Molybdenum	**7439-98-7**	**10.0**		**0.313**
Nickel	**7440-02-0**	**3.37**		**0.569**
Selenium	**7782-49-2**	**0.230**		**0.00781**
Thallium	**7440-28-0**	**0.00168**		**5.14E-4**
Vanadium	**7440-62-2**	**4.55**		**0.0461**
Zinc	7440-66-6	14.6	U	67.0

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/28/24 14:58
SUBMITTED: 08/19/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-080924-HM
Matrix: Air
Lab ID: 4082761-06
Sample Volume: 2035.091 m³
Filter ID:
Sampled: 08/09/24 23:59
Received: 08/19/24 10:39
Analysis Date: 08/22/24 05:16

Comments: Q9547467 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.191**	SL	**0.0309**
Arsenic	**7440-38-2**	**0.368**		**0.00749**
Barium	**7440-39-3**	**5.06**		**0.855**
Beryllium	**7440-41-7**	**0.0136**		**0.00256**
Cadmium	7440-43-9	0.0127	U	0.0592
Chromium	**7440-47-3**	**2.52**		**1.77**
Cobalt	**7440-48-4**	**0.447**		**0.0349**
Copper	**7440-50-8**	**44.5**		**2.10**
Lead	**7439-92-1**	**0.849**		**0.171**
Manganese	**7439-96-5**	**12.9**		**1.51**
Molybdenum	**7439-98-7**	**2.16**		**0.287**
Nickel	**7440-02-0**	**1.23**		**0.521**
Selenium	**7782-49-2**	**0.148**		**0.00716**
Thallium	**7440-28-0**	**7.98E-4**		**4.71E-4**
Vanadium	**7440-62-2**	**1.52**		**0.0423**
Zinc	7440-66-6	12.2	U	61.4

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: 08/28/24 14:58
SUBMITTED: 08/19/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-080924-HM **Lab ID:** 4082761-07 **Sampled:** 08/09/24 23:59
Matrix: Air **Sample Volume:** 1847.44€ m³ **Received:** 08/19/24 10:39
Filter ID: **Analysis Date:** 08/22/24 05:31

Comments: Q8525729 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0650**	SL	**0.0340**
Arsenic	**7440-38-2**	**0.140**		**0.00825**
Barium	**7440-39-3**	**2.91**		**0.942**
Beryllium	**7440-41-7**	**0.0209**		**0.00282**
Cadmium	7440-43-9	0.00773	U	0.0653
Chromium	**7440-47-3**	**2.22**		**1.95**
Cobalt	**7440-48-4**	**0.358**		**0.0384**
Copper	**7440-50-8**	**39.4**		**2.32**
Lead	**7439-92-1**	**0.278**		**0.188**
Manganese	**7439-96-5**	**9.14**		**1.66**
Molybdenum	**7439-98-7**	**1.91**		**0.316**
Nickel	**7440-02-0**	**1.17**		**0.574**
Selenium	**7782-49-2**	**0.111**		**0.00789**
Thallium	**7440-28-0**	**6.75E-4**		**5.19E-4**
Vanadium	**7440-62-2**	**1.03**		**0.0466**
Zinc	7440-66-6	7.60	U	67.6

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/28/24 14:58
SUBMITTED: 08/19/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-080924-HM
Matrix: Air
Lab ID: 4082761-08
Sample Volume: 1792.703 m³
Filter ID:
Sampled: 08/09/24 23:59
Received: 08/19/24 10:39
Analysis Date: 08/22/24 05:45

Comments: Q8525728 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.111**	SL	**0.0350**
Arsenic	**7440-38-2**	**0.399**		**0.00850**
Barium	**7440-39-3**	**3.56**		**0.971**
Beryllium	**7440-41-7**	**0.00940**		**0.00290**
Cadmium	7440-43-9	0.0186	U	0.0673
Chromium	**7440-47-3**	**2.28**		**2.01**
Cobalt	**7440-48-4**	**0.341**		**0.0396**
Copper	**7440-50-8**	**43.9**		**2.39**
Lead	**7439-92-1**	**0.689**		**0.194**
Manganese	**7439-96-5**	**10.7**		**1.72**
Molybdenum	**7439-98-7**	**2.02**		**0.326**
Nickel	**7440-02-0**	**1.14**		**0.592**
Selenium	**7782-49-2**	**0.119**		**0.00813**
Thallium	**7440-28-0**	**6.54E-4**		**5.35E-4**
Vanadium	**7440-62-2**	**1.03**		**0.0480**
Zinc	7440-66-6	9.91	U	69.7

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: 08/28/24 14:58
SUBMITTED: 08/19/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-FB01-080924-HM
Matrix: Air
Lab ID: 4082761-09
Sample Volume: 1865.755 m³
Filter ID:
Sampled: 08/09/24 00:00
Received: 08/19/24 10:39
Analysis Date: 08/22/24 05:59

Comments: Q8525724 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.191**	FB-01, SL	**0.0337**
Arsenic	**7440-38-2**	**0.0142**	FB-01	**0.00817**
Barium	**7440-39-3**	**1.30**	FB-01	**0.933**
Beryllium	7440-41-7	4.95E-4	U	0.00279
Cadmium	7440-43-9	0.00555	U	0.0646
Chromium	7440-47-3	0.948	U	1.93
Cobalt	7440-48-4	0.0204	U	0.0380
Copper	**7440-50-8**	**3.80**	FB-01	**2.29**
Lead	7439-92-1	0.0615	U	0.187
Manganese	7439-96-5	0.454	U	1.65
Molybdenum	**7439-98-7**	**0.338**	FB-01	**0.313**
Nickel	7440-02-0	0.448	U	0.569
Selenium	7782-49-2	0.00119	U	0.00781
Thallium	7440-28-0	1.42E-4	U	5.14E-4
Vanadium	**7440-62-2**	**0.0462**	FB-01	**0.0461**
Zinc	7440-66-6	11.0	U	67.0

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/28/24 14:58
SUBMITTED: 08/19/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-LB01-080924-HM
Matrix: Air
Lab ID: 4082761-10
Sample Volume: 1865.755 m³
Filter ID:
Sampled: 08/09/24 00:00
Received: 08/19/24 10:39
Analysis Date: 08/22/24 06:12

Comments: Q9539676 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	7440-36-0	0.0104	SL, U	0.0337
Arsenic	7440-38-2	0.00685	U	0.00817
Barium	7440-39-3	0.782	U	0.933
Beryllium	7440-41-7	6.70E-4	U	0.00279
Cadmium	7440-43-9	0.00245	U	0.0646
Chromium	7440-47-3	1.39	U	1.93
Cobalt	7440-48-4	0.0242	U	0.0380
Copper	7440-50-8	0.559	U	2.29
Lead	7439-92-1	0.0532	U	0.187
Manganese	7439-96-5	0.281	U	1.65
Molybdenum	7439-98-7	0.256	U	0.313
Nickel	7440-02-0	0.249	U	0.569
Selenium	7782-49-2	7.44E-4	U	0.00781
Thallium	7440-28-0	7.20E-5	U	5.14E-4
Vanadium	7440-62-2	0.0419	U	0.0461
Zinc	7440-66-6	3.36	U	67.0

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/28/24 14:58
SUBMITTED: 08/19/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-081024-HM
Matrix: Air
Lab ID: 4082761-11
Sample Volume: 1913.519 m³
Filter ID:
Sampled: 08/10/24 23:59
Received: 08/19/24 10:39
Analysis Date: 08/22/24 07:20

Comments: Q9539675 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0465**	SL	**0.0328**
Arsenic	**7440-38-2**	**0.591**		**0.00797**
Barium	**7440-39-3**	**3.05**		**0.910**
Beryllium	**7440-41-7**	**0.0107**		**0.00272**
Cadmium	7440-43-9	0.0559	U	0.0630
Chromium	**7440-47-3**	**3.05**		**1.88**
Cobalt	**7440-48-4**	**0.413**		**0.0371**
Copper	**7440-50-8**	**172**		**2.24**
Lead	**7439-92-1**	**0.238**		**0.182**
Manganese	**7439-96-5**	**11.0**		**1.61**
Molybdenum	**7439-98-7**	**10.2**		**0.305**
Nickel	**7440-02-0**	**1.32**		**0.554**
Selenium	**7782-49-2**	**0.137**		**0.00762**
Thallium	**7440-28-0**	**0.00101**		**5.01E-4**
Vanadium	**7440-62-2**	**1.38**		**0.0450**
Zinc	7440-66-6	6.44	U	65.3

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/28/24 14:58
SUBMITTED: 08/19/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-081024-HM
Matrix: Air
Lab ID: 4082761-12
Sample Volume: 1923.279 m³
Filter ID:
Sampled: 08/10/24 23:59
Received: 08/19/24 10:39
Analysis Date: 08/22/24 07:33

Comments: Q9539674 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.107**	SL	**0.0327**
Arsenic	**7440-38-2**	**0.272**		**0.00793**
Barium	**7440-39-3**	**3.83**		**0.905**
Beryllium	**7440-41-7**	**0.0108**		**0.00271**
Cadmium	7440-43-9	0.0149	U	0.0627
Chromium	**7440-47-3**	**2.51**		**1.87**
Cobalt	**7440-48-4**	**0.297**		**0.0369**
Copper	**7440-50-8**	**62.0**		**2.22**
Lead	**7439-92-1**	**0.687**		**0.181**
Manganese	**7439-96-5**	**9.68**		**1.60**
Molybdenum	**7439-98-7**	**3.57**		**0.304**
Nickel	**7440-02-0**	**0.905**		**0.552**
Selenium	**7782-49-2**	**0.161**		**0.00758**
Thallium	**7440-28-0**	**9.60E-4**		**4.98E-4**
Vanadium	**7440-62-2**	**1.04**		**0.0448**
Zinc	7440-66-6	9.71	U	65.0

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/28/24 14:58
SUBMITTED: 08/19/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-081024-HM
Matrix: Air
Lab ID: 4082761-13
Sample Volume: 2037.005 m³
Filter ID:
Sampled: 08/10/24 23:59
Received: 08/19/24 10:39
Analysis Date: 08/22/24 07:48

