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

September 26 through October 2, 2024
[Report Updated: November 22, 2024]

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

Particulate monitoring and air sampling occurred from September 26 through October 2, 2024, at the community locations listed below and shown on **Figure 1.**

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

Real-time air quality monitoring for particulate matter was collected at each community location over a 24-hour period each day in accordance with the CAMSP. Ambient air monitoring was performed to assess the presence of airborne particulates with a particle size diameter of 10 micrometers (µm), which is the size that is recognized as being small enough to be inhaled into a person's lungs. This particle size diameter is recognized for health evaluations and is identified as "PM_{10}". Monitoring for PM_{10} was conducted 24 hours a day, 7 days a week from September 26 through October 2 at each of the community locations. Ambient air monitoring results were compared to the National Ambient Air Quality Standard (NAAQS) for PM_{10}, 24-hour time-weighted average of 150 micrograms per cubic meter (µg/m^3), which was selected as the screening level for this activity.

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

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

Air Monitoring Results

In addition to the air sampling activities, real-time PM_{10} concentrations were collected at each of the four monitoring locations throughout this reporting period. Monitoring was conducted 24 hours a day at each station. None of the PM_{10} monitoring results exceeded the 150 µg/m^3 screening level established in the CAMSP, as shown in **Table 1**.

Air Sampling Results

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

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

- WW Pump Station #4 on September 27
- Lahaina Recreational Center on September 27

Gypsum is a common material used in drywall, plaster, and cement, so its presence in the sample filters likely resulted from debris removal operations or other disturbances of built-environment fire debris. The presence of gypsum fibers in the samples was not sufficient to obscure asbestos analyses; nor did this pose a health and safety concern. Occupational health exposure thresholds for gypsum are 5 milligrams per cubic meter (mg/m^3) for respirable dust, and 10 mg/m^3 and 15 mg/m^3 for total dust (both as time-weighted averages), specified by the National Institute for Occupational Safety and Health (NIOSH) and the Occupational Safety and Health Administration (OSHA). While total dust sampling was not performed, results of size-discriminated particulate sampling (PM_{10}) at these locations did not approach these thresholds and are orders of magnitude less than occupational gypsum exposure criteria.

The heavy metal sample collected on September 27, 2024 from Lahaina Recreational Center (AM-07) showed an exceedance of nickel with a concentration of 0.0219 $\mu g/m^3$ (SSAL 0.02 $\mu g/m^3$). This result was obtained from a sample that was collected over an approximate 24-hour sampling period between September 26 and September 27, 2024. The average windspeed at this location during the sampling period was 1.4 miles per hour (mph) with gusts up to 4.1 mph, and generally originating from a southeast direction. The wind direction shifted to be out of the east-northeast at approximately 20:00 on September 26through 07:00 on September 27.

No USACE crews or any other active crews were observed working near the air monitoring and sampling station at Lahaina Recreational Center (AM-07) station on September 26. As of September 18, the silt fencing that originally provided a barrier around the station was removed around the area. Field teams observed visible dust throughout the entire area on September 26. The area located around the Lahaina Recreational Center is surrounded by dirt roads. No water trucks have been observed spraying the roadways in the area. Dirt and dust located around the dirt roads in the area, and the removal of the silt fence barrier may have impacted the air monitoring and sampling station. Other general contributing factors which may have contributed to the nickel exceedance include grinding/cutting any metal construction materials, use of fertilizers, burning of waste, and tobacco smoke.

For all other heavy metals, low levels, 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 1.1 mph and were generally from a southeast direction. **Table 3** summarizes the collected meteorological data**.**

Quality Control Summary

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

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

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

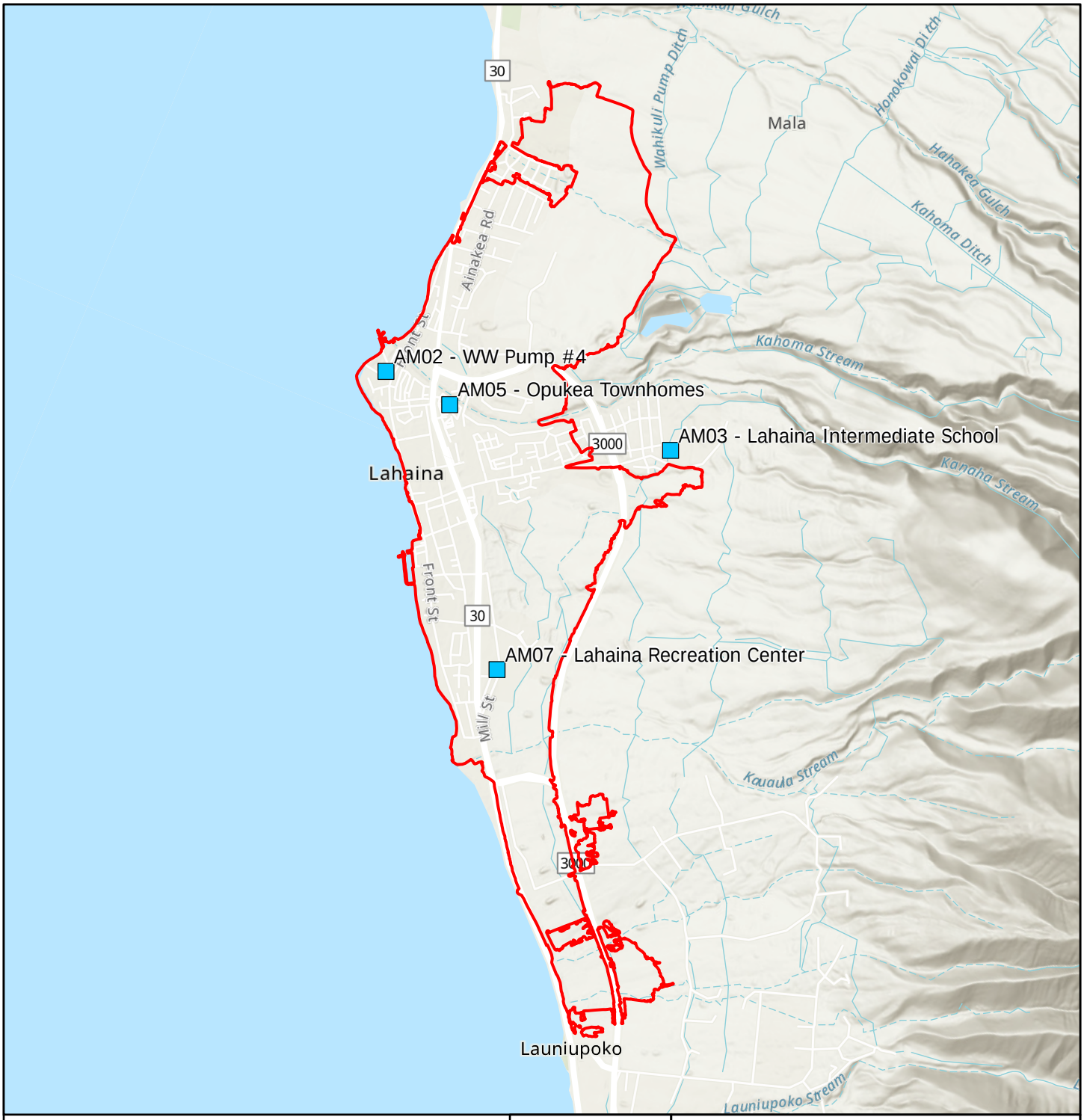
Sampling for metals occurred using Tisch Environmental High Volume Air Samplers (or equivalent) in accordance with the following methods:

- EPA Compendium Method IO-2.1, Sampling of Ambient Air for Total Suspended Particulate Matter (SPM) and for PM_{10} by Use of a High Volume (HV) Sampler
- EPA Compendium Method IO-3.5: Compendium of Methods for Determination of Inorganic Compounds in Ambient Air: Determination of Metals in Ambient Particulate Matter Via Inductively Coupled Plasma/Mass Spectrometry (ICP/MS) EPA/625/R-96/010a
- EPA 40 *Code of Federal Regulations* (CFR) Part 50, Method for Determination of Lead in Total Suspended Particulate Matter
- EPA 40 CFR Part 58, Appendix E: Probe and Monitoring Path Siting Criteria for Ambient Air Quality Monitoring
- American Society for Testing and Materials (ASTM) SOPs for Lead Monitoring by Use of a Total Suspended Particulate (TSP) High Volume Sampler

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

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

Attachments



Air Sampling Locations

Lahaina Fire Perimeter

N

0 0.3 0.6
Miles

TETRA TECH

Figure 1
Air Sampling Locations

Hawaii DOH
2023 Lahaina Wildfire

Basemap: ESRI ArcGIS World Street Map

Table 1
State of Hawaii, Department of Health, Clean Air Branch
Particulate Monitoring Results for PM_{10}
Maui Wildfires, Lahaina
September 26 through October 2, 2024
[Report Updated: November 22, 2024]

Screening Level		TWA Results 150 ($\mu g/m^3$)
9/26/2024	Opukea Townhomes (AM-05)	5.8
	WW Pump Station #4 (AM-02)	5.9
	Lahaina Intermediate School (AM-03)	37
	Lahaina Recreation Center (AM-07)	4.1
9/27/2024	Opukea Townhomes (AM-05)	7.6
	WW Pump Station #4 (AM-02)	8.5
	Lahaina Intermediate School (AM-03)	31
	Lahaina Recreation Center (AM-07)	83
9/28/2024	Opukea Townhomes (AM-05)	8.9
	WW Pump Station #4 (AM-02)	7.7
	Lahaina Intermediate School (AM-03)	39
	Lahaina Recreation Center (AM-07)	5.5
9/29/2024	Opukea Townhomes (AM-05)	6.7
	WW Pump Station #4 (AM-02)	5.6
	Lahaina Intermediate School (AM-03)	30
	Lahaina Recreation Center (AM-07)	4.1
9/30/2024	Opukea Townhomes (AM-05)	7.0
	WW Pump Station #4 (AM-02)	7.6
	Lahaina Intermediate School (AM-03)	29
	Lahaina Recreation Center (AM-07)	100
10/1/2024	Opukea Townhomes (AM-05)	8.3
	WW Pump Station #4 (AM-02)	7.9
	Lahaina Intermediate School (AM-03)	35
	Lahaina Recreation Center (AM-07)	5.4
10/2/2024	Opukea Townhomes (AM-05)	8.7
	WW Pump Station #4 (AM-02)	9.0
	Lahaina Intermediate School (AM-03)	123
	Lahaina Recreation Center (AM-07)	96

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
September 26 through October 2, 2024
[Report Updated: November 22, 2024]

Analyte		Asbestos	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Manganese	Molybdenum	Nickel	Selenium	Thallium	Vanadium	Zinc
Units*		s/cc	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³
Site Screening Action Level		0.003 [1]	0.7	0.05	1.2	0.05	0.02	12	0.01	240	1.5	0.12	4.8	0.02	48	24	0.24	1200
9/26/2024	Opukea Townhomes (AM-05)	<0.0024	0.0000751	0.000220	0.00377	0.0000102	ND	0.00293	0.000375	0.0607	0.000487	0.0106	0.00300	0.00128	0.000181	0.000000937	0.00120	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.000137	0.000273	0.00571	0.0000147	ND	0.00339	0.000533	0.0318	0.000798	0.0163	0.00176	0.00156	0.000205	0.00000106	0.00171	0.0859
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000450	0.000183	0.00345	0.0000472	ND	0.00333	0.000633	0.0378	0.000274	0.0147	0.00216	0.00154	0.000199	0.000000978	0.00143	ND
	Lahaina Recreation Center (AM-07)	<0.0024	0.0000656	0.000536	0.00255	0.00000764	ND	0.00294	0.000386	0.0220	0.000250	0.0106	0.00151	0.00133	0.000154	0.000000803	0.000959	ND
9/27/2024	Opukea Townhomes (AM-05)	<0.0024	0.0000770	0.000388	0.00376	0.0000106	0.0000890	0.00260	0.000374	0.0535	0.000677	0.0116	0.00246	0.00124	0.000183	0.00000109	0.00139	ND
	WW Pump Station #4 (AM-02)	<0.0027	0.0000944	0.000311	0.00626	0.0000204	ND	0.00437	0.000867	0.0275	0.000648	0.0215	0.00146	0.00258	0.000215	0.00000122	0.00283	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000326	0.000131	0.00269	0.0000199	ND	0.00266	0.000394	0.0394	0.000212	0.0108	0.00244	0.00146	0.000160	0.000000775	0.00118	ND
	Lahaina Recreation Center (AM-07)	<0.0024	0.0000943	0.000224	0.00296	0.0000133	ND	0.0453	0.000985	0.0387	0.000329	0.0186	0.00319	**0.0219**	0.000205	0.00000115	0.00159	ND
9/28/2024	Opukea Townhomes (AM-05)	<0.0027	0.0000777	0.000249	0.00338	0.00000770	ND	0.00238	0.000320	0.0376	0.000434	0.00919	0.00190	0.00121	0.000199	0.00000105	0.00124	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.000101	0.000245	0.00478	0.0000121	ND	0.00273	0.000439	0.0197	0.000671	0.0131	0.00122	0.00137	0.000229	0.00000123	0.00170	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000409	0.000352	0.00658	0.0000979	ND	0.00709	0.00149	0.0394	0.000429	0.0357	0.00229	0.00355	0.000339	0.00000232	0.00402	ND
	Lahaina Recreation Center (AM-07)	<0.0024	0.0000633	0.000261	0.00235	0.00000734	ND	0.00424	0.000292	0.0285	0.000262	0.00889	0.00207	0.00226	0.000177	0.00000104	0.000997	ND
9/29/2024	Opukea Townhomes (AM-05)	<0.0024	0.0000484	0.000154	0.00294	0.00000812	ND	0.00274	0.000268	0.0505	0.000339	0.00847	0.00280	0.00112	0.000181	0.000000844	0.00116	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.000106	0.000297	0.00451	0.00000995	ND	0.00235	0.000332	0.0214	0.000529	0.0107	0.00145	0.00107	0.000214	0.000000985	0.00140	ND
	Lahaina Intermediate School (AM-03)	<0.0024	ND	0.000121	0.00231	0.0000140	ND	0.00276	0.000336	0.0390	0.000225	0.00834	0.00223	0.00114	0.000141	0.000000665	0.00103	ND
	Lahaina Recreation Center (AM-07)	<0.0024	0.0000475	0.000129	0.00197	0.00000699	ND	0.00948	0.000367	0.0267	0.000193	0.00870	0.00162	0.00459	0.000149	0.000000685	0.00102	ND
9/30/2024	Opukea Townhomes (AM-05)	<0.0024	0.0000976	0.000239	0.00323	0.00000644	0.000197	0.00202	0.000212	0.0522	0.000583	0.00643	0.00266	0.000836	0.000145	0.000000935	0.000907	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.0000889	0.000311	0.00467	0.0000130	ND	0.00238	0.000383	0.0260	0.00115	0.0120	0.00152	0.00119	0.000166	0.000000704	0.00150	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000382	0.000121	0.00244	0.0000230	ND	0.00263	0.000358	0.0418	0.000240	0.00894	0.00230	0.00118	0.000117	0.000000732	0.000990	ND
	Lahaina Recreation Center (AM-07)	<0.0024	0.0000673	0.000186	0.00393	0.0000195	ND	0.00456	0.000472	0.0341	0.000250	0.0151	0.00185	0.00343	0.000162	0.00000116	0.00120	ND
10/1/2024	Opukea Townhomes (AM-05)	<0.0024	0.0000806	0.000242	0.00309	0.00000799	0.0000869	0.00232	0.000303	0.0493	0.000582	0.00900	0.00260	0.00126	0.000189	0.00000083	0.00113	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.000114	0.000263	0.00417	0.0000116	ND	0.00242	0.000417	0.0180	0.000566	0.0121	0.00123	0.00130	0.000205	0.000000672	0.00157	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000447	0.000160	0.00317	0.0000339	ND	0.00328	0.000624	0.0446	0.000255	0.0137	0.00229	0.00179	0.000188	0.000000872	0.00148	ND
	Lahaina Recreation Center (AM-07)	<0.0024	0.0000689	0.000179	0.00234	0.00000770	ND	0.0141	0.000450	0.0312	0.000265	0.0107	0.00228	0.00627	0.000179	0.000000751	0.00108	ND
10/2/2024	Opukea Townhomes (AM-05)	<0.0024	0.000118	0.000293	0.00462	0.0000117	ND	0.00628	0.000620	0.0510	0.000689	0.0151	0.00253	0.00637	0.000206	0.00000101	0.00184	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.000179	0.000654	0.00630	0.0000152	ND	0.00311	0.000647	0.0248	0.000649	0.0171	0.00131	0.00220	0.000240	0.000000925	0.00239	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000613	0.000172	0.00365	0.0000228	ND	0.00314	0.000593	0.0596	0.000361	0.0172	0.00276	0.00376	0.000202	0.00000102	0.00175	ND
	Lahaina Recreation Center (AM-07)	<0.0024	0.000112	0.000194	0.00319	0.0000108	ND	0.00212	0.000351	0.0389	0.000230	0.0120	0.00229	0.00148	0.000192	0.000000947	0.00128	ND
95% Upper Confidence Limit[2]		NA	0.0000900	0.000290	0.00420	0.0000210	0.000969	0.00608	0.000570	0.0422	0.000540	0.0148	0.00233	0.00347	0.000200	0.00000110	0.00168	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
Screening Level Exceedance

Table 3
State of Hawaii, Department of Health, Clean Air Branch
Averaged Meteorological Data
Maui Wildfires, Lahaina
September 26 through October 2, 2024
[Report Updated: November 22, 2024]

