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

July 18 through July 24, 2024

Tetra Tech, Inc. (Tetra Tech) prepared a Community Air Monitoring and Sampling Plan (CAMSP) to address community air monitoring during debris removal operations in response to the 2023 Maui Wildfires. Air monitoring and sampling occurred from July 18 through July 24, 2024, at the four community locations across Lahaina listed below and shown on **Figure 1**:

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

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

Air quality monitoring for particulate matter was collected at all four community locations over a 24-hour period each day in accordance with the CAMSP. Ambient air monitoring was performed to assess the presence of airborne particulates with a particle size diameter of 10 micrometers (µm), which is the size that is recognized as being small enough to be inhaled into a person's lungs. This particle size diameter is recognized for health evaluations and is identified as "PM_{10}". Monitoring for PM_{10} was conducted 24 hours a day, 7 days a week from July 18 through July 24 at each of the locations. 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 ($\mu g/m^3$) screening level.

The weekly reports do not include air quality monitoring for fine particulate matter (particle size diameter of 2.5 µm or less [$PM_{2.5}$]). The Department of Health or U.S. Environmental Protection Agency (EPA) monitors for this at six locations in Lahaina; results are accessible at https://fire.airnow.gov/.

Daily air sampling at all four community locations accorded with the CAMSP. 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) for asbestos and metals, as presented in the CAMSP.

Air Monitoring Results

Real time PM_{10} concentrations were detected at each monitoring location throughout this reporting period. None of the results exceeded the 150 $\mu g/m^3$ screening level, as shown in **Table 1**.

Air Sampling Results

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

analytical sensitivity (see **Table 2**). Notably, the laboratory commented "Numerous gypsum fibers present" regarding samples collected at the following monitoring stations:

- Leialii Hawaiian Homelands on July 22 and 23
- WW Pump Station #4 on July 22 and 24

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 analysis; 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, respectively, for total dust as time-weighted averages (National Institute for Occupational Safety and Health [NIOSH] and Occupational Safety and Health Administration [OSHA]). While total dust sampling has not occurred, results of size-discriminated particulate sampling (PM_{10}) at these locations do not approach these thresholds and are orders of magnitude less than occupational gypsum exposure criteria.

All ambient air samples from all four community sampling locations yielded low levels of metals, all below SSALs (see **Table 2**).

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

Meteorological Summary

Overall wind conditions during this weekly event averaged 1.1 miles per hour originating from a generally south-southeast direction. **Table 3** summarizes 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 proceeded by use of 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 calibration, except for a leak check and a flow audit, which were performed before monitoring according to the manufacturer's procedures.

Collection of samples to be analyzed for asbestos occurred by use of a Casella Vortex 3 or similar air sampling pump. Sampling flow rates are determined and documented by pre- and post- calibration of each sampling pump according to a primary calibration standard. Calibration and sampling accorded with 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.

Collection of samples to be analyzed for metals occurred by use of Tisch Environmental High Volume Air Samplers, or equivalent, in accordance with the following methods:

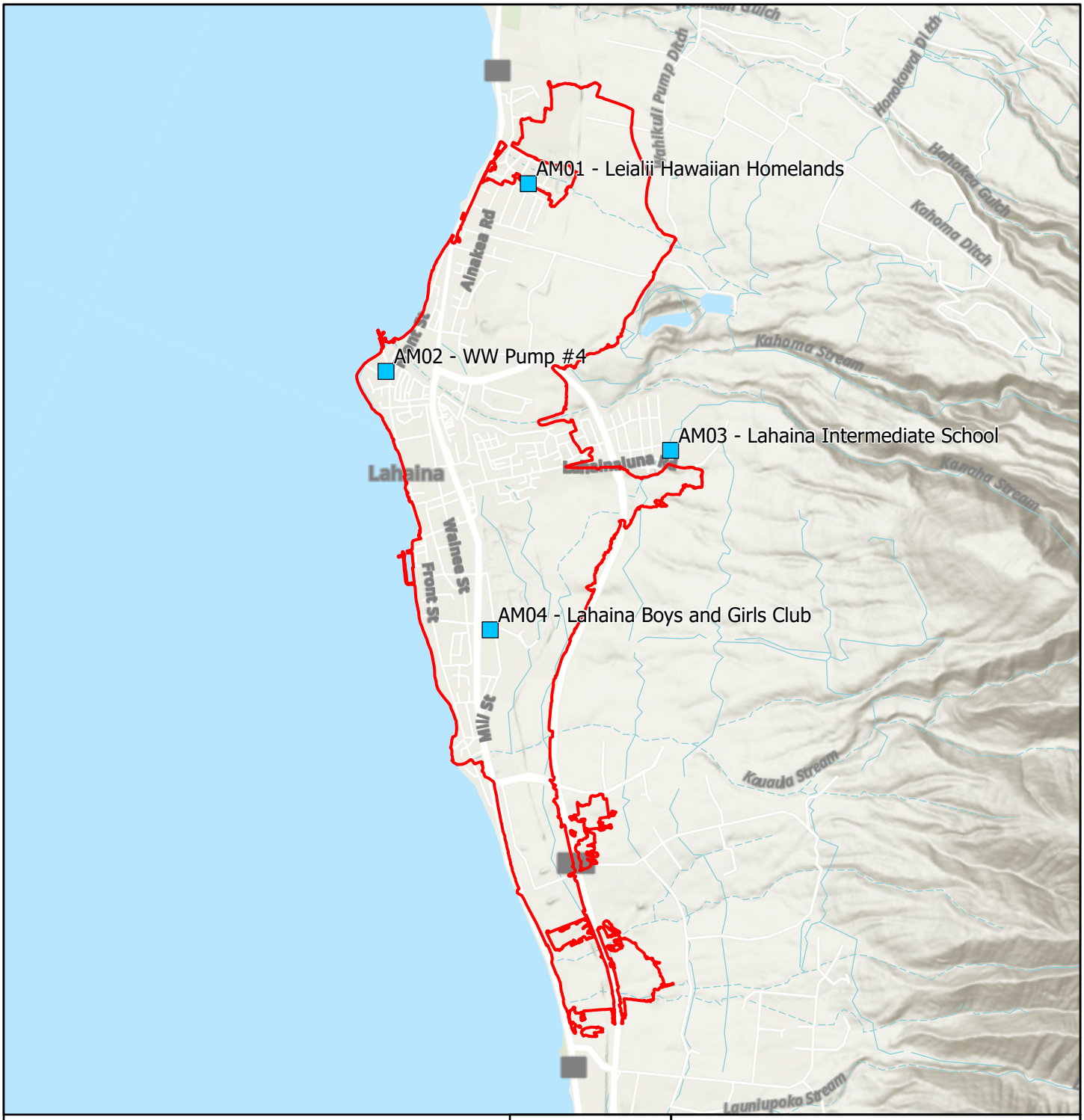
- EPA Compendium Method IO-2.1, Sampling of Ambient Air for Total Suspended Particulate Matter (SPM) and for PM_{10} by Use of a High Volume (HV) Sampler
- EPA Compendium Method IO-3.5: Compendium of Methods for Determination of Inorganic Compounds in Ambient Air: Determination of Metals in Ambient Particulate 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
- 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 are maintained in an electronic database and compared to SSALs. Level 1 data verification of all analytical data occurs, and an industrial hygienist reviews results.

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
July 18 through July 24, 2024

Screening Level		TWA Results 150 ($\mu g/m^3$)
7/18/2024	Leialii Hawaiian Homelands (AM-01)	8.0
	WW Pump Station #4 (AM-02)	7.3
	Lahaina Intermediate School (AM-03)	13
	Lahaina Boys & Girls Club (AM-04)	8.5
7/19/2024	Leialii Hawaiian Homelands (AM-01)	7.5
	WW Pump Station #4 (AM-02)	5.3
	Lahaina Intermediate School (AM-03)	11
	Lahaina Boys & Girls Club (AM-04)	10
7/20/2024	Leialii Hawaiian Homelands (AM-01)	8.6
	WW Pump Station #4 (AM-02)	7.1
	Lahaina Intermediate School (AM-03)	8.0
	Lahaina Boys & Girls Club (AM-04)	11
7/21/2024	Leialii Hawaiian Homelands (AM-01)	11
	WW Pump Station #4 (AM-02)	11
	Lahaina Intermediate School (AM-03)	11
	Lahaina Boys & Girls Club (AM-04)	9.2
7/22/2024	Leialii Hawaiian Homelands (AM-01)	19
	WW Pump Station #4 (AM-02)	11
	Lahaina Intermediate School (AM-03)	12
	Lahaina Boys & Girls Club (AM-04)	9.0
7/23/2024	Leialii Hawaiian Homelands (AM-01)	7.9
	WW Pump Station #4 (AM-02)	6.7
	Lahaina Intermediate School (AM-03)	45
	Lahaina Boys & Girls Club (AM-04)	10
7/24/2024	Leialii Hawaiian Homelands (AM-01)	9.3
	WW Pump Station #4 (AM-02)	12
	Lahaina Intermediate School (AM-03)	11
	Lahaina Boys & Girls Club (AM-04)	13