Comments: Q9539671 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0369**	SL	**0.0308**
Arsenic	**7440-38-2**	**0.156**		**0.00748**
Barium	**7440-39-3**	**2.59**		**0.855**
Beryllium	**7440-41-7**	**0.0235**		**0.00256**
Cadmium	7440-43-9	0.00956	U	0.0592
Chromium	**7440-47-3**	**2.60**		**1.77**
Cobalt	**7440-48-4**	**0.363**		**0.0348**
Copper	**7440-50-8**	**53.8**		**2.10**
Lead	**7439-92-1**	**0.261**		**0.171**
Manganese	**7439-96-5**	**9.39**		**1.51**
Molybdenum	**7439-98-7**	**4.05**		**0.287**
Nickel	**7440-02-0**	**0.973**		**0.521**
Selenium	**7782-49-2**	**0.142**		**0.00716**
Thallium	**7440-28-0**	**9.78E-4**		**4.70E-4**
Vanadium	**7440-62-2**	**1.02**		**0.0423**
Zinc	7440-66-6	6.58	U	61.3

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: 08/28/24 14:58
SUBMITTED: 08/19/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-081024-HM
Matrix: Air
Lab ID: 4082761-14
Sample Volume: 1828.048 m³
Filter ID:
Sampled: 08/10/24 23:59
Received: 08/19/24 10:39
Analysis Date: 08/22/24 08:01

Comments: Q9539670 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.101**	SL	**0.0344**
Arsenic	**7440-38-2**	**0.358**		**0.00834**
Barium	**7440-39-3**	**3.38**		**0.952**
Beryllium	**7440-41-7**	**0.00955**		**0.00285**
Cadmium	7440-43-9	0.0346	U	0.0660
Chromium	**7440-47-3**	**2.83**		**1.97**
Cobalt	**7440-48-4**	**0.344**		**0.0388**
Copper	**7440-50-8**	**36.7**		**2.34**
Lead	**7439-92-1**	**0.696**		**0.190**
Manganese	**7439-96-5**	**11.5**		**1.68**
Molybdenum	**7439-98-7**	**2.37**		**0.320**
Nickel	**7440-02-0**	**1.12**		**0.580**
Selenium	**7782-49-2**	**0.160**		**0.00797**
Thallium	**7440-28-0**	**9.44E-4**		**5.24E-4**
Vanadium	**7440-62-2**	**0.879**		**0.0471**
Zinc	7440-66-6	13.0	U	68.4

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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: 08/28/24 14:58
SUBMITTED: 08/19/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-081124-HM
Matrix: Air
Lab ID: 4082761-15
Sample Volume: 1884.919 m³
Filter ID:
Sampled: 08/11/24 23:59
Received: 08/19/24 10:39
Analysis Date: 08/22/24 08:15

Comments: Q9539669 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0340**	SL	**0.0333**
Arsenic	**7440-38-2**	**0.315**		**0.00809**
Barium	**7440-39-3**	**2.33**		**0.924**
Beryllium	**7440-41-7**	**0.00630**		**0.00276**
Cadmium	7440-43-9	0.0136	U	0.0640
Chromium	**7440-47-3**	**2.26**		**1.91**
Cobalt	**7440-48-4**	**0.243**		**0.0376**
Copper	**7440-50-8**	**211**		**2.27**
Lead	**7439-92-1**	**0.237**		**0.185**
Manganese	**7439-96-5**	**6.30**		**1.63**
Molybdenum	**7439-98-7**	**14.1**		**0.310**
Nickel	**7440-02-0**	**0.798**		**0.563**
Selenium	**7782-49-2**	**0.173**		**0.00773**
Thallium	**7440-28-0**	**0.00137**		**5.08E-4**
Vanadium	**7440-62-2**	**0.872**		**0.0457**
Zinc	7440-66-6	7.08	U	66.3

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/28/24 14:58
SUBMITTED: 08/19/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-081124-HM
Matrix: Air
Lab ID: 4082761-16
Sample Volume: 1952.118 m³
Filter ID:
Sampled: 08/11/24 23:59
Received: 08/19/24 10:39
Analysis Date: 08/22/24 08:43

Comments: Q9539668 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.138**	SL	**0.0322**
Arsenic	**7440-38-2**	**0.312**		**0.00781**
Barium	**7440-39-3**	**3.85**		**0.892**
Beryllium	**7440-41-7**	**0.0108**		**0.00267**
Cadmium	7440-43-9	0.0194	U	0.0618
Chromium	**7440-47-3**	**2.58**		**1.84**
Cobalt	**7440-48-4**	**0.288**		**0.0363**
Copper	**7440-50-8**	**50.7**		**2.19**
Lead	**7439-92-1**	**0.928**		**0.178**
Manganese	**7439-96-5**	**8.98**		**1.58**
Molybdenum	**7439-98-7**	**4.21**		**0.299**
Nickel	**7440-02-0**	**1.14**		**0.543**
Selenium	**7782-49-2**	**0.229**		**0.00747**
Thallium	**7440-28-0**	**0.00173**		**4.91E-4**
Vanadium	**7440-62-2**	**1.20**		**0.0441**
Zinc	7440-66-6	11.4	U	64.0

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/28/24 14:58
SUBMITTED: 08/19/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-081124-HM
Matrix: Air
Lab ID: 4082761-17
Sample Volume: 2006.763 m³
Filter ID:
Sampled: 08/11/24 23:59
Received: 08/19/24 10:39
Analysis Date: 08/22/24 08:58

Comments: Q9539667 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	7440-36-0	0.0298	SL, U	0.0313
Arsenic	**7440-38-2**	**0.118**		**0.00760**
Barium	**7440-39-3**	**2.19**		**0.868**
Beryllium	**7440-41-7**	**0.0132**		**0.00259**
Cadmium	7440-43-9	0.0123	U	0.0601
Chromium	**7440-47-3**	**2.13**		**1.79**
Cobalt	**7440-48-4**	**0.254**		**0.0353**
Copper	**7440-50-8**	**44.1**		**2.13**
Lead	**7439-92-1**	**0.315**		**0.174**
Manganese	**7439-96-5**	**6.49**		**1.53**
Molybdenum	**7439-98-7**	**3.97**		**0.291**
Nickel	**7440-02-0**	**0.828**		**0.529**
Selenium	**7782-49-2**	**0.149**		**0.00726**
Thallium	**7440-28-0**	**0.00117**		**4.78E-4**
Vanadium	**7440-62-2**	**0.793**		**0.0429**
Zinc	7440-66-6	8.18	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: 08/28/24 14:58
SUBMITTED: 08/19/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-081124-HM
Matrix: Air
Lab ID: 4082761-18
Sample Volume: 1744.739 m³
Filter ID:
Sampled: 08/11/24 23:59
Received: 08/19/24 10:39
Analysis Date: 08/22/24 09:12

Comments: Q8525730 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.119**	SL	**0.0360**
Arsenic	**7440-38-2**	**0.238**		**0.00874**
Barium	**7440-39-3**	**3.12**		**0.998**
Beryllium	**7440-41-7**	**0.00677**		**0.00298**
Cadmium	7440-43-9	0.0133	U	0.0691
Chromium	7440-47-3	1.80	U	2.06
Cobalt	**7440-48-4**	**0.214**		**0.0407**
Copper	**7440-50-8**	**30.9**		**2.45**
Lead	**7439-92-1**	**0.593**		**0.200**
Manganese	**7439-96-5**	**7.16**		**1.76**
Molybdenum	**7439-98-7**	**2.19**		**0.335**
Nickel	**7440-02-0**	**1.05**		**0.608**
Selenium	**7782-49-2**	**0.203**		**0.00836**
Thallium	**7440-28-0**	**0.00145**		**5.49E-4**
Vanadium	**7440-62-2**	**0.970**		**0.0493**
Zinc	7440-66-6	9.14	U	71.6

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/28/24 14:58
SUBMITTED: 08/19/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-FB01-081124-HM
Matrix: Air
Lab ID: 4082761-19
Sample Volume: 1884.919 m³
Filter ID:
Sampled: 08/11/24 00:00
Received: 08/19/24 10:39
Analysis Date: 08/22/24 09:26

Comments: Q8525739 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	7440-36-0	0.0250	SL, U	0.0333
Arsenic	7440-38-2	0.00608	U	0.00809
Barium	**7440-39-3**	**1.35**	FB-01	**0.924**
Beryllium	7440-41-7	1.66E-4	U	0.00276
Cadmium	7440-43-9	0.00149	U	0.0640
Chromium	7440-47-3	0.844	U	1.91
Cobalt	7440-48-4	0.0130	U	0.0376
Copper	7440-50-8	1.86	U	2.27
Lead	7439-92-1	0.0331	U	0.185
Manganese	7439-96-5	0.284	U	1.63
Molybdenum	7439-98-7	0.212	U	0.310
Nickel	7440-02-0	0.391	U	0.563
Selenium	7782-49-2	-9.37E-4	U	0.00773
Thallium	7440-28-0	7.42E-5	U	5.08E-4
Vanadium	7440-62-2	0.0415	U	0.0457
Zinc	7440-66-6	3.13	U	66.3

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: 08/28/24 14:58
SUBMITTED: 08/19/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-081224-HM
Matrix: Air
Lab ID: 4082761-20
Sample Volume: 1934.488 m³
Filter ID:
Sampled: 08/12/24 23:59
Received: 08/19/24 10:39
Analysis Date: 08/22/24 09:40

Comments: Q8525723 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0759**	SL	**0.0325**
Arsenic	**7440-38-2**	**2.03**		**0.00788**
Barium	**7440-39-3**	**19.0**		**0.900**
Beryllium	**7440-41-7**	**0.0790**		**0.00269**
Cadmium	7440-43-9	0.0516	U	0.0623
Chromium	**7440-47-3**	**7.57**		**1.86**
Cobalt	**7440-48-4**	**1.80**		**0.0367**
Copper	**7440-50-8**	**316**		**2.21**
Lead	**7439-92-1**	**0.930**		**0.180**
Manganese	**7439-96-5**	**63.8**		**1.59**
Molybdenum	**7439-98-7**	**21.4**		**0.302**
Nickel	**7440-02-0**	**3.54**		**0.548**
Selenium	**7782-49-2**	**0.431**		**0.00754**
Thallium	**7440-28-0**	**0.00535**		**4.95E-4**
Vanadium	**7440-62-2**	**7.52**		**0.0445**
Zinc	7440-66-6	16.2	U	64.6