Date	Station ID	Weather Station Name	Wind Speed (mph)	Wind Direction (angle)	Temperature (°F)	Rel Humidity (%)	Baro Pressure (mBar)
9/26/2024	AM-02	WW Pump Station #4	1.0	SSE	81	67	762.5
9/26/2024	AM-03	Lahaina Intermediate School	1.0	ESE	80	65	753.1
9/26/2024	AM-05	Opukea Townhomes	1.2	SSE	84	63	761.9
9/26/2024	AM-07	Lahaina Recreational Center	1.4	SE	80	68	761.8
9/27/2024	AM-02	WW Pump Station #4	0.9	S	81	68	762.6
9/27/2024	AM-03	Lahaina Intermediate School	1.0	ESE	80	67	753.3
9/27/2024	AM-05	Opukea Townhomes	1.1	SE	83	65	762.1
9/27/2024	AM-07	Lahaina Recreational Center	1.3	SSE	79	70	761.9
9/28/2024	AM-02	WW Pump Station #4	1.1	SSE	81	65	762.4
9/28/2024	AM-03	Lahaina Intermediate School	1.0	ESE	80	63	753.0
9/28/2024	AM-05	Opukea Townhomes	1.3	SE	83	62	761.8
9/28/2024	AM-07	Lahaina Recreational Center	1.4	SE	79	66	761.7
9/29/2024	AM-02	WW Pump Station #4	0.9	S	80	66	762.0
9/29/2024	AM-03	Lahaina Intermediate School	1.0	ESE	79	64	752.6
9/29/2024	AM-05	Opukea Townhomes	1.1	SE	83	62	761.4
9/29/2024	AM-07	Lahaina Recreational Center	1.4	SSE	79	66	761.3
9/30/2024	AM-02	WW Pump Station #4	0.9	S	81	67	761.5
9/30/2024	AM-03	Lahaina Intermediate School	0.9	SE	80	65	752.1
9/30/2024	AM-05	Opukea Townhomes	1.0	SSE	83	64	760.9
9/30/2024	AM-07	Lahaina Recreational Center	1.2	SSE	80	68	760.8
10/1/2024	AM-02	WW Pump Station #4	0.9	S	81	69	762.2
10/1/2024	AM-03	Lahaina Intermediate School	1.1	SE	80	66	752.8
10/1/2024	AM-05	Opukea Townhomes	1.2	SE	84	65	761.5
10/1/2024	AM-07	Lahaina Recreational Center	1.3	SSE	80	69	761.4
10/2/2024	AM-02	WW Pump Station #4	0.9	S	82	69	762.0
10/2/2024	AM-03	Lahaina Intermediate School	1.3	ESE	80	64	752.6
10/2/2024	AM-05	Opukea Townhomes	1.3	SE	84	64	761.3
10/2/2024	AM-07	Lahaina Recreational Center	1.4	SSE	80	69	761.2

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

Appendix 1

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

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

EMSL Order:	042420429
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:	10/02/2024 09:30 AM
Analysis Date:	10/03/2024
Report Date:	10/07/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM05-092624-AB**		**Sample Description:**	**DL275109**
EMSL Sample Number:	042420429-0001		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7192.3
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):	0.0127
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	5			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**

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

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**

Comment

Robyn Ray
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EMSL Order ID: 042420429
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: 042420429-0001 **Customer Sample:** MFL-AM05-092624-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	I4	None Detected									
B1	E7	None Detected									
B1	A4	None Detected									
B2	H9	None Detected									
B2	D6	None Detected									

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

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EMSL Order:	042420429
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:	10/02/2024 09:30 AM
Analysis Date:	10/03/2024
Report Date:	10/07/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-092624-AB**		**Sample Description:**	**DL274964**
EMSL Sample Number:	042420429-0002		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7185.3
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):	0.0127
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	6			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**

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

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**

Comment

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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: 042420429-0002 **Customer Sample:** MFL-AM02-092624-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	E9	None Detected									
B5	J4	None Detected									
B6	H8	None Detected									
B6	C6	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:	10/02/2024 09:30 AM
Analysis Date:	10/03/2024
Report Date:	10/07/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM03-092624-AB** **Sample Description: DL275029**

EMSL Sample Number:	042420429-0003		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7214.6
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):	0.0127
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	6			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**

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

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**

Comment

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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: 042420429-0003 **Customer Sample:** MFL-AM03-092624-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	A4	None Detected									
C1	D7	None Detected									
C1	H6	None Detected									
C2	E7	None Detected									
C2	I7	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:	10/02/2024 09:30 AM
Analysis Date:	10/03/2024
Report Date:	10/07/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM07-092624-AB**	**Sample Description:**	**DL274943**
EMSL Sample Number:	042420429-0004	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L) :	7206.7
Aspect ratio for fiber definition:	3:1	Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5	Grid Opening Area (mm^2):	0.0127
Chi^2 Test for Random Distribution on Filter:	N/A *(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD	Analyst:	G.Barry
Minimum Level of analysis (amphibole):	ADX		
Estimated Particulate Loading on Filter %:	7		
Target Analytical Sensitivity (Structures/cc):	0.001		
Analytical Sensitivity (Structures/cc):	**0.0008**	**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**

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

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**

Comment

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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: 042420429-0004 **Customer Sample:** MFL-AM07-092624-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
C5	A8	None Detected									
C5	E5	None Detected									
C5	I3	None Detected									
C6	G5	None Detected									
C6	C3	None Detected									

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

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EMSL Order:	042420429
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:	10/02/2024 09:30 AM
Analysis Date:	10/03/2024
Report Date:	10/07/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-FB01-092624-AB**		**Sample Description:**	**DL274882**
EMSL Sample Number:	042420429-0005		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0127
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**N/A**		**Limit of Detection (Structures/cc):**	**N/A**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	95 % Confidence Interval (S/cc) Upper
Total Chrysotile	**CD**	**0**	**0**	**< 23.54**			
Total Amphibole	**ADX**	**0**	**0**	**< 23.54**			
Actinolite	ADX	0	0	< 23.54			
Amosite	ADX	0	0	< 23.54			
Anthophyllite	ADX	0	0	< 23.54			
Crocidolite	ADX	0	0	< 23.54			
Tremolite	ADX	0	0	< 23.54			
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.54**			
Other Minerals	-	0	0	< 23.54			
Total All Structures	**-**	**0**	**0**	**< 23.54**			

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

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	95 % Confidence Interval (F/cc) Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 23.54**			
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.54**			
Actinolite	ADX	0	0	< 23.54			
Amosite	ADX	0	0	< 23.54			
Anthophyllite	ADX	0	0	< 23.54			
Crocidolite	ADX	0	0	< 23.54			
Tremolite	ADX	0	0	< 23.54			
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.54**			
Other Minerals	-	0	0	< 23.54			
Total All Structures (PCMe)	**-**	**0**	**0**	**< 23.54**			

Comment

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EMSL Order ID: 042420429
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: 042420429-0005 **Customer Sample:** MFL-FB01-092624-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	J3	None Detected									
D1	H7	None Detected									
D1	E4	None Detected									
D1	B7	None Detected									
D2	I2	None Detected									
D2	G5	None Detected									
D2	D8	None Detected									
D3	J4	None Detected									
D3	F8	None Detected									
D3	C6	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:	042420429
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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Analysis Date:	10/03/2024
Report Date:	10/07/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM05-092724-AB** **Sample Description:** **DL274878**

EMSL Sample Number:	042420429-0006		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7230.4
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):	0.0127
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	5			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**

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

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**

Comment

Robyn Ray
Approved Signatory

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

EMSL Order ID: 042420429
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: 042420429-0006 **Customer Sample:** MFL-AM05-092724-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	A2	None Detected									
D5	F7	None Detected									
D5	I4	None Detected									
D6	H9	None Detected									
D6	E4	None Detected									

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

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EMSL Order:	042420429
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:	10/02/2024 09:30 AM
Analysis Date:	10/03/2024
Report Date:	10/07/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-092724-AB**		**Sample Description:**	**DL275026**
EMSL Sample Number:	042420429-0007		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	6957.5
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0127
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	4			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0009**		**Limit of Detection (Structures/cc):**	**0.0027**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 47.09**	**< 0.0027**	**Not Applicable**	**0.0027**
Total Amphibole	**ADX**	**0**	**0**	**< 47.09**	**< 0.0027**	**Not Applicable**	**0.0027**
Actinolite	ADX	0	0	< 47.09	< 0.0027	Not Applicable	0.0027
Amosite	ADX	0	0	< 47.09	< 0.0027	Not Applicable	0.0027
Anthophyllite	ADX	0	0	< 47.09	< 0.0027	Not Applicable	0.0027
Crocidolite	ADX	0	0	< 47.09	< 0.0027	Not Applicable	0.0027
Tremolite	ADX	0	0	< 47.09	< 0.0027	Not Applicable	0.0027
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0027**	**Not Applicable**	**0.0027**
Other Minerals	-	0	0	< 47.09	< 0.0027	Not Applicable	0.0027
Total All Structures	**-**	**0**	**0**	**< 47.09**	**< 0.0027**	**Not Applicable**	**0.0027**

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

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 47.09**	**< 0.0027**	**Not Applicable**	**0.0027**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 47.09**	**< 0.0027**	**Not Applicable**	**0.0027**
Actinolite	ADX	0	0	< 47.09	< 0.0027	Not Applicable	0.0027
Amosite	ADX	0	0	< 47.09	< 0.0027	Not Applicable	0.0027
Anthophyllite	ADX	0	0	< 47.09	< 0.0027	Not Applicable	0.0027
Crocidolite	ADX	0	0	< 47.09	< 0.0027	Not Applicable	0.0027
Tremolite	ADX	0	0	< 47.09	< 0.0027	Not Applicable	0.0027
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0027**	**Not Applicable**	**0.0027**
Other Minerals	-	0	0	< 47.09	< 0.0027	Not Applicable	0.0027
Total All Structures (PCMe)	**-**	**0**	**0**	**< 47.09**	**< 0.0027**	**Not Applicable**	**0.0027**

Comment

Numerous gypsum fibers present.

Robyn Ray
Approved Signatory

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EMSL Order ID: 042420429
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: 042420429-0007 **Customer Sample:** MFL-AM02-092724-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	C8	None Detected									
E1	D5	None Detected									
E1	H3	None Detected									
E2	B6	None Detected									
E2	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:	042420429
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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Received Date:	10/02/2024 09:30 AM
Analysis Date:	10/03/2024
Report Date:	10/07/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-092724-AB**		**Sample Description:**	**DL275068**
EMSL Sample Number:	042420429-0008		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7177.5
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0127
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	5			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**

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

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**

Comment

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EMSL Order ID: 042420429
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: 042420429-0008 **Customer Sample:** MFL-AM03-092724-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					
E6	J4	None Detected									
E6	G7	None Detected									
E6	B5	None Detected									
E7	F4	None Detected									
E7	F8	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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Project: **Maui Fires - Lahaina**

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Received Date:	10/02/2024 09:30 AM
Analysis Date:	10/03/2024
Report Date:	10/07/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM07-092724-AB** **Sample Description: DL274908**

EMSL Sample Number:	042420429-0009		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7177.8
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):	0.0127
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	4			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**

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

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**

Comment

Numerous gypsum fibers present.

Robyn Ray
Approved Signatory

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EMSL Order ID: 042420429
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: 042420429-0009 **Customer Sample:** MFL-AM07-092724-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
F1	B7	None Detected									
F1	F3	None Detected									
F1	I4	None Detected									
F2	H8	None Detected									
F2	D5	None Detected									

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

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EMSL Order:	042420429
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:	10/02/2024 09:30 AM
Analysis Date:	10/03/2024
Report Date:	10/07/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-FB01-092724-AB**		**Sample Description:**	**DL275061**
EMSL Sample Number:	042420429-0010		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0127
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	5			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**N/A**		**Limit of Detection (Structures/cc):**	**N/A**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	95 % Confidence Interval (S/cc) Upper
Total Chrysotile	**CD**	**0**	**0**	**< 23.54**			
Total Amphibole	**ADX**	**0**	**0**	**< 23.54**			
Actinolite	ADX	0	0	< 23.54			
Amosite	ADX	0	0	< 23.54			
Anthophyllite	ADX	0	0	< 23.54			
Crocidolite	ADX	0	0	< 23.54			
Tremolite	ADX	0	0	< 23.54			
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.54**			
Other Minerals	-	0	0	< 23.54			
Total All Structures	**-**	**0**	**0**	**< 23.54**			

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

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	95 % Confidence Interval (F/cc) Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 23.54**			
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.54**			
Actinolite	ADX	0	0	< 23.54			
Amosite	ADX	0	0	< 23.54			
Anthophyllite	ADX	0	0	< 23.54			
Crocidolite	ADX	0	0	< 23.54			
Tremolite	ADX	0	0	< 23.54			
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.54**			
Other Minerals	-	0	0	< 23.54			
Total All Structures (PCMe)	**-**	**0**	**0**	**< 23.54**			

Comment

Approved Signatory

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EMSL Order ID:	**042420429**
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: 042420429-0010 **Customer Sample:** MFL-FB01-092724-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	I4	None Detected									
F5	G8	None Detected									
F5	E3	None Detected									
F5	C5	None Detected									
F6	A5	None Detected									
F7	B4	None Detected									
F7	D9	None Detected									
F7	F6	None Detected									
F8	A3	None Detected									
F8	E2	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:	042420429
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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Received Date:	10/02/2024 09:30 AM
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Report Date:	10/07/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM05-092824-AB**		**Sample Description:**	**DL275019**
EMSL Sample Number:	042420429-0011		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7122.7
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0127
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	4			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0009**		**Limit of Detection (Structures/cc):**	**0.0027**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 47.09**	**< 0.0027**	**Not Applicable**	**0.0027**
Total Amphibole	**ADX**	**0**	**0**	**< 47.09**	**< 0.0027**	**Not Applicable**	**0.0027**
Actinolite	ADX	0	0	< 47.09	< 0.0027	Not Applicable	0.0027
Amosite	ADX	0	0	< 47.09	< 0.0027	Not Applicable	0.0027
Anthophyllite	ADX	0	0	< 47.09	< 0.0027	Not Applicable	0.0027
Crocidolite	ADX	0	0	< 47.09	< 0.0027	Not Applicable	0.0027
Tremolite	ADX	0	0	< 47.09	< 0.0027	Not Applicable	0.0027
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0027**	**Not Applicable**	**0.0027**
Other Minerals	-	0	0	< 47.09	< 0.0027	Not Applicable	0.0027
Total All Structures	**-**	**0**	**0**	**< 47.09**	**< 0.0027**	**Not Applicable**	**0.0027**

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

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 47.09**	**< 0.0027**	**Not Applicable**	**0.0027**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 47.09**	**< 0.0027**	**Not Applicable**	**0.0027**
Actinolite	ADX	0	0	< 47.09	< 0.0027	Not Applicable	0.0027
Amosite	ADX	0	0	< 47.09	< 0.0027	Not Applicable	0.0027
Anthophyllite	ADX	0	0	< 47.09	< 0.0027	Not Applicable	0.0027
Crocidolite	ADX	0	0	< 47.09	< 0.0027	Not Applicable	0.0027
Tremolite	ADX	0	0	< 47.09	< 0.0027	Not Applicable	0.0027
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0027**	**Not Applicable**	**0.0027**
Other Minerals	-	0	0	< 47.09	< 0.0027	Not Applicable	0.0027
Total All Structures (PCMe)	**-**	**0**	**0**	**< 47.09**	**< 0.0027**	**Not Applicable**	**0.0027**

Comment

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EMSL Order ID: 042420429
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: 042420429-0011 **Customer Sample:** MFL-AM05-092824-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	C3	None Detected									
G1	F7	None Detected									
G1	J4	None Detected									
G2	B5	None Detected									
G2	G5	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:	042420429
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:	10/02/2024 09:30 AM
Analysis Date:	10/07/2024
Report Date:	10/07/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-092824-AB**	**Sample Description:**	**DL275086**
EMSL Sample Number:	042420429-0012	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L) :	7176.6
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):	0.0127
Chi^2 Test for Random Distribution on Filter:	N/A *(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD	Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX		
Estimated Particulate Loading on Filter %:	5		
Target Analytical Sensitivity (Structures/cc):	0.001		
Analytical Sensitivity (Structures/cc):	**0.0008**	**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**

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

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**

Comment

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EMSL Order ID: 042420429
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: 042420429-0012 **Customer Sample:** MFL-AM02-092824-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	J6	None Detected									
G5	H4	None Detected									
G5	D6	None Detected									
G6	H4	None Detected									
G6	C6	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:	10/02/2024 09:30 AM
Analysis Date:	10/07/2024
Report Date:	10/07/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-092824-AB**		**Sample Description:**	**DL267179**
EMSL Sample Number:	042420429-0013		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7134.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0127
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	5			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**

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

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**

Comment

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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: 042420429-0013 **Customer Sample:** MFL-AM03-092824-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	A4	None Detected									
H2	E7	None Detected									
H2	J4	None Detected									
H3	C4	None Detected									
H3	H4	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:	10/02/2024 09:30 AM
Analysis Date:	10/07/2024
Report Date:	10/07/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM07-092824-AB**		**Sample Description:**	**DL267206**
EMSL Sample Number:	042420429-0014		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7158.1
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0127
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	2			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**

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

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**

Comment

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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: 042420429-0014 **Customer Sample:** MFL-AM07-092824-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	H6	None Detected									
H5	E4	None Detected									
H5	B7	None Detected									
H6	A6	None Detected									
H6	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:	042420429
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

Attn: **Chelsea Saber**
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Analysis Date:	10/07/2024
Report Date:	10/07/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-092824-AB** **Sample Description:** **DL267219**

EMSL Sample Number:	042420429-0015		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0127
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.001			

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

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	95 % Confidence Interval (S/cc) Upper
Total Chrysotile	**CD**	**0**	**0**	**< 23.54**			
Total Amphibole	**ADX**	**0**	**0**	**< 23.54**			
Actinolite	ADX	0	0	< 23.54			
Amosite	ADX	0	0	< 23.54			
Anthophyllite	ADX	0	0	< 23.54			
Crocidolite	ADX	0	0	< 23.54			
Tremolite	ADX	0	0	< 23.54			
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.54**			
Other Minerals	-	0	0	< 23.54			
Total All Structures	**-**	**0**	**0**	**< 23.54**			

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

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	95 % Confidence Interval (F/cc) Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 23.54**			
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.54**			
Actinolite	ADX	0	0	< 23.54			
Amosite	ADX	0	0	< 23.54			
Anthophyllite	ADX	0	0	< 23.54			
Crocidolite	ADX	0	0	< 23.54			
Tremolite	ADX	0	0	< 23.54			
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.54**			
Other Minerals	-	0	0	< 23.54			
Total All Structures (PCMe)	**-**	**0**	**0**	**< 23.54**			

Comment

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EMSL Order ID:	**042420429**
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: 042420429-0015 **Customer Sample:** MFL-FB01-092824-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
I1	A6	None Detected									
I1	C3	None Detected									
I1	E8	None Detected									
I1	G9	None Detected									
I1	H4	None Detected									
I2	A4	None Detected									
I2	C4	None Detected									
I2	E2	None Detected									
I2	G9	None Detected									
I2	I6	None Detected									

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

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EMSL Order:	042420429
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:	10/02/2024 09:30 AM
Analysis Date:	10/07/2024
Report Date:	10/07/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM05-092924-AB**	**Sample Description:**	**DL267229**
EMSL Sample Number:	042420429-0016	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L) :	7212.4
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):	0.0127
Chi^2 Test for Random Distribution on Filter:	N/A *(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD	Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX		
Estimated Particulate Loading on Filter %:	3		
Target Analytical Sensitivity (Structures/cc):	0.001		
Analytical Sensitivity (Structures/cc):	**0.0008**	**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**

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

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**

Comment

Robyn Ray
Approved Signatory

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

EMSL Order ID: 042420429
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: 042420429-0016 **Customer Sample:** MFL-AM05-092924-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	B5	None Detected									
I5	E3	None Detected									
I5	H7	None Detected									
I6	A8	None Detected									
I6	H5	None Detected									