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/28/24 14:58
SUBMITTED: 08/19/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-081224-HM
Matrix: Air
Lab ID: 4082761-21
Sample Volume: 1981.035 m³
Filter ID:
Sampled: 08/12/24 23:59
Received: 08/19/24 10:39
Analysis Date: 08/21/24 21:37

Comments: Q8525740 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.101**	SL	**0.0317**
Arsenic	**7440-38-2**	**0.355**		**0.00770**
Barium	**7440-39-3**	**3.31**		**0.879**
Beryllium	**7440-41-7**	**0.00779**		**0.00263**
Cadmium	7440-43-9	0.0184	U	0.0609
Chromium	7440-47-3	1.51	U	1.82
Cobalt	**7440-48-4**	**0.203**		**0.0358**
Copper	**7440-50-8**	**43.8**	QM-07	**2.16**
Lead	**7439-92-1**	**0.554**		**0.176**
Manganese	**7439-96-5**	**6.77**		**1.55**
Molybdenum	**7439-98-7**	**4.27**	QM-07	**0.295**
Nickel	**7440-02-0**	**0.895**		**0.535**
Selenium	**7782-49-2**	**0.212**		**0.00736**
Thallium	**7440-28-0**	**0.00135**		**4.84E-4**
Vanadium	**7440-62-2**	**1.08**		**0.0434**
Zinc	7440-66-6	11.1	U	63.1

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: 08/28/24 14:58
SUBMITTED: 08/19/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-081224-HM
Matrix: Air
Lab ID: 4082761-22
Sample Volume: 1958.291 m³
Filter ID:
Sampled: 08/12/24 23:59
Received: 08/19/24 10:39
Analysis Date: 08/22/24 10:50

Comments: Q8525737 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0746**	SL	**0.0321**
Arsenic	**7440-38-2**	**0.155**		**0.00778**
Barium	**7440-39-3**	**3.45**		**0.889**
Beryllium	**7440-41-7**	**0.0187**		**0.00266**
Cadmium	7440-43-9	0.0146	U	0.0616
Chromium	**7440-47-3**	**2.13**		**1.84**
Cobalt	**7440-48-4**	**0.334**		**0.0362**
Copper	**7440-50-8**	**68.7**		**2.19**
Lead	**7439-92-1**	**0.657**		**0.178**
Manganese	**7439-96-5**	**8.66**		**1.57**
Molybdenum	**7439-98-7**	**5.04**		**0.298**
Nickel	**7440-02-0**	**2.09**		**0.542**
Selenium	**7782-49-2**	**0.180**		**0.00744**
Thallium	**7440-28-0**	**0.00127**		**4.89E-4**
Vanadium	**7440-62-2**	**1.13**		**0.0440**
Zinc	7440-66-6	13.6	U	63.8

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: 08/28/24 14:58
SUBMITTED: 08/19/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-081224-HM
Matrix: Air
Lab ID: 4082761-23
Sample Volume: 1757.923 m³
Filter ID:
Sampled: 08/12/24 23:59
Received: 08/19/24 10:39
Analysis Date: 08/22/24 11:06

Comments: Q8525736 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0965**	SL	**0.0357**
Arsenic	**7440-38-2**	**0.183**		**0.00867**
Barium	**7440-39-3**	**2.82**		**0.990**
Beryllium	**7440-41-7**	**0.00589**		**0.00296**
Cadmium	7440-43-9	0.0306	U	0.0686
Chromium	7440-47-3	1.64	U	2.05
Cobalt	**7440-48-4**	**0.177**		**0.0404**
Copper	**7440-50-8**	**30.7**		**2.43**
Lead	**7439-92-1**	**0.442**		**0.198**
Manganese	**7439-96-5**	**5.98**		**1.75**
Molybdenum	**7439-98-7**	**1.78**		**0.332**
Nickel	**7440-02-0**	**0.983**		**0.603**
Selenium	**7782-49-2**	**0.148**		**0.00829**
Thallium	**7440-28-0**	**0.00103**		**5.45E-4**
Vanadium	**7440-62-2**	**0.786**		**0.0490**
Zinc	7440-66-6	8.53	U	71.1

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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: 08/28/24 14:58
SUBMITTED: 08/19/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-081324-HM
Matrix: Air
Lab ID: 4082761-24
Sample Volume: 1962.037 m³
Filter ID:
Sampled: 08/13/24 23:59
Received: 08/19/24 10:39
Analysis Date: 08/22/24 11:20

Comments: Q8525735 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.118**	SL	**0.0320**
Arsenic	**7440-38-2**	**2.84**		**0.00777**
Barium	**7440-39-3**	**22.0**		**0.887**
Beryllium	**7440-41-7**	**0.0452**		**0.00265**
Cadmium	7440-43-9	0.0472	U	0.0614
Chromium	**7440-47-3**	**9.20**		**1.83**
Cobalt	**7440-48-4**	**1.94**		**0.0362**
Copper	**7440-50-8**	**170**		**2.18**
Lead	**7439-92-1**	**0.627**		**0.177**
Manganese	**7439-96-5**	**47.4**		**1.57**
Molybdenum	**7439-98-7**	**13.0**		**0.298**
Nickel	**7440-02-0**	**4.97**		**0.541**
Selenium	**7782-49-2**	**0.333**		**0.00743**
Thallium	**7440-28-0**	**0.00332**		**4.88E-4**
Vanadium	**7440-62-2**	**5.96**		**0.0439**
Zinc	7440-66-6	15.4	U	63.7

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: 08/28/24 14:58
SUBMITTED: 08/19/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-081324-HM
Matrix: Air
Lab ID: 4082761-25
Sample Volume: 1985.152 m³
Filter ID:
Sampled: 08/13/24 23:59
Received: 08/19/24 10:39
Analysis Date: 08/22/24 11:35

Comments: Q8525734 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.149**	SL	**0.0316**
Arsenic	**7440-38-2**	**0.589**		**0.00768**
Barium	**7440-39-3**	**8.23**		**0.877**
Beryllium	**7440-41-7**	**0.0306**		**0.00262**
Cadmium	**7440-43-9**	**0.0875**		**0.0607**
Chromium	**7440-47-3**	**5.07**		**1.81**
Cobalt	**7440-48-4**	**1.16**		**0.0357**
Copper	**7440-50-8**	**40.4**		**2.16**
Lead	**7439-92-1**	**1.11**		**0.175**
Manganese	**7439-96-5**	**28.6**		**1.55**
Molybdenum	**7439-98-7**	**2.51**		**0.294**
Nickel	**7440-02-0**	**3.23**		**0.534**
Selenium	**7782-49-2**	**0.287**		**0.00734**
Thallium	**7440-28-0**	**0.00270**		**4.83E-4**
Vanadium	**7440-62-2**	**3.63**		**0.0434**
Zinc	7440-66-6	17.0	U	62.9

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/28/24 14:58
SUBMITTED: 08/19/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-081324-HM
Matrix: Air
Lab ID: 4082761-26
Sample Volume: 2054.202 m³
Filter ID:
Sampled: 08/13/24 23:59
Received: 08/19/24 10:39
Analysis Date: 08/22/24 11:50

Comments: Q8525733 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0657**	SL	**0.0306**
Arsenic	**7440-38-2**	**0.213**		**0.00742**
Barium	**7440-39-3**	**3.70**		**0.847**
Beryllium	**7440-41-7**	**0.0278**		**0.00253**
Cadmium	7440-43-9	0.0240	U	0.0587
Chromium	**7440-47-3**	**3.04**		**1.75**
Cobalt	**7440-48-4**	**0.526**		**0.0345**
Copper	**7440-50-8**	**50.5**		**2.08**
Lead	**7439-92-1**	**0.318**		**0.169**
Manganese	**7439-96-5**	**13.2**		**1.50**
Molybdenum	**7439-98-7**	**3.78**		**0.284**
Nickel	**7440-02-0**	**1.81**		**0.516**
Selenium	**7782-49-2**	**0.204**		**0.00710**
Thallium	**7440-28-0**	**0.00179**		**4.67E-4**
Vanadium	**7440-62-2**	**1.50**		**0.0419**
Zinc	7440-66-6	10.2	U	60.8

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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: 08/28/24 14:58
SUBMITTED: 08/19/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-081324-HM
Matrix: Air
Lab ID: 4082761-27
Sample Volume: 1587.694 m³
Filter ID:
Sampled: 08/13/24 23:59
Received: 08/19/24 10:39
Analysis Date: 08/22/24 12:04

Comments: Q8525732 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.142**	SL	**0.0396**
Arsenic	**7440-38-2**	**0.460**		**0.00960**
Barium	**7440-39-3**	**4.58**		**1.10**
Beryllium	**7440-41-7**	**0.0137**		**0.00328**
Cadmium	7440-43-9	0.0234	U	0.0759
Chromium	**7440-47-3**	**5.40**		**2.26**
Cobalt	**7440-48-4**	**0.530**		**0.0447**
Copper	**7440-50-8**	**41.4**		**2.70**
Lead	**7439-92-1**	**0.644**		**0.219**
Manganese	**7439-96-5**	**15.4**		**1.94**
Molybdenum	**7439-98-7**	**2.39**		**0.368**
Nickel	**7440-02-0**	**3.11**		**0.668**
Selenium	**7782-49-2**	**0.210**		**0.00918**
Thallium	**7440-28-0**	**0.00197**		**6.04E-4**
Vanadium	**7440-62-2**	**1.42**		**0.0542**
Zinc	7440-66-6	15.6	U	78.7

CERTIFICATE OF ANALYSIS

Tetra Tech, Inc.
1777 Sentry Pkwy, Bldg 12
Blue Bell, PA 19422
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FILE #: 4205.00.003.001
REPORTED: 08/28/24 14:58
SUBMITTED: 08/19/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-FB01-081324-HM
Matrix: Air
Lab ID: 4082761-28
Sample Volume: 1962.037 m³
Filter ID:
Sampled: 08/13/24 00:00
Received: 08/19/24 10:39
Analysis Date: 08/22/24 12:33

Comments: Q9553181 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	7440-36-0	0.0155	SL, U	0.0320
Arsenic	7440-38-2	0.00444	U	0.00777
Barium	7440-39-3	0.392	U	0.887
Beryllium	7440-41-7	4.81E-4	U	0.00265
Cadmium	7440-43-9	0.00113	U	0.0614
Chromium	7440-47-3	1.03	U	1.83
Cobalt	7440-48-4	0.0187	U	0.0362
Copper	7440-50-8	0.408	U	2.18
Lead	7439-92-1	0.0242	U	0.177
Manganese	7439-96-5	0.184	U	1.57
Molybdenum	7439-98-7	0.157	U	0.298
Nickel	7440-02-0	0.237	U	0.541
Selenium	7782-49-2	0.00322	U	0.00743
Thallium	7440-28-0	7.89E-5	U	4.88E-4
Vanadium	7440-62-2	0.0221	U	0.0439
Zinc	7440-66-6	3.11	U	63.7

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: 08/28/24 14:58
SUBMITTED: 08/19/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-081424-HM
Matrix: Air
Lab ID: 4082761-29
Sample Volume: 1892.802 m³
Filter ID:
Sampled: 08/14/24 23:59
Received: 08/19/24 10:39
Analysis Date: 08/22/24 12:46

Comments: Q9553184 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0878**	SL	**0.0332**
Arsenic	**7440-38-2**	**2.10**		**0.00805**
Barium	**7440-39-3**	**11.7**		**0.920**
Beryllium	**7440-41-7**	**0.0528**		**0.00275**
Cadmium	**7440-43-9**	**0.0969**		**0.0637**
Chromium	**7440-47-3**	**9.93**		**1.90**
Cobalt	**7440-48-4**	**2.35**		**0.0375**
Copper	**7440-50-8**	**189**		**2.26**
Lead	**7439-92-1**	**0.778**		**0.184**
Manganese	**7439-96-5**	**54.6**		**1.62**
Molybdenum	**7439-98-7**	**12.3**		**0.309**
Nickel	**7440-02-0**	**5.28**		**0.560**
Selenium	**7782-49-2**	**0.372**		**0.00770**
Thallium	**7440-28-0**	**0.00331**		**5.06E-4**
Vanadium	**7440-62-2**	**6.78**		**0.0455**
Zinc	7440-66-6	12.1	U	66.0

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/28/24 14:58
SUBMITTED: 08/19/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-081424-HM
Matrix: Air
Lab ID: 4082761-31
Sample Volume: 1977.584 m³
Filter ID:
Sampled: 08/14/24 23:59
Received: 08/19/24 10:39
Analysis Date: 08/22/24 13:05

Comments: Q9553182 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0590**	SL	**0.0318**
Arsenic	**7440-38-2**	**0.210**		**0.00771**
Barium	**7440-39-3**	**3.32**		**0.880**
Beryllium	**7440-41-7**	**0.0313**		**0.00263**
Cadmium	7440-43-9	0.0105	U	0.0610
Chromium	**7440-47-3**	**2.90**		**1.82**
Cobalt	**7440-48-4**	**0.501**		**0.0359**
Copper	**7440-50-8**	**37.7**		**2.16**
Lead	**7439-92-1**	**0.549**		**0.176**
Manganese	**7439-96-5**	**12.0**		**1.55**
Molybdenum	**7439-98-7**	**3.06**		**0.295**
Nickel	**7440-02-0**	**1.33**		**0.536**
Selenium	**7782-49-2**	**0.185**		**0.00737**
Thallium	**7440-28-0**	**0.00159**		**4.85E-4**
Vanadium	**7440-62-2**	**1.40**		**0.0435**
Zinc	7440-66-6	10.5	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: 08/28/24 14:58
SUBMITTED: 08/19/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-081424-HM
Matrix: Air
Lab ID: 4082761-32
Sample Volume: 1731.473 m³
Filter ID:
Sampled: 08/14/24 23:59
Received: 08/19/24 10:39
Analysis Date: 08/22/24 14:13

Comments: Q9553180 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0780**	SL	**0.0363**
Arsenic	**7440-38-2**	**0.397**		**0.00880**
Barium	**7440-39-3**	**2.92**		**1.01**
Beryllium	**7440-41-7**	**0.0132**		**0.00301**
Cadmium	7440-43-9	0.0120	U	0.0696
Chromium	**7440-47-3**	**2.73**		**2.08**
Cobalt	**7440-48-4**	**0.419**		**0.0410**
Copper	**7440-50-8**	**36.4**		**2.47**
Lead	**7439-92-1**	**0.470**		**0.201**
Manganese	**7439-96-5**	**12.1**		**1.78**
Molybdenum	**7439-98-7**	**2.28**		**0.337**
Nickel	**7440-02-0**	**1.24**		**0.613**
Selenium	**7782-49-2**	**0.167**		**0.00842**
Thallium	**7440-28-0**	**0.00161**		**5.53E-4**
Vanadium	**7440-62-2**	**1.16**		**0.0497**
Zinc	7440-66-6	9.98	U	72.2

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: 08/28/24 14:58
SUBMITTED: 08/19/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-LB01-081424-HM **Lab ID:** 4082761-33 **Sampled:** 08/14/24 00:00
Matrix: Air **Sample Volume:** 1627 m³ **Received:** 08/19/24 10:39
Filter ID: **Analysis Date:** 08/22/24 14:27

Comments: Q9553179 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	7440-36-0	0.0140	U	0.0386
Arsenic	7440-38-2	0.00844	U	0.00937
Barium	7440-39-3	0.530	U	1.07
Beryllium	7440-41-7	6.91E-4	U	0.00320
Cadmium	7440-43-9	0.00115	U	0.0741
Chromium	7440-47-3	1.27	U	2.21
Cobalt	7440-48-4	0.0274	U	0.0436
Copper	7440-50-8	0.521	U	2.63
Lead	7439-92-1	0.0320	U	0.214
Manganese	7439-96-5	0.328	U	1.89
Molybdenum	7439-98-7	0.227	U	0.359
Nickel	7440-02-0	0.305	U	0.652
Selenium	7782-49-2	0.00227	U	0.00896
Thallium	7440-28-0	1.75E-4	U	5.89E-4
Vanadium	7440-62-2	0.0356	U	0.0529
Zinc	7440-66-6	4.71	U	76.8

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: 08/28/24 14:58
SUBMITTED: 08/19/24
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 2408051 - B4H2703										
Calibration Blank (2408051-CCB1)				Prepared & Analyzed: 08/21/24						
Antimony	0.512		ng/l							
Arsenic	-5.89		ng/l							U
Barium	-0.965		ng/l							U
Beryllium	-0.695		ng/l							U
Cadmium	-0.121		ng/l							U
Chromium	-1.59		ng/l							U
Cobalt	-0.145		ng/l							U
Copper	89.5		ng/l							
Lead	8.30		ng/l							
Manganese	-1.23		ng/l							U
Molybdenum	21.1		ng/l							
Nickel	-4.62		ng/l							U
Selenium	-5.23		ng/l							U
Thallium	1.24		ng/l							
Vanadium	-16.1		ng/l							U
Zinc	-46.3		ng/l							U
Calibration Blank (2408051-CCB2)				Prepared: 08/21/24 Analyzed: 08/22/24						
Antimony	0.00392		ng/l							
Arsenic	-5.39		ng/l							U
Barium	0.925		ng/l							
Beryllium	-1.28		ng/l							U
Cadmium	-0.174		ng/l							U
Chromium	-1.87		ng/l							U
Cobalt	-0.404		ng/l							U
Copper	83.7		ng/l							
Lead	1.32		ng/l							
Manganese	-1.30		ng/l							U
Molybdenum	5.26		ng/l							
Nickel	-3.47		ng/l							U
Selenium	-1.14		ng/l							U
Thallium	1.10		ng/l							
Vanadium	-18.0		ng/l							U
Zinc	-32.9		ng/l							U
Calibration Blank (2408051-CCB3)				Prepared: 08/21/24 Analyzed: 08/22/24						
Antimony	0.159		ng/l							
Arsenic	-4.42		ng/l							U
Barium	-0.584		ng/l							U
Beryllium	-1.30		ng/l							U

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: 08/28/24 14:58
SUBMITTED: 08/19/24
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 2408051 - B4H2703										
Calibration Blank (2408051-CCB3) Contin				Prepared: 08/21/24 Analyzed: 08/22/24						
Cadmium	0.103		ng/l							
Chromium	-1.82		ng/l							U
Cobalt	-0.134		ng/l							U
Copper	43.0		ng/l							
Lead	1.56		ng/l							
Manganese	-2.00		ng/l							U
Molybdenum	4.38		ng/l							
Nickel	-4.96		ng/l							U
Selenium	2.84		ng/l							
Thallium	1.26		ng/l							
Vanadium	-21.3		ng/l							U
Zinc	5.30		ng/l							
Calibration Blank (2408051-CCB4)				Prepared: 08/21/24 Analyzed: 08/22/24						
Antimony	0.319		ng/l							
Arsenic	-1.94		ng/l							U
Barium	-0.965		ng/l							U
Beryllium	-1.72		ng/l							U
Cadmium	0.139		ng/l							
Chromium	-0.908		ng/l							U
Cobalt	-0.342		ng/l							U
Copper	36.2		ng/l							
Lead	1.20		ng/l							
Manganese	-3.02		ng/l							U
Molybdenum	4.83		ng/l							
Nickel	-4.95		ng/l							U
Selenium	-5.97		ng/l							U
Thallium	0.874		ng/l							
Vanadium	-22.1		ng/l							U
Zinc	-53.8		ng/l							U
Calibration Blank (2408051-CCB5)				Prepared: 08/21/24 Analyzed: 08/22/24						
Antimony	0.324		ng/l							
Arsenic	2.94		ng/l							
Barium	0.639		ng/l							
Beryllium	-1.84		ng/l							U
Cadmium	-0.121		ng/l							U
Chromium	-0.213		ng/l							U
Cobalt	-0.209		ng/l							U
Copper	36.4		ng/l							