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

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EMSL Order:	042420429
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Fires - Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	10/02/2024 09:30 AM
Analysis Date:	10/07/2024
Report Date:	10/07/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-092924-AB**	**Sample Description:**	**DL267214**
EMSL Sample Number:	042420429-0017	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L) :	7238.0
Aspect ratio for fiber definition:	3:1	Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5	Grid Opening Area (mm^2):	0.0127
Chi^2 Test for Random Distribution on Filter:	N/A *(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD	Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX		
Estimated Particulate Loading on Filter %:	3		
Target Analytical Sensitivity (Structures/cc):	0.001		
Analytical Sensitivity (Structures/cc):	**0.0008**	**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**

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

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**

Comment

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EMSL Order ID: 042420429
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: 042420429-0017 **Customer Sample:** MFL-AM02-092924-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
J1	I5	None Detected									
J1	F4	None Detected									
J1	C3	None Detected									
J2	G4	None Detected									
J2	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:	042420429
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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Report Date:	10/07/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-092924-AB**		**Sample Description:**	**DL267227**
EMSL Sample Number:	042420429-0018		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7210.5
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0127
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	5			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**

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

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**

Comment

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EMSL Order ID: 042420429
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: 042420429-0018 **Customer Sample:** MFL-AM03-092924-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	I6	None Detected									
J5	F8	None Detected									
J5	D8	None Detected									
J6	I7	None Detected									
J6	F3	None Detected									

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

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EMSL Order:	042420429
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
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Report Date:	10/07/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM07-092924-AB**		**Sample Description:**	**DL267178**
EMSL Sample Number:	042420429-0019		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7163.7
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0127
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	2			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**

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

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 47.09	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**0.0024**

Comment

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EMSL Order ID: 042420429
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: 042420429-0019 **Customer Sample:** MFL-AM07-092924-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
K1	A10	None Detected									
K1	D5	None Detected									
K1	F1	None Detected									
K2	C4	None Detected									
K2	G6	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:	042420429
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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Analysis Date:	10/07/2024
Report Date:	10/07/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-FB01-092924-AB**		**Sample Description:**	**DL267203**
EMSL Sample Number:	042420429-0020		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):	0.0127
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**N/A**		**Limit of Detection (Structures/cc):**	**N/A**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	95 % Confidence Interval (S/cc) Upper
Total Chrysotile	**CD**	**0**	**0**	**< 23.54**			
Total Amphibole	**ADX**	**0**	**0**	**< 23.54**			
Actinolite	ADX	0	0	< 23.54			
Amosite	ADX	0	0	< 23.54			
Anthophyllite	ADX	0	0	< 23.54			
Crocidolite	ADX	0	0	< 23.54			
Tremolite	ADX	0	0	< 23.54			
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.54**			
Other Minerals	-	0	0	< 23.54			
Total All Structures	**-**	**0**	**0**	**< 23.54**			

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

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	95 % Confidence Interval (F/cc) Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 23.54**			
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.54**			
Actinolite	ADX	0	0	< 23.54			
Amosite	ADX	0	0	< 23.54			
Anthophyllite	ADX	0	0	< 23.54			
Crocidolite	ADX	0	0	< 23.54			
Tremolite	ADX	0	0	< 23.54			
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.54**			
Other Minerals	-	0	0	< 23.54			
Total All Structures (PCMe)	**-**	**0**	**0**	**< 23.54**			

Comment

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EMSL Order ID: 042420429
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: 042420429-0020 **Customer Sample:** MFL-FB01-092924-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	E9	None Detected									
K5	G8	None Detected									
K5	I4	None Detected									
K6	J2	None Detected									
K6	H1	None Detected									
K6	E4	None Detected									
K6	D7	None Detected									
K6	B3	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:	042420429
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:	10/02/2024 09:30 AM
Analysis Date:	10/03/2024
Report Date:	10/07/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**Lab Blank**		**Sample Description:**	**Lab Blank**
EMSL Sample Number:	042420429-0021		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):	0.0127
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**N/A**		**Limit of Detection (Structures/cc):**	**N/A**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	95 % Confidence Interval (S/cc) Upper
Total Chrysotile	**CD**	**0**	**0**	**< 23.54**			
Total Amphibole	**ADX**	**0**	**0**	**< 23.54**			
Actinolite	ADX	0	0	< 23.54			
Amosite	ADX	0	0	< 23.54			
Anthophyllite	ADX	0	0	< 23.54			
Crocidolite	ADX	0	0	< 23.54			
Tremolite	ADX	0	0	< 23.54			
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.54**			
Other Minerals	-	0	0	< 23.54			
Total All Structures	**-**	**0**	**0**	**< 23.54**			

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

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	95 % Confidence Interval (F/cc) Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 23.54**			
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.54**			
Actinolite	ADX	0	0	< 23.54			
Amosite	ADX	0	0	< 23.54			
Anthophyllite	ADX	0	0	< 23.54			
Crocidolite	ADX	0	0	< 23.54			
Tremolite	ADX	0	0	< 23.54			
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.54**			
Other Minerals	-	0	0	< 23.54			
Total All Structures (PCMe)	**-**	**0**	**0**	**< 23.54**			

Comment

Approved Signatory

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

EMSL Order ID: 042420429
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: 042420429-0021 **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	A3	None Detected									
A1	D5	None Detected									
A1	G2	None Detected									
A1	I6	None Detected									
A2	J7	None Detected									
A2	G4	None Detected									
A2	B5	None Detected									
A3	I8	None Detected									
A3	E4	None Detected									
A3	A6	None Detected									

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

OrderID: 042420429

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL Order Number / Lab Use Only

#042420429

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

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

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

Customer Information

Customer ID:	
Company Name:	Tetra Tech
Contact Name:	Chelsea Saber
Street Address:	1560 Broadway STE 1400
City, State, Zip:	Denver, CO 80202
Country:	USA
Phone:	(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

RECEIVED EMSL CINNAMINSON NJ 24 OCT -2 AM 9:19

*Please call with your project-specific requirements.

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

Sample Number	Sample Location / Description	Volume, Area or Homogeneous Area	Date / Time Sampled (Air Monitoring Only)
MFL-AM05-092624-AB	DL275109	7,192.301	09/26/24 1058
MFL-AM02-092624-AB	DL274964	7,185.342	09/26/24 1116
MFL-AM03-092624-AB	DL275029	7,214.602	09/26/24 1305
MFL-AM07-092624-AB	DL274943	7,206.714	09/26/24 1327
MFL-FB01-092624-AB	DL274882	0	09/26/24 1200
MFL-AM05-092724-AB	DL274878	7,230.404	09/27/24 1058
MFL-AM02-092724-AB	DL275026	6,957.506	09/27/24 1113
MFL-AM03-092724-AB	DL275068	7,177.528	09/27/24 1302

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: 09/30/24 1100	Received by: EFX Date/Time 10/2/24 932
Relinquished by:		Date/Time:	Received by: Date/Time

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

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

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

20 SD

OrderID: 042420429

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL Order Number / Lab Use Only

#042420429

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

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

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

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

Sample Number	Sample Location / Description	Volume, Area or Homogeneous Area	Date / Time Sampled (Air Monitoring Only)
MFL-AM07-092724-AB	DL274908	7,177.813	09/27/24 1322
MFL-FB01-092724-AB	DL275061	0	09/27/24 1200
MFL-AM05-092824-AB	DL275019	7,122.727	09/28/24 1055
MFL-AM02-092824-AB	DL275086	7,176.554	09/28/24 1112
MFL-AM03-092824-AB	DL267179	7,133.984	09/28/24 1254
MFL-AM07-092824-AB	DL267206	7,158.138	09/28/24 1318
MFL-FB01-092824-AB	DL267219	0	09/28/24 1200
MFL-AM05-092924-AB	DL267229	7,212.433	09/29/24 1057
MFL-AM02-092924-AB	DL267214	7,237.954	09/29/24 1113
MFL-AM03-092924-AB	DL267227	7,210.515	09/29/24 1254
MFL-AM07-092924-AB	DL267178	7,163.657	09/29/24 1313
MFL-FB01-092924-AB	DL267203	0	09/29/24 1200

RECEIVED
EMSL
CINNAMINSON, NJ
24 OCT -2 AM 11:09

Method of Shipment: Fedex			Sample Condition Upon Receipt:		
Relinquished by:		Date/Time: 09/30/24 1100	Received by:	10/1/24	Date/Time
Relinquished by:		Date/Time:	Received by:		Date/Time

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

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

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

Stage 1 Data Verification Checklist – Asbestos

HDOH CAB – Ambient Community Air Sampling – Lahaina

Task Order No. 23141

Reviewed by:
Kierra Johnson 10/07/2024 and Shanna Vasser 10/08/2024
Laboratory: EMSL Analytical, Inc. – North Cinnaminson, NJ
Collection date(s): 09/26/2024 – 09/29/2024
Report No: 42420429

√	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:	042420760
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:	10/07/2024 09:00 AM
Analysis Date:	10/09/2024
Report Date:	10/11/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM05-093024-AB**		**Sample Description:**	**DL267220**
EMSL Sample Number:	042420760-0001		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7155.8
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	G.Barry
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: 042420760
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: 042420760-0001 **Customer Sample:** MFL-AM05-093024-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
B2	J4	None Detected									
B2	G7	None Detected									
B2	B9	None Detected									
B3	H3	None Detected									
B3	D5	None Detected									

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

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

EMSL Order:	042420760
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:	10/07/2024 09:00 AM
Analysis Date:	10/09/2024
Report Date:	10/11/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-093024-AB**		**Sample Description:**	**DL267171**
EMSL Sample Number:	042420760-0002		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7149.4
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:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	5			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 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: 042420760
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: 042420760-0002 **Customer Sample:** MFL-AM02-093024-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	B5	None Detected									
B5	F7	None Detected									
B5	I4	None Detected									
B6	G5	None Detected									
B6	C4	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:	042420760
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:	10/07/2024 09:00 AM
Analysis Date:	10/09/2024
Report Date:	10/11/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-093024-AB**		**Sample Description:**	**DL267218**
EMSL Sample Number:	042420760-0003		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7195.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	5			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 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: 042420760
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: 042420760-0003 **Customer Sample:** MFL-AM03-093024-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					
C3	I3	None Detected									
C3	H7	None Detected									
C3	B4	None Detected									
C4	G8	None Detected									
C4	C5	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:	042420760
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	10/07/2024 09:00 AM
Analysis Date:	10/09/2024
Report Date:	10/11/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM07-093024-AB**		**Sample Description:**	**DL267192**
EMSL Sample Number:	042420760-0004		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7242.6
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:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	5			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 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: 042420760-0004 **Customer Sample:** MFL-AM07-093024-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
C5	A8	None Detected									
C5	D6	None Detected									
C5	I8	None Detected									
C6	B5	None Detected									
C6	G6	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:	042420760
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:	10/07/2024 09:00 AM
Analysis Date:	10/11/2024
Report Date:	10/11/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-FB01-093024-AB**	**Sample Description:**	**DL267201**
EMSL Sample Number:	042420760-0005	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: 042420760
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: 042420760-0005 **Customer Sample:** MFL-FB01-093024-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	E3	None Detected									
D1	F9	None Detected									
D1	G5	None Detected									
D1	I6	None Detected									
D1	I8	None Detected									
D2	H7	None Detected									
D2	F8	None Detected									
D2	E5	None Detected									
D2	C3	None Detected									
D2	A3	None Detected									

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

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EMSL Order:	042420760
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:	10/07/2024 09:00 AM
Analysis Date:	10/11/2024
Report Date:	10/11/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM05-100124-AB**	**Sample Description:**	**DL267198**
EMSL Sample Number:	042420760-0006	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L) :	7261.1
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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EMSL Order ID: 042420760
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: 042420760-0006 **Customer Sample:** MFL-AM05-100124-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	B4	None Detected									
D5	E7	None Detected									
D5	G7	None Detected									
D6	C8	None Detected									
D6	G6	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:	042420760
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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Denver, CO, 80202

Project: **Maui Fires Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	10/07/2024 09:00 AM
Analysis Date:	10/11/2024
Report Date:	10/11/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-100124-AB**		**Sample Description:**	**DL267200**
EMSL Sample Number:	042420760-0007		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7162.9
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	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: 042420760
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: 042420760-0007 **Customer Sample:** MFL-AM02-100124-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	D9	None Detected									
E1	F8	None Detected									
E1	I5	None Detected									
E2	G5	None Detected									
E2	B6	None Detected									

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

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EMSL Order:	042420760
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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Denver, CO, 80202

Project: **Maui Fires Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	10/07/2024 09:00 AM
Analysis Date:	10/11/2024
Report Date:	10/11/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-100124-AB**		**Sample Description:**	**DL267204**
EMSL Sample Number:	042420760-0008		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7163.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	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: 042420760
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: 042420760-0008 **Customer Sample:** MFL-AM03-100124-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	H5	None Detected									
E5	E3	None Detected									
E5	C6	None Detected									
E6	H8	None Detected									
E6	D6	None Detected									

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

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EMSL Order:	042420760
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:	10/07/2024 09:00 AM
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ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM07-100124-AB**		**Sample Description:**	**DL267187**
EMSL Sample Number:	042420760-0009		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7149.8
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	2			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**

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

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**

Comment

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EMSL Order ID: 042420760
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: 042420760-0009 **Customer Sample:** MFL-AM07-100124-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	H8	None Detected									
F2	E2	None Detected									
F2	C3	None Detected									
F3	C6	None Detected									
F3	G3	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:	042420760
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Phone:	(703) 489-2674
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Report Date:	10/11/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-FB01-100124-AB**	**Sample Description:**	**DL267174**
EMSL Sample Number:	042420760-0010	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: 042420760
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: 042420760-0010 **Customer Sample:** MFL-FB01-100124-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	J6	None Detected									
F5	H5	None Detected									
F5	F8	None Detected									
F5	D3	None Detected									
F5	B4	None Detected									
F6	J7	None Detected									
F6	H5	None Detected									
F6	F3	None Detected									
F6	D5	None Detected									
F6	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:	042420760
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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Analysis Date:	10/11/2024
Report Date:	10/11/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM05-100224-AB**		**Sample Description:**	**DL267164**
EMSL Sample Number:	042420760-0011		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7175.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	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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Approved Signatory

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EMSL Order ID: 042420760
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: 042420760-0011 **Customer Sample:** MFL-AM05-100224-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	G7	None Detected									
G1	E9	None Detected									
G1	B4	None Detected									
G2	G1	None Detected									
G2	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:	042420760
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

Attn: **Chelsea Saber**
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Analysis Date:	10/11/2024
Report Date:	10/11/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-100224-AB**		**Sample Description:**	**DL267194**
EMSL Sample Number:	042420760-0012		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7098.5
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: 042420760
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: 042420760-0012 **Customer Sample:** MFL-AM02-100224-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	I3	None Detected									
G5	F3	None Detected									
G5	D5	None Detected									
G6	C8	None Detected									
G6	G8	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:	042420760
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:	10/07/2024 09:00 AM
Analysis Date:	10/11/2024
Report Date:	10/11/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-100224-AB**		**Sample Description:**	**DL267202**
EMSL Sample Number:	042420760-0013		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7247.2
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**

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

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**

Comment

Robyn Ray
Approved Signatory

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

EMSL Order ID: 042420760
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: 042420760-0013 **Customer Sample:** MFL-AM03-100224-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	C9	None Detected									
H1	E7	None Detected									
H1	G9	None Detected									
H2	D8	None Detected									
H2	G7	None Detected									

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

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

EMSL Order:	042420760
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:	10/07/2024 09:00 AM
Analysis Date:	10/11/2024
Report Date:	10/11/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM07-100224-AB**		**Sample Description:**	**DL267210**
EMSL Sample Number:	042420760-0014		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7269.6
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	5			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**

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

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**

Comment

Robyn Ray
Approved Signatory

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

EMSL Order ID: 042420760
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: 042420760-0014 **Customer Sample:** MFL-AM07-100224-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	H4	None Detected									
H5	F2	None Detected									
H5	C3	None Detected									
H7	B6	None Detected									
H7	H4	None Detected									

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

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

EMSL Order:	042420760
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:	10/07/2024 09:00 AM
Analysis Date:	10/11/2024
Report Date:	10/11/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-FB01-100224-AB**	**Sample Description:**	**DL267123**
EMSL Sample Number:	042420760-0015	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:	**042420760**
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: 042420760-0015 **Customer Sample:** MFL-FB01-100224-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
I1	J1	None Detected									
I1	H3	None Detected									
I1	F4	None Detected									
I1	D3	None Detected									
I1	B6	None Detected									
I2	A5	None Detected									
I2	C6	None Detected									
I2	E3	None Detected									
I2	G5	None Detected									
I2	I8	None Detected									

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

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EMSL Order:	042420760
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:	10/07/2024 09:00 AM
Analysis Date:	10/09/2024
Report Date:	10/11/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**Lab Blank**		**Sample Description:**	**Lab Blank**
EMSL Sample Number:	042420760-0016		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:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**N/A**		**Limit of Detection (Structures/cc):**	**N/A**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	95 % Confidence Interval (S/cc) Upper
Total Chrysotile	**CD**	**0**	**0**	**< 23.36**			
Total Amphibole	**ADX**	**0**	**0**	**< 23.36**			
Actinolite	ADX	0	0	< 23.36			
Amosite	ADX	0	0	< 23.36			
Anthophyllite	ADX	0	0	< 23.36			
Crocidolite	ADX	0	0	< 23.36			
Tremolite	ADX	0	0	< 23.36			
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.36**			
Other Minerals	-	0	0	< 23.36			
Total All Structures	**-**	**0**	**0**	**< 23.36**			

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

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	95 % Confidence Interval (F/cc) Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 23.36**			
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.36**			
Actinolite	ADX	0	0	< 23.36			
Amosite	ADX	0	0	< 23.36			
Anthophyllite	ADX	0	0	< 23.36			
Crocidolite	ADX	0	0	< 23.36			
Tremolite	ADX	0	0	< 23.36			
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.36**			
Other Minerals	-	0	0	< 23.36			
Total All Structures (PCMe)	**-**	**0**	**0**	**< 23.36**			

Comment

Robyn Ray
Approved Signatory

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

EMSL Order ID:	**042420760**
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: 042420760-0016 LB **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	A10	None Detected									
A1	C7	None Detected									
A1	G4	None Detected									
A1	I7	None Detected									
A2	B6	None Detected									
A2	C9	None Detected									
A2	J6	None Detected									
A3	A7	None Detected									
A3	D3	None Detected									
A3	H6	None Detected									

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

OrderID: 042420760

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

EMSL Order Number / Lab Use Only

#042420760

RECEIVED EMSL CINNAMINSON, N.J. 2024 OCT -7 A 9:31

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

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

Customer Information

Customer ID:	
Company Name:	Tetra Tech
Contact Name:	Chelsea Saber
Street Address:	1560 Broadway STE 1400
City, State, Zip:	Denver, CO 80202
Country:	USA
Phone:	(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	15

Turn-Around-Time (TAT)

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

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

Test Selection

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

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

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

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

Other Test (please specify)

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

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

*Please call with your project-specific requirements.