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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2408051 - B4H2703										
Calibration Blank (2408051-CCB5) Contin				Prepared: 08/21/24 Analyzed: 08/22/24						
Lead	1.19		ng/l							
Manganese	-1.86		ng/l							U
Molybdenum	6.16		ng/l							
Nickel	-6.27		ng/l							U
Selenium	-13.7		ng/l							U
Thallium	0.909		ng/l							
Vanadium	-24.9		ng/l							U
Zinc	-22.8		ng/l							U
Calibration Blank (2408051-CCB6)				Prepared: 08/21/24 Analyzed: 08/22/24						
Antimony	0.331		ng/l							
Arsenic	-2.80		ng/l							U
Barium	2.51		ng/l							
Beryllium	-2.02		ng/l							U
Cadmium	0.0232		ng/l							
Chromium	-1.18		ng/l							U
Cobalt	-0.201		ng/l							U
Copper	28.0		ng/l							
Lead	0.998		ng/l							
Manganese	-2.39		ng/l							U
Molybdenum	6.46		ng/l							
Nickel	-4.91		ng/l							U
Selenium	-8.34		ng/l							U
Thallium	1.07		ng/l							
Vanadium	-24.5		ng/l							U
Zinc	-51.3		ng/l							U
Calibration Blank (2408051-CCB7)				Prepared: 08/21/24 Analyzed: 08/22/24						
Antimony	0.340		ng/l							
Arsenic	-2.10		ng/l							U
Barium	2.33		ng/l							
Beryllium	-1.87		ng/l							U
Cadmium	0.160		ng/l							
Chromium	0.985		ng/l							
Cobalt	0.346		ng/l							
Copper	43.0		ng/l							
Lead	2.84		ng/l							
Manganese	2.93		ng/l							
Molybdenum	7.25		ng/l							
Nickel	-4.76		ng/l							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 2408051 - B4H2703										
Calibration Blank (2408051-CCB7) Contin				Prepared: 08/21/24 Analyzed: 08/22/24						
Selenium	0.489		ng/l							
Thallium	1.20		ng/l							
Vanadium	-27.5		ng/l							U
Zinc	-56.1		ng/l							U
Calibration Check (2408051-CCV1)				Prepared & Analyzed: 08/21/24						
Antimony	20100		ng/l	20000		100	90-110			
Arsenic	19700		ng/l	20000		98.7	90-110			
Barium	197000		ng/l	200000		98.7	90-110			
Beryllium	4930		ng/l	5000.0		98.6	90-110			
Cadmium	20200		ng/l	20000		101	90-110			
Chromium	242000		ng/l	240000		101	90-110			
Cobalt	49700		ng/l	50000		99.5	90-110			
Copper	2.01E6		ng/l	2.0000E6		101	90-110			
Lead	197000		ng/l	200000		98.6	90-110			
Manganese	485000		ng/l	500000		97.0	90-110			
Molybdenum	49400		ng/l	50000		98.8	90-110			
Nickel	120000		ng/l	120000		99.9	90-110			
Selenium	20300		ng/l	20000		101	90-110			
Thallium	489		ng/l	500.00		97.7	90-110			
Vanadium	19900		ng/l	20000		99.7	90-110			
Zinc	505000		ng/l	500000		101	90-110			
Calibration Check (2408051-CCV2)				Prepared & Analyzed: 08/21/24						
Antimony	19300		ng/l	20000		96.3	90-110			
Arsenic	19000		ng/l	20000		95.0	90-110			
Barium	191000		ng/l	200000		95.5	90-110			
Beryllium	4970		ng/l	5000.0		99.5	90-110			
Cadmium	19300		ng/l	20000		96.5	90-110			
Chromium	231000		ng/l	240000		96.1	90-110			
Cobalt	46900		ng/l	50000		93.8	90-110			
Copper	1.90E6		ng/l	2.0000E6		95.0	90-110			
Lead	190000		ng/l	200000		95.1	90-110			
Manganese	463000		ng/l	500000		92.6	90-110			
Molybdenum	46900		ng/l	50000		93.9	90-110			
Nickel	113000		ng/l	120000		94.0	90-110			
Selenium	19400		ng/l	20000		97.0	90-110			
Thallium	459		ng/l	500.00		91.7	90-110			
Vanadium	19200		ng/l	20000		95.8	90-110			
Zinc	480000		ng/l	500000		96.1	90-110			

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2408051 - B4H2703										
Calibration Check (2408051-CCV3)				Prepared: 08/21/24 Analyzed: 08/22/24						
Antimony	20200		ng/l	20000		101	90-110			
Arsenic	19700		ng/l	20000		98.4	90-110			
Barium	198000		ng/l	200000		99.1	90-110			
Beryllium	5010		ng/l	5000.0		100	90-110			
Cadmium	20000		ng/l	20000		100	90-110			
Chromium	240000		ng/l	240000		100	90-110			
Cobalt	48800		ng/l	50000		97.5	90-110			
Copper	1.98E6		ng/l	2.0000E6		98.8	90-110			
Lead	197000		ng/l	200000		98.5	90-110			
Manganese	481000		ng/l	500000		96.3	90-110			
Molybdenum	48800		ng/l	50000		97.6	90-110			
Nickel	117000		ng/l	120000		97.7	90-110			
Selenium	20200		ng/l	20000		101	90-110			
Thallium	476		ng/l	500.00		95.1	90-110			
Vanadium	20100		ng/l	20000		100	90-110			
Zinc	502000		ng/l	500000		100	90-110			
Calibration Check (2408051-CCV4)				Prepared: 08/21/24 Analyzed: 08/22/24						
Antimony	20400		ng/l	20000		102	90-110			
Arsenic	19900		ng/l	20000		99.3	90-110			
Barium	200000		ng/l	200000		99.8	90-110			
Beryllium	5030		ng/l	5000.0		101	90-110			
Cadmium	20200		ng/l	20000		101	90-110			
Chromium	242000		ng/l	240000		101	90-110			
Cobalt	49000		ng/l	50000		97.9	90-110			
Copper	1.99E6		ng/l	2.0000E6		99.6	90-110			
Lead	199000		ng/l	200000		99.4	90-110			
Manganese	481000		ng/l	500000		96.2	90-110			
Molybdenum	49100		ng/l	50000		98.2	90-110			
Nickel	118000		ng/l	120000		98.0	90-110			
Selenium	20200		ng/l	20000		101	90-110			
Thallium	477		ng/l	500.00		95.4	90-110			
Vanadium	20100		ng/l	20000		101	90-110			
Zinc	506000		ng/l	500000		101	90-110			
Calibration Check (2408051-CCV5)				Prepared: 08/21/24 Analyzed: 08/22/24						
Antimony	20600		ng/l	20000		103	90-110			
Arsenic	20100		ng/l	20000		100	90-110			
Barium	207000		ng/l	200000		103	90-110			
Beryllium	5080		ng/l	5000.0		102	90-110			

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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2408051 - B4H2703										
Calibration Check (2408051-CCV5) Contin					Prepared: 08/21/24 Analyzed: 08/22/24					
Cadmium	20500		ng/l	20000		102	90-110			
Chromium	245000		ng/l	240000		102	90-110			
Cobalt	49600		ng/l	50000		99.1	90-110			
Copper	2.01E6		ng/l	2.0000E6		101	90-110			
Lead	201000		ng/l	200000		101	90-110			
Manganese	484000		ng/l	500000		96.8	90-110			
Molybdenum	50800		ng/l	50000		102	90-110			
Nickel	119000		ng/l	120000		99.2	90-110			
Selenium	20400		ng/l	20000		102	90-110			
Thallium	481		ng/l	500.00		96.3	90-110			
Vanadium	20400		ng/l	20000		102	90-110			
Zinc	510000		ng/l	500000		102	90-110			
Calibration Check (2408051-CCV6)					Prepared: 08/21/24 Analyzed: 08/22/24					
Antimony	20500		ng/l	20000		102	90-110			
Arsenic	19900		ng/l	20000		99.6	90-110			
Barium	208000		ng/l	200000		104	90-110			
Beryllium	5050		ng/l	5000.0		101	90-110			
Cadmium	20400		ng/l	20000		102	90-110			
Chromium	246000		ng/l	240000		102	90-110			
Cobalt	49400		ng/l	50000		98.9	90-110			
Copper	2.01E6		ng/l	2.0000E6		101	90-110			
Lead	201000		ng/l	200000		100	90-110			
Manganese	483000		ng/l	500000		96.6	90-110			
Molybdenum	51400		ng/l	50000		103	90-110			
Nickel	119000		ng/l	120000		99.5	90-110			
Selenium	20100		ng/l	20000		100	90-110			
Thallium	479		ng/l	500.00		95.8	90-110			
Vanadium	20400		ng/l	20000		102	90-110			
Zinc	507000		ng/l	500000		101	90-110			
Calibration Check (2408051-CCV7)					Prepared: 08/21/24 Analyzed: 08/22/24					
Antimony	20500		ng/l	20000		103	90-110			
Arsenic	19900		ng/l	20000		99.6	90-110			
Barium	210000		ng/l	200000		105	90-110			
Beryllium	5090		ng/l	5000.0		102	90-110			
Cadmium	20600		ng/l	20000		103	90-110			
Chromium	249000		ng/l	240000		104	90-110			
Cobalt	49800		ng/l	50000		99.5	90-110			
Copper	2.03E6		ng/l	2.0000E6		101	90-110			