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

Sample Number	Sample Location / Description	Volume, Area or Homogeneous Area	Date / Time Sampled (Air Monitoring Only)
MFL-AM05-093024-AB	DL267220	7,155.803	09/30/24 1056
MFL-AM02-093024-AB	DL267171	7,149.350	09/30/24 1111
MFL-AM03-093024-AB	DL267218	7,195.019	09/30/24 1301
MFL-AM07-093024-AB	DL267192	7,242.589	09/30/24 1319
MFL-FB01-093024-AB	DL267201	0	09/30/24 1200
MFL-AM05-100124-AB	DL267198	7,261.141	10/01/24 1107
MFL-AM02-100124-AB	DL267200	7,162.871	10/01/24 1125
MFL-AM03-100124-AB	DL267204	7,163.007	10/01/24 1255

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: 10/03/24 1100	Received by: FX
Relinquished by:		Date/Time:	Received by:
			Date/Time: 10/7/24 9:00

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 1 of 15/05

OrderID: 042420760

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL Order Number / Lab Use Only:

#042420760

RECEIVED EMSL CINNAMINSON, N.J.

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.)

2024 OCT -1 A 9:31

Sample Number	Sample Location / Description	Volume, Area or Homogeneous Area	Date / Time Sampled (Air Monitoring Only)
MFL-AM07-100124-AB	DL267187	7,149.781	10/01/24 1316
MFL-FB01-100129-AB	DL267174	0	10/01/24 1200
MFL-AM05-100224-AB	DL267164	7,175.025	10/02/24 1102
MFL-AM02-100224-AB	DL267194	7,098.520	10/02/24 1117
MFL-AM03-100224-AB	DL267202	7,297.236	10/02/24 1257
MFL-AM07-100224-AB	DL267210	7,269.557	10/02/24 1321
MFL-FB01-100224-AB	DL267123	0	10/02/24 1200

Method of Shipment: Fedex		Sample Condition Upon Receipt:	
Relinquished by:	Date/Time: 10/03/24 1100	Received by: FX	Date/Time: 10/7/24 9:00a
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 10/15/2024 and Shanna Vasser 10/16/2024
Laboratory: EMSL Analytical, Inc. – North Cinnaminson, NJ
Collection date(s): 09/30/2024 – 10/02/2024
Report No: 42420760

√	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

October 16, 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 10/07/24 12:28.

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

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

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

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

Sincerely,

Julie Swift
Program Manager
julie.swift@erg.com

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 10/16/24 12:44
SUBMITTED: 10/07/24
AQS SITE CODE:
SITE CODE: Lahaina fires

ANALYTICAL REPORT FOR SAMPLES

SampleName	LabNumber	Matrix	Sampled	Received
MFL-AM05-092624-HM	4100748-01	Air	09/26/24 23:59	10/07/24 12:28
MFL-AM02-092624-HM	4100748-02	Air	09/26/24 23:59	10/07/24 12:28
MFL-AM03-092624-HM	4100748-03	Air	09/26/24 23:59	10/07/24 12:28
MFL-AM07-092624-HM	4100748-04	Air	09/26/24 23:59	10/07/24 12:28
MFL-AM05-092724-HM	4100748-05	Air	09/27/24 23:59	10/07/24 12:28
MFL-AM02-092724-HM	4100748-06	Air	09/27/24 23:59	10/07/24 12:28
MFL-AM03-092724-HM	4100748-07	Air	09/27/24 23:59	10/07/24 12:28
MFL-AM07-092724-HM	4100748-08	Air	09/27/24 23:59	10/07/24 12:28
MFL-FB01-092724-HM	4100748-09	Air	09/27/24 00:00	10/07/24 12:28
MFL-AM05-092824-HM	4100748-10	Air	09/28/24 23:59	10/07/24 12:28
MFL-AM02-092824-HM	4100748-11	Air	09/28/24 23:59	10/07/24 12:28
MFL-AM03-092824-HM	4100748-12	Air	09/28/24 23:59	10/07/24 12:28
MFL-AM07-092824-HM	4100748-13	Air	09/28/24 23:59	10/07/24 12:28
MFL-AM05-092924-HM	4100748-14	Air	09/29/24 23:59	10/07/24 12:28
MFL-AM02-092924-HM	4100748-15	Air	09/29/24 23:59	10/07/24 12:28
MFL-AM03-092924-HM	4100748-16	Air	09/29/24 23:59	10/07/24 12:28
MFL-AM07-092924-HM	4100748-17	Air	09/29/24 23:59	10/07/24 12:28
MFL-FB01-092924-HM	4100748-18	Air	09/29/24 00:00	10/07/24 12:28
MFL-AM05-093024-HM	4100748-19	Air	09/30/24 23:59	10/07/24 12:28
MFL-AM02-093024-HM	4100748-20	Air	09/30/24 23:59	10/07/24 12:28
MFL-AM03-093024-HM	4100748-21	Air	09/30/24 23:59	10/07/24 12:28

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

FILE #: 4205.00.003.001
REPORTED: 10/16/24 12:44
SUBMITTED: 10/07/24
AQS SITE CODE:
SITE CODE: Lahaina fires

MFL-AM07-093024-HM	4100748-22	Air	09/30/24 23:59	10/07/24 12:28
MFL-AM05-100124-HM	4100748-23	Air	10/01/24 23:59	10/07/24 12:28
MFL-AM02-100124-HM	4100748-24	Air	10/01/24 23:59	10/07/24 12:28
MFL-AM03-100124-HM	4100748-25	Air	10/01/24 23:59	10/07/24 12:28
MFL-AM07-100124-HM	4100748-26	Air	10/01/24 23:59	10/07/24 12:28
MFL-FB01-100124-HM	4100748-27	Air	10/01/24 00:00	10/07/24 12:28
MFL-AM05-100224-HM	4100748-28	Air	10/02/24 23:59	10/07/24 12:28
MFL-AM02-100224-HM	4100748-29	Air	10/02/24 23:59	10/07/24 12:28
MFL-AM03-100224-HM	4100748-30	Air	10/02/24 23:59	10/07/24 12:28
MFL-AM07-100224-HM	4100748-31	Air	10/02/24 23:59	10/07/24 12:28
MFL-LB01-100224-HM	4100748-32	Air	10/02/24 00:00	10/07/24 12:28

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

FILE #: 4205.00.003.001
REPORTED: 10/16/24 12:44
SUBMITTED: 10/07/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM05-092624-HM
Matrix: Air
Lab ID: 4100748-01
Sample Volume: 1899.232 m³
Filter ID:
Sampled: 09/26/24 23:59
Received: 10/07/24 12:28
Analysis Date: 10/09/24 03:03

Comments: Q9540550 - 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**	**0.0751**	SL	**0.0331**
Arsenic	**7440-38-2**	**0.220**		**0.00803**
Barium	**7440-39-3**	**3.77**		**0.917**
Beryllium	**7440-41-7**	**0.0102**		**0.00274**
Cadmium	7440-43-9	0.0167	U	0.0635
Chromium	**7440-47-3**	**2.93**		**1.89**
Cobalt	**7440-48-4**	**0.375**		**0.0374**
Copper	**7440-50-8**	**60.7**		**2.25**
Lead	**7439-92-1**	**0.487**		**0.183**
Manganese	**7439-96-5**	**10.6**		**1.62**
Molybdenum	**7439-98-7**	**3.00**		**0.308**
Nickel	**7440-02-0**	**1.28**		**0.559**
Selenium	**7782-49-2**	**0.181**	LJ, QX	**0.00768**
Thallium	**7440-28-0**	**9.37E-4**		**5.05E-4**
Vanadium	**7440-62-2**	**1.20**		**0.0453**
Zinc	7440-66-6	15.4	U	65.8

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 10/16/24 12:44
SUBMITTED: 10/07/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-092624-HM
Matrix: Air
Lab ID: 4100748-02
Sample Volume: 2012.451 m³
Filter ID:
Sampled: 09/26/24 23:59
Received: 10/07/24 12:28
Analysis Date: 10/08/24 19:52

Comments: Q9540549 - MS/MSD Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.137**	SL	**0.0312**
Arsenic	**7440-38-2**	**0.273**		**0.00758**
Barium	**7440-39-3**	**5.71**		**0.865**
Beryllium	**7440-41-7**	**0.0147**		**0.00259**
Cadmium	7440-43-9	0.0368	U	0.0599
Chromium	**7440-47-3**	**3.39**		**1.79**
Cobalt	**7440-48-4**	**0.533**		**0.0352**
Copper	**7440-50-8**	**31.8**		**2.13**
Lead	**7439-92-1**	**0.798**		**0.173**
Manganese	**7439-96-5**	**16.3**		**1.53**
Molybdenum	**7439-98-7**	**1.76**		**0.290**
Nickel	**7440-02-0**	**1.56**		**0.527**
Selenium	**7782-49-2**	**0.205**	LJ, QX	**0.00724**
Thallium	**7440-28-0**	**0.00106**	QB-04	**4.76E-4**
Vanadium	**7440-62-2**	**1.71**		**0.0428**
Zinc	**7440-66-6**	**85.9**		**62.1**

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 10/16/24 12:44
SUBMITTED: 10/07/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-092624-HM
Matrix: Air
Lab ID: 4100748-03
Sample Volume: 1956.387 m³
Filter ID:
Sampled: 09/26/24 23:59
Received: 10/07/24 12:28
Analysis Date: 10/09/24 03:23

Comments: Q9540547 - 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**	**0.0450**	SL	**0.0321**
Arsenic	**7440-38-2**	**0.183**		**0.00779**
Barium	**7440-39-3**	**3.45**		**0.890**
Beryllium	**7440-41-7**	**0.0472**		**0.00266**
Cadmium	7440-43-9	0.0226	U	0.0616
Chromium	**7440-47-3**	**3.33**		**1.84**
Cobalt	**7440-48-4**	**0.633**		**0.0363**
Copper	**7440-50-8**	**37.8**		**2.19**
Lead	**7439-92-1**	**0.274**		**0.178**
Manganese	**7439-96-5**	**14.7**		**1.57**
Molybdenum	**7439-98-7**	**2.16**		**0.299**
Nickel	**7440-02-0**	**1.54**		**0.542**
Selenium	**7782-49-2**	**0.199**	LJ, QX	**0.00745**
Thallium	**7440-28-0**	**9.78E-4**		**4.90E-4**
Vanadium	**7440-62-2**	**1.43**		**0.0440**
Zinc	7440-66-6	12.2	U	63.9

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 10/16/24 12:44
SUBMITTED: 10/07/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM07-092624-HM
Matrix: Air
Lab ID: 4100748-04
Sample Volume: 1967.496 m³
Filter ID:
Sampled: 09/26/24 23:59
Received: 10/07/24 12:28
Analysis Date: 10/09/24 03:43

Comments: Q9540545 - 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**	**0.0656**	SL	**0.0319**
Arsenic	**7440-38-2**	**0.536**		**0.00775**
Barium	**7440-39-3**	**2.55**		**0.885**
Beryllium	**7440-41-7**	**0.00764**		**0.00265**
Cadmium	7440-43-9	0.0111	U	0.0613
Chromium	**7440-47-3**	**2.94**		**1.83**
Cobalt	**7440-48-4**	**0.386**		**0.0361**
Copper	**7440-50-8**	**22.0**		**2.17**
Lead	**7439-92-1**	**0.250**		**0.177**
Manganese	**7439-96-5**	**10.6**		**1.56**
Molybdenum	**7439-98-7**	**1.51**		**0.297**
Nickel	**7440-02-0**	**1.33**		**0.539**
Selenium	**7782-49-2**	**0.154**	LJ, QX	**0.00741**
Thallium	**7440-28-0**	**8.03E-4**		**4.87E-4**
Vanadium	**7440-62-2**	**0.959**		**0.0437**
Zinc	7440-66-6	9.30	U	63.5

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 10/16/24 12:44
SUBMITTED: 10/07/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM05-092724-HM
Matrix: Air
Lab ID: 4100748-05
Sample Volume: 1983.38 m³
Filter ID:
Sampled: 09/27/24 23:59
Received: 10/07/24 12:28
Analysis Date: 10/09/24 03:59

Comments: Q9540543 - 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**	**0.0770**	SL	**0.0317**
Arsenic	**7440-38-2**	**0.388**		**0.00769**
Barium	**7440-39-3**	**3.76**		**0.878**
Beryllium	**7440-41-7**	**0.0106**		**0.00263**
Cadmium	**7440-43-9**	**0.0890**		**0.0608**
Chromium	**7440-47-3**	**2.60**		**1.81**
Cobalt	**7440-48-4**	**0.374**		**0.0358**
Copper	**7440-50-8**	**53.5**		**2.16**
Lead	**7439-92-1**	**0.677**		**0.176**
Manganese	**7439-96-5**	**11.6**		**1.55**
Molybdenum	**7439-98-7**	**2.46**		**0.294**
Nickel	**7440-02-0**	**1.24**		**0.535**
Selenium	**7782-49-2**	**0.183**	LJ, QX	**0.00735**
Thallium	**7440-28-0**	**0.00109**		**4.83E-4**
Vanadium	**7440-62-2**	**1.39**		**0.0434**
Zinc	7440-66-6	17.4	U	63.0

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 10/16/24 12:44
SUBMITTED: 10/07/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-092724-HM
Matrix: Air
Lab ID: 4100748-06
Sample Volume: 2002.381 m³
Filter ID:
Sampled: 09/27/24 23:59
Received: 10/07/24 12:28
Analysis Date: 10/09/24 04:19

Comments: Q9540542 - 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**	**0.0944**	SL	**0.0314**
Arsenic	**7440-38-2**	**0.311**		**0.00761**
Barium	**7440-39-3**	**6.26**		**0.869**
Beryllium	**7440-41-7**	**0.0204**		**0.00260**
Cadmium	7440-43-9	0.0127	U	0.0602
Chromium	**7440-47-3**	**4.37**		**1.80**
Cobalt	**7440-48-4**	**0.867**		**0.0354**
Copper	**7440-50-8**	**27.5**		**2.14**
Lead	**7439-92-1**	**0.648**		**0.174**
Manganese	**7439-96-5**	**21.5**		**1.54**
Molybdenum	**7439-98-7**	**1.46**		**0.292**
Nickel	**7440-02-0**	**2.58**		**0.530**
Selenium	**7782-49-2**	**0.215**	LJ, QX	**0.00728**
Thallium	**7440-28-0**	**0.00122**		**4.79E-4**
Vanadium	**7440-62-2**	**2.83**		**0.0430**
Zinc	7440-66-6	16.9	U	62.4

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 10/16/24 12:44
SUBMITTED: 10/07/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-092724-HM
Matrix: Air
Lab ID: 4100748-07
Sample Volume: 2051.359 m³
Filter ID:
Sampled: 09/27/24 23:59
Received: 10/07/24 12:28
Analysis Date: 10/09/24 04:38

Comments: Q9540540 - 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**	**0.0326**	SL	**0.0306**
Arsenic	**7440-38-2**	**0.131**		**0.00743**
Barium	**7440-39-3**	**2.69**		**0.849**
Beryllium	**7440-41-7**	**0.0199**		**0.00254**
Cadmium	7440-43-9	0.0223	U	0.0588
Chromium	**7440-47-3**	**2.66**		**1.75**
Cobalt	**7440-48-4**	**0.394**		**0.0346**
Copper	**7440-50-8**	**39.4**		**2.09**
Lead	**7439-92-1**	**0.212**		**0.170**
Manganese	**7439-96-5**	**10.8**		**1.50**
Molybdenum	**7439-98-7**	**2.44**		**0.285**
Nickel	**7440-02-0**	**1.46**		**0.517**
Selenium	**7782-49-2**	**0.160**	LJ, QX	**0.00711**
Thallium	**7440-28-0**	**7.75E-4**		**4.67E-4**
Vanadium	**7440-62-2**	**1.18**		**0.0420**
Zinc	7440-66-6	10.2	U	60.9

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 10/16/24 12:44
SUBMITTED: 10/07/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM07-092724-HM
Matrix: Air
Lab ID: 4100748-08
Sample Volume: 1938.915 m³
Filter ID:
Sampled: 09/27/24 23:59
Received: 10/07/24 12:28
Analysis Date: 10/09/24 04:58

Comments: Q9540539 - 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**	**0.0943**	SL	**0.0324**
Arsenic	**7440-38-2**	**0.224**		**0.00786**
Barium	**7440-39-3**	**2.96**		**0.898**
Beryllium	**7440-41-7**	**0.0133**		**0.00269**
Cadmium	7440-43-9	0.0400	U	0.0622
Chromium	**7440-47-3**	**45.3**		**1.85**
Cobalt	**7440-48-4**	**0.985**		**0.0366**
Copper	**7440-50-8**	**38.7**		**2.21**
Lead	**7439-92-1**	**0.329**		**0.180**
Manganese	**7439-96-5**	**18.6**		**1.59**
Molybdenum	**7439-98-7**	**3.19**		**0.301**
Nickel	**7440-02-0**	**21.9**		**0.547**
Selenium	**7782-49-2**	**0.205**	LJ, QX	**0.00752**
Thallium	**7440-28-0**	**0.00115**		**4.94E-4**
Vanadium	**7440-62-2**	**1.59**		**0.0444**
Zinc	7440-66-6	11.6	U	64.4

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 10/16/24 12:44
SUBMITTED: 10/07/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-FB01-092724-HM
Matrix: Air
Lab ID: 4100748-09
Sample Volume: 1983.38 m³
Filter ID:
Sampled: 09/27/24 00:00
Received: 10/07/24 12:28
Analysis Date: 10/09/24 05:18

Comments: Q9540537 - 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	0.00766	SL, U	0.0317
Arsenic	7440-38-2	0.00402	U	0.00769
Barium	7440-39-3	0.549	U	0.878
Beryllium	7440-41-7	2.72E-4	U	0.00263
Cadmium	7440-43-9	0.00179	U	0.0608
Chromium	7440-47-3	1.44	U	1.81
Cobalt	7440-48-4	0.0278	U	0.0358
Copper	7440-50-8	0.282	U	2.16
Lead	7439-92-1	0.0431	U	0.176
Manganese	7439-96-5	0.186	U	1.55
Molybdenum	7439-98-7	0.232	U	0.294
Nickel	7440-02-0	0.364	U	0.535
Selenium	7782-49-2	ND	LJ, QX, U	0.00735
Thallium	7440-28-0	3.96E-5	U	4.83E-4
Vanadium	7440-62-2	0.00641	U	0.0434
Zinc	7440-66-6	6.31	U	63.0

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

FILE #: 4205.00.003.001
REPORTED: 10/16/24 12:44
SUBMITTED: 10/07/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM05-092824-HM
Matrix: Air
Lab ID: 4100748-10
Sample Volume: 2045.705 m³
Filter ID:
Sampled: 09/28/24 23:59
Received: 10/07/24 12:28
Analysis Date: 10/09/24 05:36

Comments: Q9540538 - 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**	**0.0777**	SL	**0.0307**
Arsenic	**7440-38-2**	**0.249**		**0.00745**
Barium	**7440-39-3**	**3.38**		**0.851**
Beryllium	**7440-41-7**	**0.00770**		**0.00255**
Cadmium	7440-43-9	0.0243	U	0.0589
Chromium	**7440-47-3**	**2.38**		**1.76**
Cobalt	**7440-48-4**	**0.320**		**0.0347**
Copper	**7440-50-8**	**37.6**		**2.09**
Lead	**7439-92-1**	**0.434**		**0.170**
Manganese	**7439-96-5**	**9.19**		**1.50**
Molybdenum	**7439-98-7**	**1.90**		**0.286**
Nickel	**7440-02-0**	**1.21**		**0.519**
Selenium	**7782-49-2**	**0.199**	LJ, QX	**0.00713**
Thallium	**7440-28-0**	**0.00105**		**4.68E-4**
Vanadium	**7440-62-2**	**1.24**		**0.0421**
Zinc	7440-66-6	31.3	U	61.1

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FILE #: 4205.00.003.001
REPORTED: 10/16/24 12:44
SUBMITTED: 10/07/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-092824-HM
Matrix: Air
Lab ID: 4100748-11
Sample Volume: 2098.623 m³
Filter ID:
Sampled: 09/28/24 23:59
Received: 10/07/24 12:28
Analysis Date: 10/09/24 07:12

Comments: Q9540536 - 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	**0.0299**
Arsenic	**7440-38-2**	**0.245**		**0.00726**
Barium	**7440-39-3**	**4.78**		**0.830**
Beryllium	**7440-41-7**	**0.0121**		**0.00248**
Cadmium	7440-43-9	0.0107	U	0.0574
Chromium	**7440-47-3**	**2.73**		**1.71**
Cobalt	**7440-48-4**	**0.439**		**0.0338**
Copper	**7440-50-8**	**19.7**		**2.04**
Lead	**7439-92-1**	**0.671**		**0.166**
Manganese	**7439-96-5**	**13.1**		**1.47**
Molybdenum	**7439-98-7**	**1.22**		**0.278**
Nickel	**7440-02-0**	**1.37**		**0.505**
Selenium	**7782-49-2**	**0.229**	LJ, QX	**0.00695**
Thallium	**7440-28-0**	**0.00123**		**4.57E-4**
Vanadium	**7440-62-2**	**1.70**		**0.0410**
Zinc	7440-66-6	14.5	U	59.5

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FILE #: 4205.00.003.001
REPORTED: 10/16/24 12:44
SUBMITTED: 10/07/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-092824-HM
Matrix: Air
Lab ID: 4100748-12
Sample Volume: 1906.808 m³
Filter ID:
Sampled: 09/28/24 23:59
Received: 10/07/24 12:28
Analysis Date: 10/09/24 07:31

Comments: Q9540535 - 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**	**0.0409**	SL	**0.0329**
Arsenic	**7440-38-2**	**0.352**		**0.00800**
Barium	**7440-39-3**	**6.58**		**0.913**
Beryllium	**7440-41-7**	**0.0979**		**0.00273**
Cadmium	7440-43-9	0.0159	U	0.0632
Chromium	**7440-47-3**	**7.09**		**1.89**
Cobalt	**7440-48-4**	**1.49**		**0.0372**
Copper	**7440-50-8**	**39.4**		**2.24**
Lead	**7439-92-1**	**0.429**		**0.183**
Manganese	**7439-96-5**	**35.7**		**1.61**
Molybdenum	**7439-98-7**	**2.29**		**0.306**
Nickel	**7440-02-0**	**3.55**		**0.556**
Selenium	**7782-49-2**	**0.339**	LJ, QX	**0.00765**
Thallium	**7440-28-0**	**0.00232**		**5.03E-4**
Vanadium	**7440-62-2**	**4.02**		**0.0451**
Zinc	7440-66-6	11.2	U	65.5

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FILE #: 4205.00.003.001
REPORTED: 10/16/24 12:44
SUBMITTED: 10/07/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM07-092824-HM
Matrix: Air
Lab ID: 4100748-13
Sample Volume: 1788.267 m³
Filter ID:
Sampled: 09/28/24 23:59
Received: 10/07/24 12:28
Analysis Date: 10/09/24 07:51

Comments: Q9540533 - 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**	**0.0633**	SL	**0.0351**
Arsenic	**7440-38-2**	**0.261**		**0.00853**
Barium	**7440-39-3**	**2.35**		**0.974**
Beryllium	**7440-41-7**	**0.00734**		**0.00291**
Cadmium	7440-43-9	0.0265	U	0.0674
Chromium	**7440-47-3**	**4.24**		**2.01**
Cobalt	**7440-48-4**	**0.292**		**0.0397**
Copper	**7440-50-8**	**28.5**		**2.39**
Lead	**7439-92-1**	**0.262**		**0.195**
Manganese	**7439-96-5**	**8.89**		**1.72**
Molybdenum	**7439-98-7**	**2.07**		**0.327**
Nickel	**7440-02-0**	**2.26**		**0.593**
Selenium	**7782-49-2**	**0.177**	LJ, QX	**0.00815**
Thallium	**7440-28-0**	**0.00104**		**5.36E-4**
Vanadium	**7440-62-2**	**0.997**		**0.0481**
Zinc	7440-66-6	9.25	U	69.9

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FILE #: 4205.00.003.001
REPORTED: 10/16/24 12:44
SUBMITTED: 10/07/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM05-092924-HM
Matrix: Air
Lab ID: 4100748-14
Sample Volume: 1962.569 m³
Filter ID:
Sampled: 09/29/24 23:59
Received: 10/07/24 12:28
Analysis Date: 10/09/24 08:07

Comments: Q9540532 - 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**	**0.0484**	SL	**0.0320**
Arsenic	**7440-38-2**	**0.154**		**0.00777**
Barium	**7440-39-3**	**2.94**		**0.887**
Beryllium	**7440-41-7**	**0.00812**		**0.00265**
Cadmium	7440-43-9	0.0131	U	0.0614
Chromium	**7440-47-3**	**2.74**		**1.83**
Cobalt	**7440-48-4**	**0.268**		**0.0361**
Copper	**7440-50-8**	**50.5**		**2.18**
Lead	**7439-92-1**	**0.339**		**0.177**
Manganese	**7439-96-5**	**8.47**		**1.57**
Molybdenum	**7439-98-7**	**2.80**		**0.298**
Nickel	**7440-02-0**	**1.12**		**0.541**
Selenium	**7782-49-2**	**0.181**	LJ, QX	**0.00743**
Thallium	**7440-28-0**	**8.44E-4**		**4.88E-4**
Vanadium	**7440-62-2**	**1.16**		**0.0439**
Zinc	7440-66-6	8.07	U	63.7

CERTIFICATE OF ANALYSIS

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1777 Sentry Pkwy, Bldg 12
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FILE #: 4205.00.003.001
REPORTED: 10/16/24 12:44
SUBMITTED: 10/07/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-092924-HM
Matrix: Air
Lab ID: 4100748-15
Sample Volume: 2025.833 m³
Filter ID:
Sampled: 09/29/24 23:59
Received: 10/07/24 12:28
Analysis Date: 10/09/24 08:24

Comments: Q9540529 - 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**	**0.106**	SL	**0.0310**
Arsenic	**7440-38-2**	**0.297**		**0.00753**
Barium	**7440-39-3**	**4.51**		**0.859**
Beryllium	**7440-41-7**	**0.00995**		**0.00257**
Cadmium	7440-43-9	0.00938	U	0.0595
Chromium	**7440-47-3**	**2.35**		**1.77**
Cobalt	**7440-48-4**	**0.332**		**0.0350**
Copper	**7440-50-8**	**21.4**		**2.11**
Lead	**7439-92-1**	**0.529**		**0.172**
Manganese	**7439-96-5**	**10.7**		**1.52**
Molybdenum	**7439-98-7**	**1.45**		**0.288**
Nickel	**7440-02-0**	**1.07**		**0.524**
Selenium	**7782-49-2**	**0.214**	LJ, QX	**0.00720**
Thallium	**7440-28-0**	**9.85E-4**		**4.73E-4**
Vanadium	**7440-62-2**	**1.40**		**0.0425**
Zinc	7440-66-6	11.9	U	61.7

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: 10/16/24 12:44
SUBMITTED: 10/07/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-092924-HM
Matrix: Air
Lab ID: 4100748-16
Sample Volume: 1859.609 m³
Filter ID:
Sampled: 09/29/24 23:59
Received: 10/07/24 12:28
Analysis Date: 10/09/24 08:43

Comments: Q9540528 - 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	0.0286	SL, U	0.0338
Arsenic	**7440-38-2**	**0.121**		**0.00820**
Barium	**7440-39-3**	**2.31**		**0.936**
Beryllium	**7440-41-7**	**0.0140**		**0.00280**
Cadmium	7440-43-9	0.00693	U	0.0648
Chromium	**7440-47-3**	**2.76**		**1.93**
Cobalt	**7440-48-4**	**0.336**		**0.0381**
Copper	**7440-50-8**	**39.0**		**2.30**
Lead	**7439-92-1**	**0.225**		**0.187**
Manganese	**7439-96-5**	**8.34**		**1.65**
Molybdenum	**7439-98-7**	**2.23**		**0.314**
Nickel	**7440-02-0**	**1.14**		**0.570**
Selenium	**7782-49-2**	**0.141**	LJ, QX	**0.00784**
Thallium	**7440-28-0**	**6.65E-4**		**5.15E-4**
Vanadium	**7440-62-2**	**1.03**		**0.0463**
Zinc	7440-66-6	7.73	U	67.2

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FILE #: 4205.00.003.001
REPORTED: 10/16/24 12:44
SUBMITTED: 10/07/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM07-092924-HM
Matrix: Air
Lab ID: 4100748-17
Sample Volume: 1936.473 m³
Filter ID:
Sampled: 09/29/24 23:59
Received: 10/07/24 12:28
Analysis Date: 10/09/24 09:03

Comments: Q9540525 - 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**	**0.0475**	SL	**0.0324**
Arsenic	**7440-38-2**	**0.129**		**0.00787**
Barium	**7440-39-3**	**1.97**		**0.899**
Beryllium	**7440-41-7**	**0.00699**		**0.00269**
Cadmium	7440-43-9	0.00593	U	0.0623
Chromium	**7440-47-3**	**9.48**		**1.86**
Cobalt	**7440-48-4**	**0.367**		**0.0366**
Copper	**7440-50-8**	**26.7**		**2.21**
Lead	**7439-92-1**	**0.193**		**0.180**
Manganese	**7439-96-5**	**8.70**		**1.59**
Molybdenum	**7439-98-7**	**1.62**		**0.302**
Nickel	**7440-02-0**	**4.59**		**0.548**
Selenium	**7782-49-2**	**0.149**	LJ, QX	**0.00753**
Thallium	**7440-28-0**	**6.85E-4**		**4.95E-4**
Vanadium	**7440-62-2**	**1.02**		**0.0444**
Zinc	7440-66-6	6.25	U	64.5

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 10/16/24 12:44
SUBMITTED: 10/07/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-FB01-092924-HM
Matrix: Air
Lab ID: 4100748-18
Sample Volume: 1962.569 m³
Filter ID:
Sampled: 09/29/24 00:00
Received: 10/07/24 12:28
Analysis Date: 10/09/24 09:18

Comments: Q9540522 - 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	0.0242	SL, U	0.0320
Arsenic	7440-38-2	0.00520	U	0.00777
Barium	7440-39-3	0.486	U	0.887
Beryllium	7440-41-7	2.11E-4	U	0.00265
Cadmium	7440-43-9	0.00192	U	0.0614
Chromium	7440-47-3	1.26	U	1.83
Cobalt	7440-48-4	0.0265	U	0.0361
Copper	7440-50-8	1.26	U	2.18
Lead	7439-92-1	0.0648	U	0.177
Manganese	7439-96-5	0.249	U	1.57
Molybdenum	7439-98-7	0.207	U	0.298
Nickel	7440-02-0	0.335	U	0.541
Selenium	7782-49-2	0.00376	LJ, QX, U	0.00743
Thallium	7440-28-0	6.11E-5	U	4.88E-4
Vanadium	7440-62-2	0.0164	U	0.0439
Zinc	7440-66-6	13.6	U	63.7

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

FILE #: 4205.00.003.001
REPORTED: 10/16/24 12:44
SUBMITTED: 10/07/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM05-093024-HM
Matrix: Air
Lab ID: 4100748-19
Sample Volume: 2003.334 m³
Filter ID:
Sampled: 09/30/24 23:59
Received: 10/07/24 12:28
Analysis Date: 10/09/24 09:32

Comments: Q9540524 - 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**	**0.0976**	SL	**0.0313**
Arsenic	**7440-38-2**	**0.239**		**0.00761**
Barium	**7440-39-3**	**3.23**		**0.869**
Beryllium	**7440-41-7**	**0.00644**		**0.00260**
Cadmium	**7440-43-9**	**0.197**		**0.0602**
Chromium	**7440-47-3**	**2.02**		**1.79**
Cobalt	**7440-48-4**	**0.212**		**0.0354**
Copper	**7440-50-8**	**52.2**		**2.14**
Lead	**7439-92-1**	**0.583**		**0.174**
Manganese	**7439-96-5**	**6.43**		**1.53**
Molybdenum	**7439-98-7**	**2.66**		**0.292**
Nickel	**7440-02-0**	**0.836**		**0.530**
Selenium	**7782-49-2**	**0.145**	LJ, QX	**0.00728**
Thallium	**7440-28-0**	**9.35E-4**		**4.78E-4**
Vanadium	**7440-62-2**	**0.907**		**0.0430**
Zinc	7440-66-6	11.1	U	62.4

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 10/16/24 12:44
SUBMITTED: 10/07/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-093024-HM
Matrix: Air
Lab ID: 4100748-20
Sample Volume: 2040.832 m³
Filter ID:
Sampled: 09/30/24 23:59
Received: 10/07/24 12:28
Analysis Date: 10/09/24 09:51

Comments: Q9540523 - 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**	**0.0889**	SL	**0.0308**
Arsenic	**7440-38-2**	**0.311**		**0.00747**
Barium	**7440-39-3**	**4.67**		**0.853**
Beryllium	**7440-41-7**	**0.0130**		**0.00255**
Cadmium	7440-43-9	0.0116	U	0.0591
Chromium	**7440-47-3**	**2.38**		**1.76**
Cobalt	**7440-48-4**	**0.383**		**0.0348**
Copper	**7440-50-8**	**26.0**		**2.10**
Lead	**7439-92-1**	**1.15**		**0.171**
Manganese	**7439-96-5**	**12.0**		**1.51**
Molybdenum	**7439-98-7**	**1.52**		**0.286**
Nickel	**7440-02-0**	**1.19**		**0.520**
Selenium	**7782-49-2**	**0.166**	LJ, QX	**0.00714**
Thallium	**7440-28-0**	**7.04E-4**		**4.70E-4**
Vanadium	**7440-62-2**	**1.50**		**0.0422**
Zinc	7440-66-6	16.6	U	61.2

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 10/16/24 12:44
SUBMITTED: 10/07/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-093024-HM
Matrix: Air
Lab ID: 4100748-21
Sample Volume: 2048.284 m³
Filter ID:
Sampled: 09/30/24 23:59
Received: 10/07/24 12:28
Analysis Date: 10/09/24 11:04

Comments: Q9540521 - 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**	**0.0382**	SL	**0.0307**
Arsenic	**7440-38-2**	**0.121**		**0.00744**
Barium	**7440-39-3**	**2.44**		**0.850**
Beryllium	**7440-41-7**	**0.0230**		**0.00254**
Cadmium	7440-43-9	0.00841	U	0.0589
Chromium	**7440-47-3**	**2.63**		**1.76**
Cobalt	**7440-48-4**	**0.358**		**0.0346**
Copper	**7440-50-8**	**41.8**		**2.09**
Lead	**7439-92-1**	**0.240**		**0.170**
Manganese	**7439-96-5**	**8.94**		**1.50**
Molybdenum	**7439-98-7**	**2.30**		**0.285**
Nickel	**7440-02-0**	**1.18**		**0.518**
Selenium	**7782-49-2**	**0.117**	LJ, QX	**0.00712**
Thallium	**7440-28-0**	**7.32E-4**		**4.68E-4**
Vanadium	**7440-62-2**	**0.990**		**0.0420**
Zinc	7440-66-6	8.08	U	61.0

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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: 10/16/24 12:44
SUBMITTED: 10/07/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM07-093024-HM
Matrix: Air
Lab ID: 4100748-22
Sample Volume: 1928.87 m³
Filter ID:
Sampled: 09/30/24 23:59
Received: 10/07/24 12:28
Analysis Date: 10/09/24 00:09

Comments: Q9540520 - MS/MSD Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0673**	SL	**0.0326**
Arsenic	**7440-38-2**	**0.186**		**0.00790**
Barium	**7440-39-3**	**3.93**		**0.903**
Beryllium	**7440-41-7**	**0.0195**		**0.00270**
Cadmium	7440-43-9	0.0128	U	0.0625
Chromium	**7440-47-3**	**4.56**	QM-07	**1.86**
Cobalt	**7440-48-4**	**0.472**	D-F	**0.0368**
Copper	**7440-50-8**	**34.1**	QM-07	**2.22**
Lead	**7439-92-1**	**0.250**		**0.181**
Manganese	**7439-96-5**	**15.1**	QM-07	**1.59**
Molybdenum	**7439-98-7**	**1.85**	QM-07	**0.303**
Nickel	**7440-02-0**	**3.43**	D-F, QM-07	**0.550**
Selenium	**7782-49-2**	**0.162**	LJ, QX	**0.00756**
Thallium	**7440-28-0**	**0.00116**		**4.97E-4**
Vanadium	**7440-62-2**	**1.20**		**0.0446**
Zinc	7440-66-6	10.2	U	64.8

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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: 10/16/24 12:44
SUBMITTED: 10/07/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM05-100124-HM
Matrix: Air
Lab ID: 4100748-23
Sample Volume: 2109.918 m³
Filter ID:
Sampled: 10/01/24 23:59
Received: 10/07/24 12:28
Analysis Date: 10/09/24 11:18

Comments: Q9540519 - 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**	**0.0806**	SL	**0.0298**
Arsenic	**7440-38-2**	**0.242**		**0.00723**
Barium	**7440-39-3**	**3.09**		**0.825**
Beryllium	**7440-41-7**	**0.00799**		**0.00247**
Cadmium	**7440-43-9**	**0.0869**		**0.0571**
Chromium	**7440-47-3**	**2.32**		**1.70**
Cobalt	**7440-48-4**	**0.303**		**0.0336**
Copper	**7440-50-8**	**49.3**		**2.03**
Lead	**7439-92-1**	**0.582**		**0.165**
Manganese	**7439-96-5**	**9.00**		**1.46**
Molybdenum	**7439-98-7**	**2.60**		**0.277**
Nickel	**7440-02-0**	**1.26**		**0.503**
Selenium	**7782-49-2**	**0.189**	LJ, QX	**0.00691**
Thallium	**7440-28-0**	**8.27E-4**		**4.54E-4**
Vanadium	**7440-62-2**	**1.13**		**0.0408**
Zinc	7440-66-6	15.8	U	59.2