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2408051 - B4H2703										
Calibration Check (2408051-CCV7) Contin					Prepared: 08/21/24 Analyzed: 08/22/24					
Lead	201000		ng/l	200000		100	90-110			
Manganese	487000		ng/l	500000		97.5	90-110			
Molybdenum	51900		ng/l	50000		104	90-110			
Nickel	120000		ng/l	120000		99.9	90-110			
Selenium	20200		ng/l	20000		101	90-110			
Thallium	480		ng/l	500.00		96.1	90-110			
Vanadium	20700		ng/l	20000		103	90-110			
Zinc	509000		ng/l	500000		102	90-110			
High Cal Check (2408051-HCV1)					Prepared & Analyzed: 08/21/24					
Antimony	40100		ng/l	40000		100	95-105			
Arsenic	39700		ng/l	40000		99.3	95-105			
Barium	400000		ng/l	400000		100	95-105			
Beryllium	9980		ng/l	10000		99.8	95-105			
Cadmium	39700		ng/l	40000		99.2	95-105			
Chromium	477000		ng/l	480000		99.4	95-105			
Cobalt	98300		ng/l	100000		98.3	95-105			
Copper	3.93E6		ng/l	4.0000E6		98.1	95-105			
Lead	400000		ng/l	400000		99.9	95-105			
Manganese	988000		ng/l	1.0000E6		98.8	95-105			
Molybdenum	98400		ng/l	100000		98.4	95-105			
Nickel	235000		ng/l	240000		97.7	95-105			
Selenium	40500		ng/l	40000		101	95-105			
Thallium	999		ng/l	1000.0		99.9	95-105			
Vanadium	40100		ng/l	40000		100	95-105			
Zinc	999000		ng/l	1.0000E6		99.9	95-105			
Initial Cal Blank (2408051-ICB1)					Prepared & Analyzed: 08/21/24					
Antimony	0.274		ng/l							
Arsenic	-3.20		ng/l							U
Barium	-0.223		ng/l							U
Beryllium	-0.680		ng/l							U
Cadmium	-0.271		ng/l							U
Chromium	0.467		ng/l							
Cobalt	-0.340		ng/l							U
Copper	93.4		ng/l							
Lead	4.96		ng/l							
Manganese	3.40		ng/l							
Molybdenum	10.4		ng/l							
Nickel	-2.37		ng/l							U

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2408051 - B4H2703										
Initial Cal Blank (2408051-ICB1) Continu				Prepared & Analyzed: 08/21/24						
Selenium	-4.81		ng/l							U
Thallium	1.01		ng/l							
Vanadium	-6.28		ng/l							U
Zinc	-34.6		ng/l							U
Initial Cal Check (2408051-ICV1)				Prepared & Analyzed: 08/21/24						
Antimony	19300		ng/l	20000		96.4	90-110			
Arsenic	19100		ng/l	20000		95.6	90-110			
Barium	192000		ng/l	200000		95.9	90-110			
Beryllium	5040		ng/l	5000.0		101	90-110			
Cadmium	19800		ng/l	20000		99.1	90-110			
Chromium	235000		ng/l	240000		97.9	90-110			
Cobalt	46600		ng/l	50000		93.2	90-110			
Copper	1.98E6		ng/l	2.0000E6		99.2	90-110			
Lead	196000		ng/l	200000		97.9	90-110			
Manganese	481000		ng/l	500000		96.2	90-110			
Molybdenum	48300		ng/l	50000		96.5	90-110			
Nickel	119000		ng/l	120000		98.9	90-110			
Selenium	20100		ng/l	20000		100	90-110			
Thallium	483		ng/l	500.00		96.6	90-110			
Vanadium	19300		ng/l	20000		96.6	90-110			
Zinc	491000		ng/l	500000		98.1	90-110			
Interference Check A (2408051-IFA1)				Prepared & Analyzed: 08/21/24						
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	317000		ng/l	300000		106	80-120			
Nickel	0.00		ng/l				80-120			U
Selenium	0.00		ng/l				80-120			U
Thallium	0.00		ng/l				80-120			U
Vanadium	0.00		ng/l				80-120			U
Zinc	0.00		ng/l				80-120			U

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2408051 - B4H2703										
Interference Check B (2408051-IFB1)				Prepared & Analyzed: 08/21/24						
Antimony	20000		ng/l	20000		99.8	80-120			
Arsenic	20100		ng/l	20000		100	80-120			
Barium	197000		ng/l	200000		98.7	80-120			
Beryllium	4780		ng/l	5000.0		95.6	80-120			
Cadmium	19400		ng/l	20000		97.1	80-120			
Chromium	227000		ng/l	240000		94.7	80-120			
Cobalt	48100		ng/l	50000		96.3	80-120			
Copper	1.85E6		ng/l	2.0000E6		92.6	80-120			
Lead	205000		ng/l	200000		102	80-120			
Manganese	472000		ng/l	500000		94.5	80-120			
Molybdenum	364000		ng/l	350000		104	80-120			
Nickel	112000		ng/l	120000		93.4	80-120			
Selenium	19000		ng/l	20000		94.8	80-120			
Thallium	515		ng/l	500.00		103	80-120			
Vanadium	18400		ng/l	20000		92.2	80-120			
Zinc	464000		ng/l	500000		92.8	80-120			
Batch B4H2703 - ICP-MS Extraction										
Blank (B4H2703-BLK1)				Prepared & Analyzed: 08/21/24						
Antimony	-5.48E-5	0.0386	ng/m³ Air							SL, U
Arsenic	-0.00237	0.00937	ng/m³ Air							U
Barium	0.00156	1.07	ng/m³ Air							U
Beryllium	-3.86E-4	0.00320	ng/m³ Air							U
Cadmium	-1.89E-4	0.0741	ng/m³ Air							U
Chromium	7.43E-4	2.21	ng/m³ Air							U
Cobalt	-3.34E-4	0.0436	ng/m³ Air							U
Copper	0.0280	2.63	ng/m³ Air							U
Lead	-1.58E-4	0.214	ng/m³ Air							U
Manganese	-0.00243	1.89	ng/m³ Air							U
Molybdenum	0.0104	0.359	ng/m³ Air							U
Nickel	0.00143	0.652	ng/m³ Air							U
Selenium	-0.00364	0.00896	ng/m³ Air							U
Thallium	2.04E-4	5.89E-4	ng/m³ Air							U
Vanadium	-0.00505	0.0529	ng/m³ Air							U
Zinc	1.07	76.8	ng/m³ Air							U
LCS (B4H2703-BS1)				Prepared & Analyzed: 08/21/24						
Antimony	0.571	0.0386	ng/m³ Air	1.3829		41.3	80-120			SL
Arsenic	2.74	0.00937	ng/m³ Air	2.7658		99.0	80-120			
Barium	28.4	1.07	ng/m³ Air	27.658		103	80-120			

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

FILE #: 4205.00.003.001
REPORTED: 08/28/24 14:58
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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 B4H2703 - ICP-MS Extraction										
LCS (B4H2703-BS1) Continued					Prepared & Analyzed: 08/21/24					
Beryllium	1.33	0.00320	ng/m³ Air	1.3829		95.9	80-120			
Cadmium	1.42	0.0741	ng/m³ Air	1.3829		103	80-120			
Chromium	15.9	2.21	ng/m³ Air	13.829		115	80-120			
Cobalt	1.34	0.0436	ng/m³ Air	1.3829		97.1	80-120			
Copper	28.9	2.63	ng/m³ Air	27.658		104	80-120			
Lead	13.8	0.214	ng/m³ Air	13.829		100	80-120			
Manganese	8.31	1.89	ng/m³ Air	8.2975		100	80-120			
Molybdenum	1.63	0.359	ng/m³ Air	1.3829		118	80-120			
Nickel	3.08	0.652	ng/m³ Air	2.7658		111	80-120			
Selenium	2.74	0.00896	ng/m³ Air	2.7658		98.9	80-120			
Thallium	0.138	5.89E-4	ng/m³ Air	0.13829		99.6	80-120			
Vanadium	2.86	0.0529	ng/m³ Air	2.7658		103	80-120			
Zinc	91.6	76.8	ng/m³ Air	82.975		110	80-120			
LCS (B4H2703-BS2)					Prepared: 08/21/24 Analyzed: 08/22/24					
Antimony	0.543	0.0386	ng/m³ Air	1.3829		39.3	80-120			SL
Arsenic	2.68	0.00937	ng/m³ Air	2.7658		97.0	80-120			
Barium	28.1	1.07	ng/m³ Air	27.658		102	80-120			
Beryllium	1.48	0.00320	ng/m³ Air	1.3829		107	80-120			
Cadmium	1.38	0.0741	ng/m³ Air	1.3829		100	80-120			
Chromium	15.7	2.21	ng/m³ Air	13.829		113	80-120			
Cobalt	1.32	0.0436	ng/m³ Air	1.3829		95.8	80-120			
Copper	28.4	2.63	ng/m³ Air	27.658		103	80-120			
Lead	13.7	0.214	ng/m³ Air	13.829		99.0	80-120			
Manganese	8.17	1.89	ng/m³ Air	8.2975		98.5	80-120			
Molybdenum	1.62	0.359	ng/m³ Air	1.3829		117	80-120			
Nickel	3.06	0.652	ng/m³ Air	2.7658		111	80-120			
Selenium	2.71	0.00896	ng/m³ Air	2.7658		98.1	80-120			
Thallium	0.136	5.89E-4	ng/m³ Air	0.13829		98.3	80-120			
Vanadium	2.80	0.0529	ng/m³ Air	2.7658		101	80-120			
Zinc	89.7	76.8	ng/m³ Air	82.975		108	80-120			
Duplicate (B4H2703-DUP1)		**Source: 4082761-21**			Prepared & Analyzed: 08/21/24					
Antimony	0.150	0.0317	ng/m³ Air		0.101			39.3	10	SL
Arsenic	0.398	0.00770	ng/m³ Air		0.355			11.5	10	
Barium	3.31	0.879	ng/m³ Air		3.31			0.00129	10	
Beryllium	0.00794	0.00263	ng/m³ Air		0.00779			2.01	10	
Cadmium	0.00940	0.0609	ng/m³ Air		ND				10	U
Chromium	1.70	1.82	ng/m³ Air		ND				10	U
Cobalt	0.220	0.0358	ng/m³ Air		0.203			8.06	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 B4H2703 - ICP-MS Extraction										
Duplicate (B4H2703-DUP1) Continued			**Source: 4082761-21**		Prepared & Analyzed: 08/21/24					
Copper	46.0	2.16	ng/m³ Air		43.8			4.86	10	
Lead	0.598	0.176	ng/m³ Air		0.554			7.63	10	
Manganese	7.15	1.55	ng/m³ Air		6.77			5.46	10	
Molybdenum	4.47	0.295	ng/m³ Air		4.27			4.59	10	
Nickel	1.01	0.535	ng/m³ Air		0.895			11.7	10	
Selenium	0.220	0.00736	ng/m³ Air		0.212			3.51	10	
Thallium	0.00122	4.84E-4	ng/m³ Air		0.00135			9.59	10	
Vanadium	1.15	0.0434	ng/m³ Air		1.08			6.34	10	
Zinc	9.13	63.1	ng/m³ Air		ND				10	U
Duplicate (B4H2703-DUP2)			**Source: 4082761-03**		Prepared: 08/21/24 Analyzed: 08/22/24					
Antimony	0.0481	0.0316	ng/m³ Air		0.0465			3.50	10	SL
Arsenic	0.172	0.00767	ng/m³ Air		0.158			8.53	10	
Barium	2.81	0.876	ng/m³ Air		2.95			4.66	10	
Beryllium	0.0259	0.00262	ng/m³ Air		0.0246			5.01	10	
Cadmium	0.00910	0.0606	ng/m³ Air		ND				10	U
Chromium	3.26	1.81	ng/m³ Air		2.54			24.8	10	
Cobalt	0.475	0.0357	ng/m³ Air		0.439			7.81	10	
Copper	44.9	2.15	ng/m³ Air		48.5			7.61	10	
Lead	0.244	0.175	ng/m³ Air		0.537			74.9	10	
Manganese	12.3	1.55	ng/m³ Air		11.7			4.46	10	
Molybdenum	2.29	0.294	ng/m³ Air		2.15			6.42	10	
Nickel	1.94	0.534	ng/m³ Air		1.15			51.2	10	
Selenium	0.168	0.00733	ng/m³ Air		0.150			10.9	10	
Thallium	9.19E-4	4.82E-4	ng/m³ Air		8.97E-4			2.47	10	
Vanadium	1.25	0.0433	ng/m³ Air		1.19			4.66	10	
Zinc	10.5	62.9	ng/m³ Air		ND				10	U
Duplicate (B4H2703-DUP3)			**Source: 4082761-15**		Prepared: 08/21/24 Analyzed: 08/22/24					
Antimony	0.0344	0.0333	ng/m³ Air		0.0340			1.19	10	SL
Arsenic	0.316	0.00809	ng/m³ Air		0.315			0.249	10	
Barium	2.34	0.924	ng/m³ Air		2.33			0.768	10	
Beryllium	0.00661	0.00276	ng/m³ Air		0.00630			4.75	10	
Cadmium	0.0138	0.0640	ng/m³ Air		ND				10	U
Chromium	2.26	1.91	ng/m³ Air		2.26			0.275	10	
Cobalt	0.243	0.0376	ng/m³ Air		0.243			0.265	10	
Copper	212	2.27	ng/m³ Air		211			0.271	10	
Lead	0.237	0.185	ng/m³ Air		0.237			0.0381	10	
Manganese	6.31	1.63	ng/m³ Air		6.30			0.0477	10	
Molybdenum	14.2	0.310	ng/m³ Air		14.1			0.985	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 B4H2703 - ICP-MS Extraction										
Duplicate (B4H2703-DUP3) Continued		**Source: 4082761-15**		Prepared: 08/21/24 Analyzed: 08/22/24						
Nickel	0.800	0.563	ng/m³ Air		0.798			0.211	10	
Selenium	0.171	0.00773	ng/m³ Air		0.173			0.679	10	
Thallium	0.00137	5.08E-4	ng/m³ Air		0.00137			0.361	10	
Vanadium	0.879	0.0457	ng/m³ Air		0.872			0.810	10	
Zinc	7.08	66.3	ng/m³ Air		ND				10	U
Duplicate (B4H2703-DUP4)		**Source: 4082761-27**		Prepared: 08/21/24 Analyzed: 08/22/24						
Antimony	0.141	0.0396	ng/m³ Air		0.142			0.660	10	SL
Arsenic	0.460	0.00960	ng/m³ Air		0.460			0.137	10	
Barium	4.52	1.10	ng/m³ Air		4.58			1.36	10	
Beryllium	0.0137	0.00328	ng/m³ Air		0.0137			0.441	10	
Cadmium	0.0233	0.0759	ng/m³ Air		ND				10	U
Chromium	5.34	2.26	ng/m³ Air		5.40			1.24	10	
Cobalt	0.524	0.0447	ng/m³ Air		0.530			1.14	10	
Copper	41.2	2.70	ng/m³ Air		41.4			0.442	10	
Lead	0.639	0.219	ng/m³ Air		0.644			0.823	10	
Manganese	15.3	1.94	ng/m³ Air		15.4			0.509	10	
Molybdenum	2.39	0.368	ng/m³ Air		2.39			0.314	10	
Nickel	3.09	0.668	ng/m³ Air		3.11			0.667	10	
Selenium	0.207	0.00918	ng/m³ Air		0.210			1.25	10	
Thallium	0.00190	6.04E-4	ng/m³ Air		0.00197			3.59	10	
Vanadium	1.40	0.0542	ng/m³ Air		1.42			1.82	10	
Zinc	15.5	78.7	ng/m³ Air		ND				10	U
Matrix Spike (B4H2703-MS1)		**Source: 4082761-21**		Prepared & Analyzed: 08/21/24						
Antimony	0.845	0.0317	ng/m³ Air	1.1358	0.101	65.5	80-120			SL
Arsenic	2.57	0.00770	ng/m³ Air	2.2715	0.355	97.4	80-120			
Barium	26.0	0.879	ng/m³ Air	22.715	3.31	99.7	80-120			
Beryllium	1.12	0.00263	ng/m³ Air	1.1358	0.00779	97.5	80-120			
Cadmium	1.15	0.0609	ng/m³ Air	1.1358	ND	101	80-120			
Chromium	12.8	1.82	ng/m³ Air	11.358	ND	112	80-120			
Cobalt	1.28	0.0358	ng/m³ Air	1.1358	0.203	95.1	80-120			
Copper	70.2	2.16	ng/m³ Air	22.715	43.8	116	80-120			
Lead	12.0	0.176	ng/m³ Air	11.358	0.554	101	80-120			
Manganese	13.4	1.55	ng/m³ Air	6.8146	6.77	96.9	80-120			
Molybdenum	5.55	0.295	ng/m³ Air	1.1358	4.27	113	80-120			
Nickel	3.16	0.535	ng/m³ Air	2.2715	0.895	99.9	80-120			
Selenium	2.42	0.00736	ng/m³ Air	2.2715	0.212	97.1	80-120			
Thallium	0.112	4.84E-4	ng/m³ Air	0.11358	0.00135	97.4	80-120			
Vanadium	3.36	0.0434	ng/m³ Air	2.2715	1.08	100	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 B4H2703 - ICP-MS Extraction										
Matrix Spike (B4H2703-MS1) Continued Source: 4082761-21 Prepared & Analyzed: 08/21/24										
Zinc	77.1	63.1	ng/m³ Air	68.146	ND	113	80-120			
Matrix Spike (B4H2703-MS2) Source: 4082761-03 Prepared: 08/21/24 Analyzed: 08/22/24										
Antimony	0.643	0.0316	ng/m³ Air	1.1319	0.0465	52.7	80-120			SL
Arsenic	2.27	0.00767	ng/m³ Air	2.2638	0.158	93.3	80-120			
Barium	25.1	0.876	ng/m³ Air	22.638	2.95	98.1	80-120			
Beryllium	1.09	0.00262	ng/m³ Air	1.1319	0.0246	94.2	80-120			
Cadmium	1.12	0.0606	ng/m³ Air	1.1319	ND	99.1	80-120			
Chromium	13.6	1.81	ng/m³ Air	11.319	2.54	97.6	80-120			
Cobalt	1.47	0.0357	ng/m³ Air	1.1319	0.439	91.2	80-120			
Copper	64.1	2.15	ng/m³ Air	22.638	48.5	69.0	80-120			QM-07
Lead	11.4	0.175	ng/m³ Air	11.319	0.537	96.0	80-120			
Manganese	17.5	1.55	ng/m³ Air	6.7913	11.7	85.6	80-120			
Molybdenum	3.17	0.294	ng/m³ Air	1.1319	2.15	90.5	80-120			
Nickel	3.34	0.534	ng/m³ Air	2.2638	1.15	96.8	80-120			
Selenium	2.35	0.00733	ng/m³ Air	2.2638	0.150	97.3	80-120			
Thallium	0.109	4.82E-4	ng/m³ Air	0.11319	8.97E-4	95.1	80-120			
Vanadium	3.40	0.0433	ng/m³ Air	2.2638	1.19	97.6	80-120			
Zinc	76.6	62.9	ng/m³ Air	67.913	ND	113	80-120			
Matrix Spike Dup (B4H2703-MSD1) Source: 4082761-21 Prepared & Analyzed: 08/21/24										
Antimony	0.840	0.0317	ng/m³ Air	1.1358	0.101	65.1	80-120	0.582	20	SL
Arsenic	2.54	0.00770	ng/m³ Air	2.2715	0.355	96.4	80-120	0.905	20	
Barium	25.7	0.879	ng/m³ Air	22.715	3.31	98.7	80-120	0.938	20	
Beryllium	1.13	0.00263	ng/m³ Air	1.1358	0.00779	98.7	80-120	1.24	20	
Cadmium	1.17	0.0609	ng/m³ Air	1.1358	ND	103	80-120	1.40	20	
Chromium	12.6	1.82	ng/m³ Air	11.358	ND	111	80-120	1.13	20	
Cobalt	1.26	0.0358	ng/m³ Air	1.1358	0.203	93.3	80-120	1.63	20	
Copper	72.5	2.16	ng/m³ Air	22.715	43.8	127	80-120	3.32	20	QM-07
Lead	12.0	0.176	ng/m³ Air	11.358	0.554	101	80-120	0.194	20	
Manganese	12.8	1.55	ng/m³ Air	6.8146	6.77	89.0	80-120	4.14	20	
Molybdenum	5.84	0.295	ng/m³ Air	1.1358	4.27	139	80-120	5.17	20	QM-07
Nickel	3.10	0.535	ng/m³ Air	2.2715	0.895	97.0	80-120	2.12	20	
Selenium	2.45	0.00736	ng/m³ Air	2.2715	0.212	98.4	80-120	1.18	20	
Thallium	0.111	4.84E-4	ng/m³ Air	0.11358	0.00135	96.7	80-120	0.722	20	
Vanadium	3.30	0.0434	ng/m³ Air	2.2715	1.08	97.9	80-120	1.68	20	
Zinc	76.1	63.1	ng/m³ Air	68.146	ND	112	80-120	1.23	20	
Matrix Spike Dup (B4H2703-MSD2) Source: 4082761-03 Prepared: 08/21/24 Analyzed: 08/22/24										
Antimony	0.625	0.0316	ng/m³ Air	1.1319	0.0465	51.1	80-120	2.72	20	SL
Arsenic	2.30	0.00767	ng/m³ Air	2.2638	0.158	94.4	80-120	1.10	20	