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Blue Bell, PA 19422
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FILE #: 4205.00.003.001
REPORTED: 10/16/24 12:44
SUBMITTED: 10/07/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-100124-HM
Matrix: Air
Lab ID: 4100748-24
Sample Volume: 2064.392 m³
Filter ID:
Sampled: 10/01/24 23:59
Received: 10/07/24 12:28
Analysis Date: 10/09/24 11:35

Comments: Q9540513 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.114**	SL	**0.0304**
Arsenic	**7440-38-2**	**0.263**		**0.00738**
Barium	**7440-39-3**	**4.17**		**0.843**
Beryllium	**7440-41-7**	**0.0116**		**0.00252**
Cadmium	7440-43-9	0.00800	U	0.0584
Chromium	**7440-47-3**	**2.42**		**1.74**
Cobalt	**7440-48-4**	**0.417**		**0.0344**
Copper	**7440-50-8**	**18.0**		**2.07**
Lead	**7439-92-1**	**0.566**		**0.169**
Manganese	**7439-96-5**	**12.1**		**1.49**
Molybdenum	**7439-98-7**	**1.23**		**0.283**
Nickel	**7440-02-0**	**1.30**		**0.514**
Selenium	**7782-49-2**	**0.205**	LJ, QX	**0.00706**
Thallium	**7440-28-0**	**6.72E-4**		**4.64E-4**
Vanadium	**7440-62-2**	**1.57**		**0.0417**
Zinc	7440-66-6	10.2	U	60.5

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Tetra Tech, Inc.
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Blue Bell, PA 19422
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PHONE: (703) 885-5495 **FAX:**

FILE #: 4205.00.003.001
REPORTED: 10/16/24 12:44
SUBMITTED: 10/07/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-100124-HM
Matrix: Air
Lab ID: 4100748-25
Sample Volume: 2053.083 m³
Filter ID:
Sampled: 10/01/24 23:59
Received: 10/07/24 12:28
Analysis Date: 10/09/24 11:52

Comments: Q9540512 - 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**	**0.0447**	SL	**0.0306**
Arsenic	**7440-38-2**	**0.160**		**0.00743**
Barium	**7440-39-3**	**3.17**		**0.848**
Beryllium	**7440-41-7**	**0.0339**		**0.00254**
Cadmium	7440-43-9	0.00976	U	0.0587
Chromium	**7440-47-3**	**3.28**		**1.75**
Cobalt	**7440-48-4**	**0.624**		**0.0346**
Copper	**7440-50-8**	**44.6**		**2.08**
Lead	**7439-92-1**	**0.255**		**0.170**
Manganese	**7439-96-5**	**13.7**		**1.50**
Molybdenum	**7439-98-7**	**2.29**		**0.284**
Nickel	**7440-02-0**	**1.79**		**0.517**
Selenium	**7782-49-2**	**0.188**	LJ, QX	**0.00710**
Thallium	**7440-28-0**	**8.72E-4**		**4.67E-4**
Vanadium	**7440-62-2**	**1.48**		**0.0419**
Zinc	7440-66-6	8.51	U	60.9

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FILE #: 4205.00.003.001
REPORTED: 10/16/24 12:44
SUBMITTED: 10/07/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM07-100124-HM
Matrix: Air
Lab ID: 4100748-26
Sample Volume: 1942.985 m³
Filter ID:
Sampled: 10/01/24 23:59
Received: 10/07/24 12:28
Analysis Date: 10/09/24 12:07

Comments: Q9540511 - 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**	**0.0689**	SL	**0.0323**
Arsenic	**7440-38-2**	**0.179**		**0.00785**
Barium	**7440-39-3**	**2.34**		**0.896**
Beryllium	**7440-41-7**	**0.00770**		**0.00268**
Cadmium	7440-43-9	0.0102	U	0.0620
Chromium	**7440-47-3**	**14.1**		**1.85**
Cobalt	**7440-48-4**	**0.450**		**0.0365**
Copper	**7440-50-8**	**31.2**		**2.20**
Lead	**7439-92-1**	**0.265**		**0.179**
Manganese	**7439-96-5**	**10.7**		**1.58**
Molybdenum	**7439-98-7**	**2.28**		**0.301**
Nickel	**7440-02-0**	**6.27**		**0.546**
Selenium	**7782-49-2**	**0.179**	LJ, QX	**0.00750**
Thallium	**7440-28-0**	**7.51E-4**		**4.93E-4**
Vanadium	**7440-62-2**	**1.08**		**0.0443**
Zinc	7440-66-6	8.35	U	64.3

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Tetra Tech, Inc.
1777 Sentry Pkwy, Bldg 12
Blue Bell, PA 19422
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FILE #: 4205.00.003.001
REPORTED: 10/16/24 12:44
SUBMITTED: 10/07/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-FB01-100124-HM
Matrix: Air
Lab ID: 4100748-27
Sample Volume: 2109.918 m³
Filter ID:
Sampled: 10/01/24 00:00
Received: 10/07/24 12:28
Analysis Date: 10/09/24 12:23

Comments: Q8522553 - 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	0.0181	SL, U	0.0298
Arsenic	7440-38-2	0.00394	U	0.00723
Barium	7440-39-3	0.814	U	0.825
Beryllium	7440-41-7	3.18E-6	U	0.00247
Cadmium	7440-43-9	8.67E-4	U	0.0571
Chromium	7440-47-3	0.839	U	1.70
Cobalt	7440-48-4	0.0120	U	0.0336
Copper	7440-50-8	0.575	U	2.03
Lead	7439-92-1	0.0278	U	0.165
Manganese	7439-96-5	0.190	U	1.46
Molybdenum	7439-98-7	0.151	U	0.277
Nickel	7440-02-0	0.390	U	0.503
Selenium	7782-49-2	0.00239	LJ, QX, U	0.00691
Thallium	7440-28-0	6.30E-5	U	4.54E-4
Vanadium	7440-62-2	0.0100	U	0.0408
Zinc	7440-66-6	3.23	U	59.2

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

FILE #: 4205.00.003.001
REPORTED: 10/16/24 12:44
SUBMITTED: 10/07/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM05-100224-HM
Matrix: Air
Lab ID: 4100748-28
Sample Volume: 2036.278 m³
Filter ID:
Sampled: 10/02/24 23:59
Received: 10/07/24 12:28
Analysis Date: 10/09/24 12:37

Comments: Q8522555 - 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	**0.0308**
Arsenic	**7440-38-2**	**0.293**		**0.00749**
Barium	**7440-39-3**	**4.62**		**0.855**
Beryllium	**7440-41-7**	**0.0117**		**0.00256**
Cadmium	7440-43-9	0.0363	U	0.0592
Chromium	**7440-47-3**	**6.28**		**1.77**
Cobalt	**7440-48-4**	**0.620**		**0.0348**
Copper	**7440-50-8**	**51.0**		**2.10**
Lead	**7439-92-1**	**0.689**		**0.171**
Manganese	**7439-96-5**	**15.1**		**1.51**
Molybdenum	**7439-98-7**	**2.53**		**0.287**
Nickel	**7440-02-0**	**6.37**		**0.521**
Selenium	**7782-49-2**	**0.206**	LJ, QX	**0.00716**
Thallium	**7440-28-0**	**0.00101**		**4.71E-4**
Vanadium	**7440-62-2**	**1.84**		**0.0423**
Zinc	7440-66-6	22.8	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: 10/16/24 12:44
SUBMITTED: 10/07/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-100224-HM
Matrix: Air
Lab ID: 4100748-29
Sample Volume: 2066.979 m³
Filter ID:
Sampled: 10/02/24 23:59
Received: 10/07/24 12:28
Analysis Date: 10/09/24 12:53

Comments: Q8522554 - 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**	**0.179**	SL	**0.0304**
Arsenic	**7440-38-2**	**0.654**		**0.00738**
Barium	**7440-39-3**	**6.30**		**0.842**
Beryllium	**7440-41-7**	**0.0152**		**0.00252**
Cadmium	7440-43-9	0.0122	U	0.0583
Chromium	**7440-47-3**	**3.11**		**1.74**
Cobalt	**7440-48-4**	**0.647**		**0.0343**
Copper	**7440-50-8**	**24.8**		**2.07**
Lead	**7439-92-1**	**0.649**		**0.168**
Manganese	**7439-96-5**	**17.1**		**1.49**
Molybdenum	**7439-98-7**	**1.31**		**0.283**
Nickel	**7440-02-0**	**2.20**		**0.513**
Selenium	**7782-49-2**	**0.240**	LJ, QX	**0.00705**
Thallium	**7440-28-0**	**9.25E-4**		**4.64E-4**
Vanadium	**7440-62-2**	**2.39**		**0.0416**
Zinc	7440-66-6	13.5	U	60.5

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 10/16/24 12:44
SUBMITTED: 10/07/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-100224-HM
Matrix: Air
Lab ID: 4100748-30
Sample Volume: 2035.514 m³
Filter ID:
Sampled: 10/02/24 23:59
Received: 10/07/24 12:28
Analysis Date: 10/09/24 13:12

Comments: Q8522550 - 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**	**0.0613**	SL	**0.0309**
Arsenic	**7440-38-2**	**0.172**		**0.00749**
Barium	**7440-39-3**	**3.65**		**0.855**
Beryllium	**7440-41-7**	**0.0228**		**0.00256**
Cadmium	7440-43-9	0.0256	U	0.0592
Chromium	**7440-47-3**	**3.14**		**1.77**
Cobalt	**7440-48-4**	**0.593**		**0.0348**
Copper	**7440-50-8**	**59.6**		**2.10**
Lead	**7439-92-1**	**0.361**		**0.171**
Manganese	**7439-96-5**	**17.2**		**1.51**
Molybdenum	**7439-98-7**	**2.76**		**0.287**
Nickel	**7440-02-0**	**3.76**		**0.521**
Selenium	**7782-49-2**	**0.202**	LJ, QX	**0.00716**
Thallium	**7440-28-0**	**0.00102**		**4.71E-4**
Vanadium	**7440-62-2**	**1.75**		**0.0423**
Zinc	7440-66-6	16.8	U	61.4

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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: 10/16/24 12:44
SUBMITTED: 10/07/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM07-100224-HM
Matrix: Air
Lab ID: 4100748-31
Sample Volume: 1924.855 m³
Filter ID:
Sampled: 10/02/24 23:59
Received: 10/07/24 12:28
Analysis Date: 10/09/24 14:24

Comments: Q8522549 - 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**	**0.112**	SL	**0.0326**
Arsenic	**7440-38-2**	**0.194**		**0.00792**
Barium	**7440-39-3**	**3.19**		**0.904**
Beryllium	**7440-41-7**	**0.0108**		**0.00270**
Cadmium	7440-43-9	0.0123	U	0.0626
Chromium	**7440-47-3**	**2.12**		**1.87**
Cobalt	**7440-48-4**	**0.351**		**0.0369**
Copper	**7440-50-8**	**38.9**		**2.22**
Lead	**7439-92-1**	**0.230**		**0.181**
Manganese	**7439-96-5**	**12.0**		**1.60**
Molybdenum	**7439-98-7**	**2.29**		**0.303**
Nickel	**7440-02-0**	**1.48**		**0.551**
Selenium	**7782-49-2**	**0.192**	LJ, QX	**0.00757**
Thallium	**7440-28-0**	**9.47E-4**	QB-04	**4.98E-4**
Vanadium	**7440-62-2**	**1.28**		**0.0447**
Zinc	7440-66-6	10.0	U	64.9

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 10/16/24 12:44
SUBMITTED: 10/07/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-LB01-100224-HM
Matrix: Air
Lab ID: 4100748-32
Sample Volume: 2036.278 m³
Filter ID:
Sampled: 10/02/24 00:00
Received: 10/07/24 12:28
Analysis Date: 10/09/24 15:00

Comments: Q8522545 - 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	0.0194	SL, U	0.0308
Arsenic	7440-38-2	0.00363	U	0.00749
Barium	**7440-39-3**	**0.969**		**0.855**
Beryllium	7440-41-7	ND	U	0.00256
Cadmium	7440-43-9	8.17E-4	U	0.0592
Chromium	7440-47-3	0.718	U	1.77
Cobalt	7440-48-4	0.00982	U	0.0348
Copper	7440-50-8	0.322	U	2.10
Lead	7439-92-1	0.0232	U	0.171
Manganese	7439-96-5	0.167	U	1.51
Molybdenum	7439-98-7	0.139	U	0.287
Nickel	7440-02-0	0.339	U	0.521
Selenium	7782-49-2	0.00104	LJ, QX, U	0.00716
Thallium	7440-28-0	8.35E-5	QB-04, U	4.71E-4
Vanadium	7440-62-2	0.00515	U	0.0423
Zinc	7440-66-6	2.78	U	61.4

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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 2410029 - B4J0804										
Calibration Blank (2410029-CCB1)				Prepared & Analyzed: 10/08/24						
Antimony	0.910		ng/l							
Arsenic	6.80		ng/l							
Barium	-1.71		ng/l							U
Beryllium	-1.99		ng/l							U
Cadmium	0.158		ng/l							
Chromium	2.80		ng/l							
Cobalt	0.0641		ng/l							
Copper	14.6		ng/l							
Lead	4.53		ng/l							
Manganese	1.85		ng/l							
Molybdenum	26.9		ng/l							
Nickel	0.313		ng/l							
Selenium	-1.81		ng/l							LJ, QX, U
Thallium	1.44		ng/l							QB-04
Vanadium	-62.7		ng/l							U
Zinc	-42.7		ng/l							U
Calibration Blank (2410029-CCB2)				Prepared & Analyzed: 10/08/24						
Antimony	0.443		ng/l							
Arsenic	2.79		ng/l							
Barium	-0.0192		ng/l							U
Beryllium	-2.30		ng/l							U
Cadmium	0.121		ng/l							
Chromium	1.55		ng/l							
Cobalt	0.0659		ng/l							
Copper	7.12		ng/l							
Lead	2.64		ng/l							
Manganese	1.42		ng/l							
Molybdenum	2.88		ng/l							
Nickel	2.03		ng/l							
Selenium	-6.08		ng/l							LJ, QX, U
Thallium	1.09		ng/l							
Vanadium	-68.2		ng/l							U
Zinc	-40.5		ng/l							U
Calibration Blank (2410029-CCB3)				Prepared: 10/08/24 Analyzed: 10/09/24						
Antimony	0.204		ng/l							
Arsenic	6.46		ng/l							
Barium	0.0174		ng/l							
Beryllium	-2.51		ng/l							U

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2410029 - B4J0804										
Calibration Blank (2410029-CCB3) Contin				Prepared: 10/08/24 Analyzed: 10/09/24						
Cadmium	0.118		ng/l							
Chromium	2.22		ng/l							
Cobalt	0.103		ng/l							
Copper	8.09		ng/l							
Lead	2.25		ng/l							
Manganese	0.976		ng/l							
Molybdenum	1.71		ng/l							
Nickel	1.22		ng/l							
Selenium	-2.96		ng/l							LJ, QX, U
Thallium	1.04		ng/l							
Vanadium	-77.6		ng/l							U
Zinc	-44.2		ng/l							U
Calibration Blank (2410029-CCB4)				Prepared: 10/08/24 Analyzed: 10/09/24						
Antimony	0.289		ng/l							
Arsenic	4.03		ng/l							
Barium	0.245		ng/l							
Beryllium	-3.09		ng/l							U
Cadmium	0.0148		ng/l							
Chromium	1.98		ng/l							
Cobalt	0.0764		ng/l							
Copper	6.59		ng/l							
Lead	1.65		ng/l							
Manganese	0.900		ng/l							
Molybdenum	1.16		ng/l							
Nickel	3.34		ng/l							
Selenium	16.1		ng/l							LJ, QX
Thallium	0.859		ng/l							
Vanadium	-78.6		ng/l							U
Zinc	-56.8		ng/l							U
Calibration Blank (2410029-CCB5)				Prepared: 10/08/24 Analyzed: 10/09/24						
Antimony	0.428		ng/l							
Arsenic	6.86		ng/l							
Barium	-0.0440		ng/l							U
Beryllium	-3.19		ng/l							U
Cadmium	0.0599		ng/l							
Chromium	2.10		ng/l							
Cobalt	0.0181		ng/l							
Copper	7.68		ng/l							

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2410029 - B4J0804										
Calibration Blank (2410029-CCB5) Contin				Prepared: 10/08/24 Analyzed: 10/09/24						
Lead	1.80		ng/l							
Manganese	1.72		ng/l							
Molybdenum	1.81		ng/l							
Nickel	3.48		ng/l							
Selenium	11.9		ng/l							LJ, QX
Thallium	0.848		ng/l							
Vanadium	-85.5		ng/l							U
Zinc	-47.1		ng/l							U
Calibration Blank (2410029-CCB6)				Prepared: 10/08/24 Analyzed: 10/09/24						
Antimony	0.0809		ng/l							
Arsenic	5.05		ng/l							
Barium	-0.0952		ng/l							U
Beryllium	-3.51		ng/l							U
Cadmium	0.0711		ng/l							
Chromium	2.08		ng/l							
Cobalt	0.147		ng/l							
Copper	7.94		ng/l							
Lead	1.78		ng/l							
Manganese	0.531		ng/l							
Molybdenum	1.97		ng/l							
Nickel	2.32		ng/l							
Selenium	-2.94		ng/l							LJ, QX, U
Thallium	0.941		ng/l							
Vanadium	-88.0		ng/l							U
Zinc	-38.0		ng/l							U
Calibration Blank (2410029-CCB7)				Prepared: 10/08/24 Analyzed: 10/09/24						
Antimony	0.617		ng/l							
Arsenic	1.98		ng/l							
Barium	-0.144		ng/l							U
Beryllium	-3.16		ng/l							U
Cadmium	0.0603		ng/l							
Chromium	1.05		ng/l							
Cobalt	0.0358		ng/l							
Copper	9.88		ng/l							
Lead	2.71		ng/l							
Manganese	0.434		ng/l							
Molybdenum	5.00		ng/l							
Nickel	2.58		ng/l							

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2410029 - B4J0804										
Calibration Blank (2410029-CCB7) Contin				Prepared: 10/08/24 Analyzed: 10/09/24						
Selenium	-2.08		ng/l							LJ, QX, U
Thallium	1.36		ng/l							QB-04
Vanadium	-90.6		ng/l							U
Zinc	-60.5		ng/l							U
Calibration Check (2410029-CCV1)				Prepared & Analyzed: 10/08/24						
Antimony	20100		ng/l	20000		101	90-110			
Arsenic	20200		ng/l	20000		101	90-110			
Barium	211000		ng/l	200000		106	90-110			
Beryllium	5030		ng/l	5000.0		101	90-110			
Cadmium	20400		ng/l	20000		102	90-110			
Chromium	240000		ng/l	240000		100	90-110			
Cobalt	51300		ng/l	50000		103	90-110			
Copper	2.07E6		ng/l	2.0000E6		104	90-110			
Lead	200000		ng/l	200000		99.8	90-110			
Manganese	509000		ng/l	500000		102	90-110			
Molybdenum	51300		ng/l	50000		103	90-110			
Nickel	123000		ng/l	120000		103	90-110			
Selenium	20300		ng/l	20000		102	90-110			LJ, QX
Thallium	501		ng/l	500.00		100	90-110			
Vanadium	19900		ng/l	20000		99.5	90-110			
Zinc	503000		ng/l	500000		101	90-110			
Calibration Check (2410029-CCV2)				Prepared & Analyzed: 10/08/24						
Antimony	20500		ng/l	20000		102	90-110			
Arsenic	20400		ng/l	20000		102	90-110			
Barium	211000		ng/l	200000		105	90-110			
Beryllium	4860		ng/l	5000.0		97.1	90-110			
Cadmium	20500		ng/l	20000		103	90-110			
Chromium	243000		ng/l	240000		101	90-110			
Cobalt	51500		ng/l	50000		103	90-110			
Copper	2.08E6		ng/l	2.0000E6		104	90-110			
Lead	202000		ng/l	200000		101	90-110			
Manganese	513000		ng/l	500000		103	90-110			
Molybdenum	51700		ng/l	50000		103	90-110			
Nickel	124000		ng/l	120000		103	90-110			
Selenium	20200		ng/l	20000		101	90-110			LJ, QX
Thallium	498		ng/l	500.00		99.6	90-110			
Vanadium	20100		ng/l	20000		101	90-110			
Zinc	508000		ng/l	500000		102	90-110			

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2410029 - B4J0804										
Calibration Check (2410029-CCV3)				Prepared: 10/08/24 Analyzed: 10/09/24						
Antimony	20400		ng/l	20000		102	90-110			
Arsenic	20400		ng/l	20000		102	90-110			
Barium	209000		ng/l	200000		105	90-110			
Beryllium	5050		ng/l	5000.0		101	90-110			
Cadmium	20700		ng/l	20000		103	90-110			
Chromium	242000		ng/l	240000		101	90-110			
Cobalt	51100		ng/l	50000		102	90-110			
Copper	2.06E6		ng/l	2.0000E6		103	90-110			
Lead	201000		ng/l	200000		100	90-110			
Manganese	510000		ng/l	500000		102	90-110			
Molybdenum	51600		ng/l	50000		103	90-110			
Nickel	123000		ng/l	120000		102	90-110			
Selenium	20200		ng/l	20000		101	90-110			LJ, QX
Thallium	491		ng/l	500.00		98.2	90-110			
Vanadium	20100		ng/l	20000		101	90-110			
Zinc	509000		ng/l	500000		102	90-110			
Calibration Check (2410029-CCV4)				Prepared: 10/08/24 Analyzed: 10/09/24						
Antimony	20300		ng/l	20000		101	90-110			
Arsenic	20200		ng/l	20000		101	90-110			
Barium	208000		ng/l	200000		104	90-110			
Beryllium	5200		ng/l	5000.0		104	90-110			
Cadmium	20500		ng/l	20000		103	90-110			
Chromium	241000		ng/l	240000		101	90-110			
Cobalt	50500		ng/l	50000		101	90-110			
Copper	2.06E6		ng/l	2.0000E6		103	90-110			
Lead	200000		ng/l	200000		100	90-110			
Manganese	508000		ng/l	500000		102	90-110			
Molybdenum	51300		ng/l	50000		103	90-110			
Nickel	122000		ng/l	120000		102	90-110			
Selenium	20200		ng/l	20000		101	90-110			LJ, QX
Thallium	490		ng/l	500.00		97.9	90-110			
Vanadium	20000		ng/l	20000		99.8	90-110			
Zinc	507000		ng/l	500000		101	90-110			
Calibration Check (2410029-CCV5)				Prepared: 10/08/24 Analyzed: 10/09/24						
Antimony	21100		ng/l	20000		105	90-110			
Arsenic	20800		ng/l	20000		104	90-110			
Barium	214000		ng/l	200000		107	90-110			
Beryllium	5260		ng/l	5000.0		105	90-110			

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2410029 - B4J0804										
Calibration Check (2410029-CCV5) Contin				Prepared: 10/08/24 Analyzed: 10/09/24						
Cadmium	21400		ng/l	20000		107	90-110			
Chromium	251000		ng/l	240000		104	90-110			
Cobalt	52300		ng/l	50000		105	90-110			
Copper	2.12E6		ng/l	2.0000E6		106	90-110			
Lead	206000		ng/l	200000		103	90-110			
Manganese	527000		ng/l	500000		105	90-110			
Molybdenum	53600		ng/l	50000		107	90-110			
Nickel	126000		ng/l	120000		105	90-110			
Selenium	20700		ng/l	20000		104	90-110			LJ, QX
Thallium	497		ng/l	500.00		99.5	90-110			
Vanadium	20600		ng/l	20000		103	90-110			
Zinc	521000		ng/l	500000		104	90-110			
Calibration Check (2410029-CCV6)				Prepared: 10/08/24 Analyzed: 10/09/24						
Antimony	21000		ng/l	20000		105	90-110			
Arsenic	20900		ng/l	20000		104	90-110			
Barium	219000		ng/l	200000		110	90-110			
Beryllium	5280		ng/l	5000.0		106	90-110			
Cadmium	21300		ng/l	20000		107	90-110			
Chromium	252000		ng/l	240000		105	90-110			
Cobalt	52900		ng/l	50000		106	90-110			
Copper	2.15E6		ng/l	2.0000E6		108	90-110			
Lead	207000		ng/l	200000		103	90-110			
Manganese	532000		ng/l	500000		106	90-110			
Molybdenum	54500		ng/l	50000		109	90-110			
Nickel	128000		ng/l	120000		107	90-110			
Selenium	20800		ng/l	20000		104	90-110			LJ, QX
Thallium	507		ng/l	500.00		101	90-110			
Vanadium	20700		ng/l	20000		103	90-110			
Zinc	527000		ng/l	500000		105	90-110			
Calibration Check (2410029-CCV7)				Prepared: 10/08/24 Analyzed: 10/09/24						
Antimony	21000		ng/l	20000		105	90-110			
Arsenic	20700		ng/l	20000		104	90-110			
Barium	221000		ng/l	200000		110	90-110			
Beryllium	4990		ng/l	5000.0		99.7	90-110			
Cadmium	21300		ng/l	20000		107	90-110			
Chromium	253000		ng/l	240000		105	90-110			
Cobalt	52600		ng/l	50000		105	90-110			
Copper	2.14E6		ng/l	2.0000E6		107	90-110			

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2410029 - B4J0804										
Calibration Check (2410029-CCV7) Contin				Prepared: 10/08/24 Analyzed: 10/09/24						
Lead	208000		ng/l	200000		104	90-110			
Manganese	524000		ng/l	500000		105	90-110			
Molybdenum	54800		ng/l	50000		110	90-110			
Nickel	127000		ng/l	120000		106	90-110			
Selenium	20700		ng/l	20000		103	90-110			LJ, QX
Thallium	512		ng/l	500.00		102	90-110			
Vanadium	20900		ng/l	20000		104	90-110			
Zinc	526000		ng/l	500000		105	90-110			
High Cal Check (2410029-HCV1)				Prepared & Analyzed: 10/08/24						
Antimony	40100		ng/l	40000		100	95-105			
Arsenic	40000		ng/l	40000		100	95-105			
Barium	415000		ng/l	400000		104	95-105			
Beryllium	10000		ng/l	10000		100	95-105			
Cadmium	39900		ng/l	40000		99.9	95-105			
Chromium	478000		ng/l	480000		99.5	95-105			
Cobalt	99300		ng/l	100000		99.3	95-105			
Copper	3.96E6		ng/l	4.0000E6		99.0	95-105			
Lead	400000		ng/l	400000		100	95-105			
Manganese	991000		ng/l	1.0000E6		99.1	95-105			
Molybdenum	102000		ng/l	100000		102	95-105			
Nickel	238000		ng/l	240000		99.3	95-105			
Selenium	39800		ng/l	40000		99.4	95-105			LJ, QX
Thallium	1010		ng/l	1000.0		101	95-105			
Vanadium	39900		ng/l	40000		99.8	95-105			
Zinc	1.00E6		ng/l	1.0000E6		100	95-105			
Initial Cal Blank (2410029-ICB1)				Prepared & Analyzed: 10/08/24						
Antimony	0.464		ng/l							
Arsenic	0.394		ng/l							
Barium	0.565		ng/l							
Beryllium	-2.11		ng/l							U
Cadmium	0.149		ng/l							
Chromium	4.51		ng/l							
Cobalt	0.113		ng/l							
Copper	18.2		ng/l							
Lead	4.20		ng/l							
Manganese	4.42		ng/l							
Molybdenum	9.48		ng/l							
Nickel	0.161		ng/l							

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2410029 - B4J0804										
Initial Cal Blank (2410029-ICB1) Continu				Prepared & Analyzed: 10/08/24						
Selenium	-2.20		ng/l							LJ, QX, U
Thallium	1.28		ng/l							
Vanadium	-61.6		ng/l							U
Zinc	-32.4		ng/l							U
Initial Cal Check (2410029-ICV1)				Prepared & Analyzed: 10/08/24						
Antimony	19900		ng/l	20000		99.5	90-110			
Arsenic	19200		ng/l	20000		96.2	90-110			
Barium	196000		ng/l	200000		98.1	90-110			
Beryllium	4990		ng/l	5000.0		99.8	90-110			
Cadmium	20500		ng/l	20000		102	90-110			
Chromium	238000		ng/l	240000		99.1	90-110			
Cobalt	50200		ng/l	50000		100	90-110			
Copper	2.06E6		ng/l	2.0000E6		103	90-110			
Lead	200000		ng/l	200000		99.8	90-110			
Manganese	497000		ng/l	500000		99.5	90-110			
Molybdenum	50100		ng/l	50000		100	90-110			
Nickel	124000		ng/l	120000		104	90-110			
Selenium	20300		ng/l	20000		102	90-110			LJ, QX
Thallium	502		ng/l	500.00		100	90-110			
Vanadium	20300		ng/l	20000		102	90-110			
Zinc	518000		ng/l	500000		104	90-110			
Interference Check A (2410029-IFA1)				Prepared & Analyzed: 10/08/24						
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	330000		ng/l	300000		110	80-120			
Nickel	0.00		ng/l				80-120			U
Selenium	0.00		ng/l				80-120			LJ, QX, 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

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 10/16/24 12:44
SUBMITTED: 10/07/24
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 2410029 - B4J0804										
Interference Check B (2410029-IFB1)				Prepared & Analyzed: 10/08/24						
Antimony	20600		ng/l	20000		103	80-120			
Arsenic	20200		ng/l	20000		101	80-120			
Barium	209000		ng/l	200000		104	80-120			
Beryllium	4790		ng/l	5000.0		95.9	80-120			
Cadmium	19900		ng/l	20000		99.3	80-120			
Chromium	231000		ng/l	240000		96.1	80-120			
Cobalt	51400		ng/l	50000		103	80-120			
Copper	1.91E6		ng/l	2.0000E6		95.7	80-120			
Lead	208000		ng/l	200000		104	80-120			
Manganese	513000		ng/l	500000		103	80-120			
Molybdenum	388000		ng/l	350000		111	80-120			
Nickel	118000		ng/l	120000		98.4	80-120			
Selenium	19400		ng/l	20000		96.8	80-120			LJ, QX
Thallium	535		ng/l	500.00		107	80-120			
Vanadium	19700		ng/l	20000		98.6	80-120			
Zinc	475000		ng/l	500000		94.9	80-120			
Batch B4J0804 - ICP-MS Extraction										
Blank (B4J0804-BLK1)				Prepared & Analyzed: 10/08/24						
Antimony	ND	0.0386	ng/m³ Air							SL, U
Arsenic	ND	0.00937	ng/m³ Air							U
Barium	ND	1.07	ng/m³ Air							U
Beryllium	ND	0.00320	ng/m³ Air							U
Cadmium	ND	0.0741	ng/m³ Air							U
Chromium	ND	2.21	ng/m³ Air							U
Cobalt	ND	0.0436	ng/m³ Air							U
Copper	ND	2.63	ng/m³ Air							U
Lead	ND	0.214	ng/m³ Air							U
Manganese	ND	1.89	ng/m³ Air							U
Molybdenum	ND	0.359	ng/m³ Air							U
Nickel	ND	0.652	ng/m³ Air							U
Selenium	ND	0.00896	ng/m³ Air							LJ, QX, U
Thallium	ND	5.89E-4	ng/m³ Air							QB-04, U
Vanadium	ND	0.0529	ng/m³ Air							U
Zinc	ND	76.8	ng/m³ Air							U
LCS (B4J0804-BS1)				Prepared & Analyzed: 10/08/24						
Antimony	0.764	0.0386	ng/m³ Air	1.3829		55.3	80-120			SL
Arsenic	2.70	0.00937	ng/m³ Air	2.7658		97.7	80-120			
Barium	29.3	1.07	ng/m³ Air	27.658		106	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 B4J0804 - ICP-MS Extraction										
LCS (B4J0804-BS1) Continued				Prepared & Analyzed: 10/08/24						
Beryllium	1.37	0.00320	ng/m³ Air	1.3829		99.0	80-120			
Cadmium	1.40	0.0741	ng/m³ Air	1.3829		101	80-120			
Chromium	14.6	2.21	ng/m³ Air	13.829		106	80-120			
Cobalt	1.38	0.0436	ng/m³ Air	1.3829		100	80-120			
Copper	28.7	2.63	ng/m³ Air	27.658		104	80-120			
Lead	13.0	0.214	ng/m³ Air	13.829		94.1	80-120			
Manganese	8.37	1.89	ng/m³ Air	8.2975		101	80-120			
Molybdenum	1.54	0.359	ng/m³ Air	1.3829		111	80-120			
Nickel	3.20	0.652	ng/m³ Air	2.7658		116	80-120			
Selenium	2.73	0.00896	ng/m³ Air	2.7658		98.7	80-120			LJ, QX
Thallium	0.137	5.89E-4	ng/m³ Air	0.13829		99.1	80-120			QB-04
Vanadium	2.71	0.0529	ng/m³ Air	2.7658		98.1	80-120			
Zinc	90.4	76.8	ng/m³ Air	82.975		109	80-120			
LCS (B4J0804-BS2)				Prepared & Analyzed: 10/08/24						
Antimony	0.784	0.0386	ng/m³ Air	1.3829		56.7	80-120			SL
Arsenic	2.71	0.00937	ng/m³ Air	2.7658		98.1	80-120			
Barium	29.4	1.07	ng/m³ Air	27.658		106	80-120			
Beryllium	1.32	0.00320	ng/m³ Air	1.3829		95.4	80-120			
Cadmium	1.40	0.0741	ng/m³ Air	1.3829		101	80-120			
Chromium	14.7	2.21	ng/m³ Air	13.829		106	80-120			
Cobalt	1.37	0.0436	ng/m³ Air	1.3829		99.3	80-120			
Copper	28.4	2.63	ng/m³ Air	27.658		103	80-120			
Lead	13.0	0.214	ng/m³ Air	13.829		94.3	80-120			
Manganese	8.36	1.89	ng/m³ Air	8.2975		101	80-120			
Molybdenum	1.55	0.359	ng/m³ Air	1.3829		112	80-120			
Nickel	3.32	0.652	ng/m³ Air	2.7658		120	80-120			
Selenium	2.72	0.00896	ng/m³ Air	2.7658		98.3	80-120			LJ, QX
Thallium	0.135	5.89E-4	ng/m³ Air	0.13829		98.0	80-120			
Vanadium	2.72	0.0529	ng/m³ Air	2.7658		98.4	80-120			
Zinc	91.7	76.8	ng/m³ Air	82.975		111	80-120			
Duplicate (B4J0804-DUP1)		**Source: 4100748-02**		Prepared & Analyzed: 10/08/24						
Antimony	0.129	0.0312	ng/m³ Air		0.137			5.87	10	SL
Arsenic	0.294	0.00758	ng/m³ Air		0.273			7.29	10	
Barium	6.97	0.865	ng/m³ Air		5.71			19.8	10	
Beryllium	0.0153	0.00259	ng/m³ Air		0.0147			4.01	10	
Cadmium	ND	0.0599	ng/m³ Air		ND				10	U
Chromium	3.41	1.79	ng/m³ Air		3.39			0.481	10	
Cobalt	0.559	0.0352	ng/m³ Air		0.533			4.80	10	