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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4H2703 - ICP-MS Extraction										
Matrix Spike Dup (B4H2703-MSD2) Conti				**Source: 4082761-03**		Prepared: 08/21/24		Analyzed: 08/22/24		
Barium	24.9	0.876	ng/m³ Air	22.638	2.95	96.9	80-120	1.00	20	
Beryllium	1.14	0.00262	ng/m³ Air	1.1319	0.0246	98.3	80-120	4.24	20	
Cadmium	1.14	0.0606	ng/m³ Air	1.1319	ND	100	80-120	1.26	20	
Chromium	13.6	1.81	ng/m³ Air	11.319	2.54	98.1	80-120	0.354	20	
Cobalt	1.47	0.0357	ng/m³ Air	1.1319	0.439	90.8	80-120	0.347	20	
Copper	61.5	2.15	ng/m³ Air	22.638	48.5	57.4	80-120	4.20	20	QM-07
Lead	11.4	0.175	ng/m³ Air	11.319	0.537	96.3	80-120	0.275	20	
Manganese	17.6	1.55	ng/m³ Air	6.7913	11.7	87.0	80-120	0.527	20	
Molybdenum	3.03	0.294	ng/m³ Air	1.1319	2.15	77.8	80-120	4.65	20	QM-07
Nickel	3.22	0.534	ng/m³ Air	2.2638	1.15	91.5	80-120	3.70	20	
Selenium	2.29	0.00733	ng/m³ Air	2.2638	0.150	94.7	80-120	2.47	20	
Thallium	0.110	4.82E-4	ng/m³ Air	0.11319	8.97E-4	96.4	80-120	1.36	20	
Vanadium	3.40	0.0433	ng/m³ Air	2.2638	1.19	97.3	80-120	0.197	20	
Zinc	78.7	62.9	ng/m³ Air	67.913	ND	116	80-120	2.63	20	
Post Spike (B4H2703-PS1)				**Source: 4082761-21**		Prepared & Analyzed: 08/21/24				
Antimony	0.326	0.0317	ng/m³ Air	0.22715	0.101	99.3	75-125			SL
Arsenic	1.41	0.00770	ng/m³ Air	1.1358	0.355	92.9	75-125			
Barium	5.48	0.879	ng/m³ Air	2.2715	3.31	95.2	75-125			
Beryllium	0.227	0.00263	ng/m³ Air	0.22715	0.00779	96.6	75-125			
Cadmium	0.129	0.0609	ng/m³ Air	0.11358	ND	113	75-125			
Chromium	2.60	1.82	ng/m³ Air	1.1358	ND	229	75-125			
Cobalt	0.415	0.0358	ng/m³ Air	0.22715	0.203	93.6	75-125			
Copper	55.6	2.16	ng/m³ Air	11.358	43.8	104	75-125			
Lead	23.1	0.176	ng/m³ Air	22.715	0.554	99.3	75-125			
Manganese	8.85	1.55	ng/m³ Air	2.2715	6.77	91.6	75-125			
Molybdenum	5.36	0.295	ng/m³ Air	1.1358	4.27	96.7	75-125			
Nickel	3.06	0.535	ng/m³ Air	2.2715	0.895	95.5	75-125			
Selenium	1.31	0.00736	ng/m³ Air	1.1358	0.212	96.3	75-125			
Thallium	0.0558	4.84E-4	ng/m³ Air	5.6788E-2	0.00135	96.0	75-125			
Vanadium	2.15	0.0434	ng/m³ Air	1.1358	1.08	94.7	75-125			
Zinc	31.1	63.1	ng/m³ Air	22.715	ND		75-125			U
Post Spike (B4H2703-PS2)				**Source: 4082761-03**		Prepared: 08/21/24		Analyzed: 08/22/24		
Antimony	0.271	0.0316	ng/m³ Air	0.22638	0.0465	99.0	75-125			SL
Arsenic	1.21	0.00767	ng/m³ Air	1.1319	0.158	93.3	75-125			
Barium	5.14	0.876	ng/m³ Air	2.2638	2.95	97.0	75-125			
Beryllium	0.228	0.00262	ng/m³ Air	0.22638	0.0246	90.0	75-125			
Cadmium	0.121	0.0606	ng/m³ Air	0.11319	ND	107	75-125			
Chromium	3.65	1.81	ng/m³ Air	1.1319	2.54	98.1	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: 08/28/24 14:58
SUBMITTED: 08/19/24
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 B4H2703 - ICP-MS Extraction										
Post Spike (B4H2703-PS2) Continued		**Source: 4082761-03**		Prepared: 08/21/24 Analyzed: 08/22/24						
Cobalt	0.657	0.0357	ng/m³ Air	0.22638	0.439	96.1	75-125			
Copper	60.4	2.15	ng/m³ Air	11.319	48.5	106	75-125			
Lead	23.1	0.175	ng/m³ Air	22.638	0.537	99.5	75-125			
Manganese	13.9	1.55	ng/m³ Air	2.2638	11.7	94.8	75-125			
Molybdenum	3.22	0.294	ng/m³ Air	1.1319	2.15	94.8	75-125			
Nickel	3.34	0.534	ng/m³ Air	2.2638	1.15	96.9	75-125			
Selenium	1.28	0.00733	ng/m³ Air	1.1319	0.150	99.4	75-125			
Thallium	0.0550	4.82E-4	ng/m³ Air	5.6594E-2	8.97E-4	95.5	75-125			
Vanadium	2.28	0.0433	ng/m³ Air	1.1319	1.19	96.2	75-125			
Zinc	34.3	62.9	ng/m³ Air	22.638	ND		75-125			U
Dilution Check (B4H2703-SRL1)		**Source: 4082761-21**		Prepared & Analyzed: 08/21/24						
Antimony	0.0979	0.0317	ng/m³ Air		0.101			2.81	10	SL
Arsenic	0.359	0.00770	ng/m³ Air		0.355			1.23	10	
Barium	3.32	0.879	ng/m³ Air		3.31			0.280	10	
Beryllium	0.00642	0.00263	ng/m³ Air		0.00779			19.2	10	
Cadmium	0.0191	0.0609	ng/m³ Air		ND				10	U
Chromium	1.55	1.82	ng/m³ Air		ND				10	U
Cobalt	0.211	0.0358	ng/m³ Air		0.203			3.78	10	
Copper	45.6	2.16	ng/m³ Air		43.8			4.03	10	
Lead	0.548	0.176	ng/m³ Air		0.554			1.06	10	
Manganese	7.02	1.55	ng/m³ Air		6.77			3.62	10	
Molybdenum	4.28	0.295	ng/m³ Air		4.27			0.297	10	
Nickel	0.912	0.535	ng/m³ Air		0.895			1.97	10	
Selenium	0.215	0.00736	ng/m³ Air		0.212			1.42	10	
Thallium	0.00337	4.84E-4	ng/m³ Air		0.00135			85.9	10	
Vanadium	1.11	0.0434	ng/m³ Air		1.08			2.50	10	
Zinc	9.37	63.1	ng/m³ Air		ND				10	U
Dilution Check (B4H2703-SRL2)		**Source: 4082761-03**		Prepared: 08/21/24 Analyzed: 08/22/24						
Antimony	0.0469	0.0316	ng/m³ Air		0.0465			0.806	10	SL
Arsenic	0.152	0.00767	ng/m³ Air		0.158			3.68	10	
Barium	3.06	0.876	ng/m³ Air		2.95			3.71	10	
Beryllium	0.0223	0.00262	ng/m³ Air		0.0246			9.70	10	
Cadmium	0.00860	0.0606	ng/m³ Air		ND				10	U
Chromium	2.62	1.81	ng/m³ Air		2.54			2.87	10	
Cobalt	0.454	0.0357	ng/m³ Air		0.439			3.27	10	
Copper	49.9	2.15	ng/m³ Air		48.5			2.89	10	
Lead	0.528	0.175	ng/m³ Air		0.537			1.62	10	
Manganese	11.9	1.55	ng/m³ Air		11.7			1.65	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 B4H2703 - ICP-MS Extraction										
Dilution Check (B4H2703-SRL2) ContinueSource: 4082761-03 Prepared: 08/21/24 Analyzed: 08/22/24										
Molybdenum	2.28	0.294	ng/m³ Air		2.15			6.21	10	
Nickel	1.17	0.534	ng/m³ Air		1.15			1.75	10	
Selenium	0.147	0.00733	ng/m³ Air		0.150			2.25	10	
Thallium	0.00114	4.82E-4	ng/m³ Air		8.97E-4			23.9	10	
Vanadium	1.24	0.0433	ng/m³ Air		1.19			3.90	10	
Zinc	12.0	62.9	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.
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.