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REPORTED: 10/16/24 12:44
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AQS SITE CODE:
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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4J0804 - ICP-MS Extraction										
Duplicate (B4J0804-DUP1) Continued			**Source: 4100748-02**		Prepared & Analyzed: 10/08/24					
Copper	32.2	2.13	ng/m³ Air		31.8			1.42	10	
Lead	0.816	0.173	ng/m³ Air		0.798			2.28	10	
Manganese	16.9	1.53	ng/m³ Air		16.3			3.34	10	
Molybdenum	1.85	0.290	ng/m³ Air		1.76			4.89	10	
Nickel	1.69	0.527	ng/m³ Air		1.56			8.19	10	
Selenium	0.227	0.00724	ng/m³ Air		0.205			10.6	10	LJ, QX
Thallium	0.00102	4.76E-4	ng/m³ Air		0.00106			4.11	10	QB-04
Vanadium	1.76	0.0428	ng/m³ Air		1.71			2.88	10	
Zinc	87.8	62.1	ng/m³ Air		85.9			2.27	10	
Duplicate (B4J0804-DUP2)			**Source: 4100748-22**		Prepared: 10/08/24 Analyzed: 10/09/24					
Antimony	0.0653	0.0326	ng/m³ Air		0.0673			3.04	10	SL
Arsenic	0.177	0.00790	ng/m³ Air		0.186			4.75	10	
Barium	4.05	0.903	ng/m³ Air		3.93			2.99	10	
Beryllium	0.0196	0.00270	ng/m³ Air		0.0195			0.839	10	
Cadmium	ND	0.0625	ng/m³ Air		ND				10	U
Chromium	3.00	1.86	ng/m³ Air		4.56			41.3	10	
Cobalt	0.386	0.0368	ng/m³ Air		0.472			20.1	10	D-F
Copper	31.1	2.22	ng/m³ Air		34.1			9.41	10	
Lead	0.231	0.181	ng/m³ Air		0.250			8.02	10	
Manganese	13.8	1.59	ng/m³ Air		15.1			8.81	10	
Molybdenum	1.63	0.303	ng/m³ Air		1.85			12.4	10	
Nickel	1.43	0.550	ng/m³ Air		3.43			82.0	10	D-F
Selenium	0.159	0.00756	ng/m³ Air		0.162			2.25	10	LJ, QX
Thallium	9.38E-4	4.97E-4	ng/m³ Air		0.00116			21.3	10	
Vanadium	1.17	0.0446	ng/m³ Air		1.20			2.26	10	
Zinc	ND	64.8	ng/m³ Air		ND				10	U
Duplicate (B4J0804-DUP3)			**Source: 4100748-10**		Prepared: 10/08/24 Analyzed: 10/09/24					
Antimony	0.0771	0.0307	ng/m³ Air		0.0777			0.794	10	SL
Arsenic	0.255	0.00745	ng/m³ Air		0.249			2.16	10	
Barium	3.38	0.851	ng/m³ Air		3.38			0.186	10	
Beryllium	0.00793	0.00255	ng/m³ Air		0.00770			3.03	10	
Cadmium	ND	0.0589	ng/m³ Air		ND				10	U
Chromium	2.36	1.76	ng/m³ Air		2.38			0.961	10	
Cobalt	0.323	0.0347	ng/m³ Air		0.320			0.711	10	
Copper	37.2	2.09	ng/m³ Air		37.6			1.02	10	
Lead	0.431	0.170	ng/m³ Air		0.434			0.693	10	
Manganese	9.21	1.50	ng/m³ Air		9.19			0.287	10	
Molybdenum	1.91	0.286	ng/m³ Air		1.90			0.359	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 B4J0804 - ICP-MS Extraction										
Duplicate (B4J0804-DUP3) Continued		**Source: 4100748-10**		Prepared: 10/08/24 Analyzed: 10/09/24						
Nickel	1.21	0.519	ng/m³ Air		1.21			0.0544	10	
Selenium	0.191	0.00713	ng/m³ Air		0.199			3.85	10	LJ, QX
Thallium	0.00106	4.68E-4	ng/m³ Air		0.00105			1.44	10	
Vanadium	1.23	0.0421	ng/m³ Air		1.24			0.602	10	
Zinc	ND	61.1	ng/m³ Air		ND				10	U
Duplicate (B4J0804-DUP4)		**Source: 4100748-31**		Prepared: 10/08/24 Analyzed: 10/09/24						
Antimony	0.113	0.0326	ng/m³ Air		0.112			0.936	10	SL
Arsenic	0.196	0.00792	ng/m³ Air		0.194			1.05	10	
Barium	3.16	0.904	ng/m³ Air		3.19			0.742	10	
Beryllium	0.0106	0.00270	ng/m³ Air		0.0108			2.23	10	
Cadmium	ND	0.0626	ng/m³ Air		ND				10	U
Chromium	2.13	1.87	ng/m³ Air		2.12			0.161	10	
Cobalt	0.354	0.0369	ng/m³ Air		0.351			0.592	10	
Copper	38.9	2.22	ng/m³ Air		38.9			0.132	10	
Lead	0.231	0.181	ng/m³ Air		0.230			0.379	10	
Manganese	12.1	1.60	ng/m³ Air		12.0			0.774	10	
Molybdenum	2.30	0.303	ng/m³ Air		2.29			0.435	10	
Nickel	1.49	0.551	ng/m³ Air		1.48			1.02	10	
Selenium	0.185	0.00757	ng/m³ Air		0.192			3.30	10	LJ, QX
Thallium	9.19E-4	4.98E-4	ng/m³ Air		9.47E-4			2.96	10	QB-04
Vanadium	1.27	0.0447	ng/m³ Air		1.28			0.902	10	
Zinc	ND	64.9	ng/m³ Air		ND				10	U
Matrix Spike (B4J0804-MS1)		**Source: 4100748-02**		Prepared & Analyzed: 10/08/24						
Antimony	0.621	0.0312	ng/m³ Air	1.1180	0.137	43.3	80-120			SL
Arsenic	2.43	0.00758	ng/m³ Air	2.2361	0.273	96.3	80-120			
Barium	28.8	0.865	ng/m³ Air	22.361	5.71	103	80-120			
Beryllium	0.935	0.00259	ng/m³ Air	1.1180	0.0147	82.3	80-120			
Cadmium	1.14	0.0599	ng/m³ Air	1.1180	ND	102	80-120			
Chromium	13.9	1.79	ng/m³ Air	11.180	3.39	94.0	80-120			
Cobalt	1.63	0.0352	ng/m³ Air	1.1180	0.533	98.2	80-120			
Copper	54.4	2.13	ng/m³ Air	22.361	31.8	101	80-120			
Lead	11.5	0.173	ng/m³ Air	11.180	0.798	95.3	80-120			
Manganese	22.7	1.53	ng/m³ Air	6.7082	16.3	95.8	80-120			
Molybdenum	2.87	0.290	ng/m³ Air	1.1180	1.76	99.1	80-120			
Nickel	3.71	0.527	ng/m³ Air	2.2361	1.56	96.2	80-120			
Selenium	2.31	0.00724	ng/m³ Air	2.2361	0.205	94.2	80-120			LJ, QX
Thallium	0.110	4.76E-4	ng/m³ Air	0.11180	0.00106	97.2	80-120			QB-04
Vanadium	3.84	0.0428	ng/m³ Air	2.2361	1.71	95.1	80-120			

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4J0804 - ICP-MS Extraction										
Matrix Spike (B4J0804-MS1) Continued Source: 4100748-02 Prepared & Analyzed: 10/08/24										
Zinc	153	62.1	ng/m³ Air	67.082	85.9	99.7	80-120			
Matrix Spike (B4J0804-MS2) Source: 4100748-22 Prepared: 10/08/24 Analyzed: 10/09/24										
Antimony	0.675	0.0326	ng/m³ Air	1.1665	0.0673	52.1	80-120			SL
Arsenic	2.42	0.00790	ng/m³ Air	2.3330	0.186	95.7	80-120			
Barium	27.3	0.903	ng/m³ Air	23.330	3.93	100	80-120			
Beryllium	1.11	0.00270	ng/m³ Air	1.1665	0.0195	93.8	80-120			
Cadmium	1.19	0.0625	ng/m³ Air	1.1665	ND	102	80-120			
Chromium	13.6	1.86	ng/m³ Air	11.665	4.56	77.1	80-120			QM-07
Cobalt	1.51	0.0368	ng/m³ Air	1.1665	0.472	88.7	80-120			
Copper	50.4	2.22	ng/m³ Air	23.330	34.1	69.6	80-120			QM-07
Lead	11.4	0.181	ng/m³ Air	11.665	0.250	95.3	80-120			
Manganese	19.7	1.59	ng/m³ Air	6.9989	15.1	65.8	80-120			QM-07
Molybdenum	2.54	0.303	ng/m³ Air	1.1665	1.85	59.1	80-120			QM-07
Nickel	3.56	0.550	ng/m³ Air	2.3330	3.43	5.54	80-120			QM-07
Selenium	2.38	0.00756	ng/m³ Air	2.3330	0.162	95.2	80-120			LJ, QX
Thallium	0.116	4.97E-4	ng/m³ Air	0.11665	0.00116	98.3	80-120			
Vanadium	3.34	0.0446	ng/m³ Air	2.3330	1.20	91.7	80-120			
Zinc	81.8	64.8	ng/m³ Air	69.989	ND	117	80-120			
Matrix Spike Dup (B4J0804-MSD1) Source: 4100748-02 Prepared & Analyzed: 10/08/24										
Antimony	0.669	0.0312	ng/m³ Air	1.1180	0.137	47.6	80-120	7.46	20	SL
Arsenic	2.44	0.00758	ng/m³ Air	2.2361	0.273	96.7	80-120	0.315	20	
Barium	29.1	0.865	ng/m³ Air	22.361	5.71	105	80-120	1.17	20	
Beryllium	1.11	0.00259	ng/m³ Air	1.1180	0.0147	98.0	80-120	17.1	20	
Cadmium	1.15	0.0599	ng/m³ Air	1.1180	ND	103	80-120	1.32	20	
Chromium	14.1	1.79	ng/m³ Air	11.180	3.39	95.9	80-120	1.48	20	
Cobalt	1.75	0.0352	ng/m³ Air	1.1180	0.533	109	80-120	7.15	20	
Copper	56.1	2.13	ng/m³ Air	22.361	31.8	109	80-120	2.97	20	
Lead	11.7	0.173	ng/m³ Air	11.180	0.798	97.6	80-120	2.21	20	
Manganese	22.6	1.53	ng/m³ Air	6.7082	16.3	94.4	80-120	0.416	20	
Molybdenum	2.90	0.290	ng/m³ Air	1.1180	1.76	102	80-120	1.13	20	
Nickel	3.76	0.527	ng/m³ Air	2.2361	1.56	98.7	80-120	1.52	20	
Selenium	2.36	0.00724	ng/m³ Air	2.2361	0.205	96.2	80-120	1.92	20	LJ, QX
Thallium	0.111	4.76E-4	ng/m³ Air	0.11180	0.00106	98.7	80-120	1.50	20	QB-04
Vanadium	3.85	0.0428	ng/m³ Air	2.2361	1.71	95.7	80-120	0.315	20	
Zinc	151	62.1	ng/m³ Air	67.082	85.9	97.5	80-120	0.994	20	
Matrix Spike Dup (B4J0804-MSD2) Source: 4100748-22 Prepared: 10/08/24 Analyzed: 10/09/24										
Antimony	0.687	0.0326	ng/m³ Air	1.1665	0.0673	53.1	80-120	1.68	20	SL
Arsenic	2.47	0.00790	ng/m³ Air	2.3330	0.186	98.0	80-120	2.23	20	

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 10/16/24 12:44
SUBMITTED: 10/07/24
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 B4J0804 - ICP-MS Extraction										
Matrix Spike Dup (B4J0804-MSD2) Contir				**Source: 4100748-22**		Prepared: 10/08/24		Analyzed: 10/09/24		
Barium	27.8	0.903	ng/m³ Air	23.330	3.93	102	80-120	1.98	20	
Beryllium	1.16	0.00270	ng/m³ Air	1.1665	0.0195	97.4	80-120	3.67	20	
Cadmium	1.21	0.0625	ng/m³ Air	1.1665	ND	104	80-120	2.06	20	
Chromium	14.0	1.86	ng/m³ Air	11.665	4.56	81.2	80-120	3.44	20	
Cobalt	1.52	0.0368	ng/m³ Air	1.1665	0.472	89.8	80-120	0.879	20	
Copper	45.4	2.22	ng/m³ Air	23.330	34.1	48.2	80-120	10.4	20	QM-07
Lead	11.6	0.181	ng/m³ Air	11.665	0.250	97.3	80-120	2.05	20	
Manganese	19.4	1.59	ng/m³ Air	6.9989	15.1	61.7	80-120	1.46	20	QM-07
Molybdenum	2.33	0.303	ng/m³ Air	1.1665	1.85	41.4	80-120	8.51	20	QM-07
Nickel	3.28	0.550	ng/m³ Air	2.3330	3.43	NR	80-120	8.19	20	QM-07
Selenium	2.48	0.00756	ng/m³ Air	2.3330	0.162	99.3	80-120	3.96	20	QX, LJ
Thallium	0.118	4.97E-4	ng/m³ Air	0.11665	0.00116	100	80-120	2.10	20	
Vanadium	3.37	0.0446	ng/m³ Air	2.3330	1.20	93.2	80-120	1.02	20	
Zinc	81.7	64.8	ng/m³ Air	69.989	ND	117	80-120	0.0573	20	
Post Spike (B4J0804-PS1)				**Source: 4100748-02**		Prepared & Analyzed: 10/08/24				
Antimony	0.355	0.0312	ng/m³ Air	0.22361	0.137	97.7	75-125			SL
Arsenic	1.30	0.00758	ng/m³ Air	1.1180	0.273	91.9	75-125			
Barium	7.92	0.865	ng/m³ Air	2.2361	5.71	98.9	75-125			
Beryllium	0.230	0.00259	ng/m³ Air	0.22361	0.0147	96.1	75-125			
Cadmium	0.146	0.0599	ng/m³ Air	0.11180	ND	131	75-125			
Chromium	4.41	1.79	ng/m³ Air	1.1180	3.39	90.7	75-125			
Cobalt	0.747	0.0352	ng/m³ Air	0.22361	0.533	95.6	75-125			
Copper	42.7	2.13	ng/m³ Air	11.180	31.8	98.0	75-125			
Lead	22.8	0.173	ng/m³ Air	22.361	0.798	98.5	75-125			
Manganese	18.4	1.53	ng/m³ Air	2.2361	16.3	94.9	75-125			
Molybdenum	2.81	0.290	ng/m³ Air	1.1180	1.76	93.9	75-125			
Nickel	3.71	0.527	ng/m³ Air	2.2361	1.56	96.5	75-125			
Selenium	1.26	0.00724	ng/m³ Air	1.1180	0.205	94.8	75-125			LJ, QX
Thallium	0.0557	4.76E-4	ng/m³ Air	5.5902E-2	0.00106	97.7	75-125			QB-04
Vanadium	2.76	0.0428	ng/m³ Air	1.1180	1.71	94.1	75-125			
Zinc	108	62.1	ng/m³ Air	22.361	85.9	98.7	75-125			
Post Spike (B4J0804-PS2)				**Source: 4100748-22**		Prepared: 10/08/24		Analyzed: 10/09/24		
Antimony	0.296	0.0326	ng/m³ Air	0.23330	0.0673	98.2	75-125			SL
Arsenic	1.26	0.00790	ng/m³ Air	1.1665	0.186	91.7	75-125			
Barium	6.17	0.903	ng/m³ Air	2.3330	3.93	95.8	75-125			
Beryllium	0.243	0.00270	ng/m³ Air	0.23330	0.0195	95.8	75-125			
Cadmium	0.130	0.0625	ng/m³ Air	0.11665	ND	111	75-125			
Chromium	5.60	1.86	ng/m³ Air	1.1665	4.56	89.8	75-125			

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AQS SITE CODE:
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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4J0804 - ICP-MS Extraction										
Post Spike (B4J0804-PS2) Continued		**Source: 4100748-22**		Prepared: 10/08/24 Analyzed: 10/09/24						
Cobalt	0.694	0.0368	ng/m³ Air	0.23330	0.472	95.1	75-125			
Copper	45.8	2.22	ng/m³ Air	11.665	34.1	100	75-125			
Lead	23.1	0.181	ng/m³ Air	23.330	0.250	97.9	75-125			
Manganese	17.3	1.59	ng/m³ Air	2.3330	15.1	95.4	75-125			
Molybdenum	2.97	0.303	ng/m³ Air	1.1665	1.85	95.9	75-125			
Nickel	5.69	0.550	ng/m³ Air	2.3330	3.43	96.9	75-125			
Selenium	1.27	0.00756	ng/m³ Air	1.1665	0.162	95.0	75-125			LJ, QX
Thallium	0.0575	4.97E-4	ng/m³ Air	5.8324E-2	0.00116	96.5	75-125			
Vanadium	2.30	0.0446	ng/m³ Air	1.1665	1.20	94.0	75-125			
Zinc	ND	64.8	ng/m³ Air	23.330	ND		75-125			U
Dilution Check (B4J0804-SRL1)		**Source: 4100748-02**		Prepared & Analyzed: 10/08/24						
Antimony	ND	0.156	ng/m³ Air		ND				10	SL, U
Arsenic	0.272	0.0379	ng/m³ Air		0.273			0.498	10	
Barium	5.63	4.33	ng/m³ Air		5.71			1.33	10	
Beryllium	ND	0.0129	ng/m³ Air		0.0147				10	U
Cadmium	ND	0.300	ng/m³ Air		ND				10	U
Chromium	ND	8.93	ng/m³ Air		ND				10	U
Cobalt	0.531	0.176	ng/m³ Air		0.533			0.386	10	
Copper	31.6	10.6	ng/m³ Air		31.8			0.469	10	
Lead	ND	0.865	ng/m³ Air		ND				10	U
Manganese	16.2	7.64	ng/m³ Air		16.3			0.696	10	
Molybdenum	1.74	1.45	ng/m³ Air		1.76			1.27	10	
Nickel	ND	2.64	ng/m³ Air		ND				10	U
Selenium	0.217	0.0362	ng/m³ Air		0.205			5.76	10	LJ, QX
Thallium	0.00297	0.00238	ng/m³ Air		ND			94.4	10	QB-04
Vanadium	1.63	0.214	ng/m³ Air		1.71			4.84	10	
Zinc	ND	310	ng/m³ Air		ND				10	U
Dilution Check (B4J0804-SRL2)		**Source: 4100748-22**		Prepared: 10/08/24 Analyzed: 10/09/24						
Antimony	ND	0.163	ng/m³ Air		ND				10	SL, U
Arsenic	0.195	0.0395	ng/m³ Air		0.186			4.62	10	
Barium	ND	4.51	ng/m³ Air		ND				10	U
Beryllium	0.0170	0.0135	ng/m³ Air		0.0195			13.7	10	
Cadmium	ND	0.313	ng/m³ Air		ND				10	U
Chromium	ND	9.32	ng/m³ Air		ND				10	U
Cobalt	0.466	0.184	ng/m³ Air		0.472			1.26	10	
Copper	33.9	11.1	ng/m³ Air		34.1			0.703	10	
Lead	ND	0.903	ng/m³ Air		ND				10	U
Manganese	15.0	7.97	ng/m³ Air		15.1			0.790	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 B4J0804 - ICP-MS Extraction										
Dilution Check (B4J0804-SRL2) Continued				**Source: 4100748-22**		Prepared: 10/08/24 Analyzed: 10/09/24				
Molybdenum	1.84	1.51	ng/m³ Air		1.85			0.613	10	
Nickel	3.44	2.75	ng/m³ Air		3.43			0.273	10	
Selenium	0.180	0.0378	ng/m³ Air		0.162			10.4	10	LJ, QX
Thallium	ND	0.00248	ng/m³ Air		ND				10	U
Vanadium	1.14	0.223	ng/m³ Air		1.20			4.94	10	
Zinc	ND	324	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.
QX	Compound does not meet QC criteria. Results should be considered an estimate.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD.
QB-04	Analyte exceeds continuing calibration blank criteria
LJ	Identification of analyte is acceptable; reported value is an estimate.
D-F	Duplicate exceeds DQO criteria.
ND	Analyte NOT DETECTED
NR	Not Reported
MDL	Method Detection Limit
RPD	Relative Percent Difference

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

Stage 1 Data Verification Checklist – Metals

HDOH CAB – Ambient Community Air Sampling – Lahaina

Task Order No. 23141

Reviewed by:
Kierra Johnson 10/17/2024 and Shanna Vasser 10/18/2024
Laboratory: Eastern Research Group – Morrisville, NC
Collection date(s): 09/26/2024 – 10/02/2024
Report No: 4100748

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

Discrepancies: None.

Notes: None.