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
July 18 through July 24, 2024

Analyte		Asbestos	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Manganese	Molybdenum	Nickel	Selenium	Thallium	Vanadium	Zinc
Units*		s/cc	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³
Site Screening Action Level		0.003 [1]	0.7	0.05	1.2	0.05	0.02	12	0.01	240	1.5	0.12	4.8	0.02	48	24	0.24	1200
7/18/2024	Leialii Hawaiian Homelands (AM-01)	<0.0024	0.0000916	0.00264	0.00965	0.0000497	ND	0.00788	0.00156	0.142	0.000560	0.0390	0.00539	0.00384	0.000251	0.00000216	0.00456	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.000148	0.000711	0.00774	0.0000247	ND	0.00410	0.000885	0.0704	0.00132	0.0248	0.00214	0.00253	0.000212	0.00000167	0.00264	ND
	Lahaina Intermediate School (AM-03)	<0.0027	0.0000578	0.000321	0.00526	0.0000755	ND	0.00453	0.000981	0.0711	0.000898	0.0221	0.00298	0.00231	0.000229	0.00000164	0.00204	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0024	0.000111	0.000481	0.00575	0.0000208	ND	0.00380	0.000730	0.0334	0.00104	0.0308	0.00183	0.00182	0.000186	0.00000163	0.00189	ND
7/19/2024	Leialii Hawaiian Homelands (AM-01)	<0.0024	0.0000844	0.00201	0.00818	0.0000355	ND	0.00745	0.00159	0.143	0.000608	0.0368	0.00530	0.00434	0.000232	0.00000182	0.00435	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.000113	0.000524	0.00695	0.0000240	ND	0.00432	0.000830	0.0767	0.00190	0.0221	0.00215	0.00248	0.000197	0.00000136	0.00244	ND
	Lahaina Intermediate School (AM-03)	<0.0027	0.0000448	0.000306	0.00440	0.0000518	ND	0.00452	0.000796	0.0701	0.000643	0.0203	0.00280	0.00226	0.000216	0.00000138	0.00190	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0024	0.0000732	0.000386	0.00476	0.0000195	0.000147	0.00374	0.000595	0.0363	0.00105	0.0224	0.00174	0.00193	0.000168	0.00000127	0.00161	ND
7/20/2024	Leialii Hawaiian Homelands (AM-01)	<0.0024	0.0000461	0.000401	0.00408	0.0000141	ND	0.00383	0.000551	0.190	0.000362	0.0145	0.0119	0.00179	0.000161	0.00000131	0.00189	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.000109	0.000414	0.00529	0.0000143	0.0000593	0.00276	0.000413	0.0392	0.00157	0.0132	0.00261	0.00122	0.000166	0.00000141	0.00154	ND
	Lahaina Intermediate School (AM-03)	<0.0030	0.0000562	0.000238	0.00315	0.0000198	ND	0.00301	0.000454	0.0420	0.000448	0.0117	0.00233	0.00164	0.000131	0.00000153	0.00127	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0024	0.0000818	0.000304	0.00393	0.0000128	ND	0.00316	0.000421	0.0393	0.000834	0.0138	0.00228	0.00131	0.000157	0.00000142	0.00130	ND
7/21/2024	Leialii Hawaiian Homelands (AM-01)	<0.0024	0.0000517	0.000550	0.00526	0.000021	ND	0.00397	0.000597	0.235	0.000564	0.0184	0.0180	0.00171	0.000260	0.00000299	0.00229	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.0000819	0.000714	0.00644	0.0000308	ND	0.00335	0.000694	0.0388	0.00200	0.0232	0.00207	0.00211	0.000304	0.00000261	0.00257	ND
	Lahaina Intermediate School (AM-03)	<0.0030	0.0000553	0.000264	0.00322	0.0000139	ND	0.00257	0.000327	0.0614	0.000775	0.00928	0.00313	0.00137	0.000247	0.00000217	0.00115	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0024	0.0000930	0.000394	0.00420	0.0000123	ND	0.00270	0.000371	0.0279	0.000851	0.0132	0.00175	0.00131	0.000259	0.00000231	0.00146	ND
7/22/2024	Leialii Hawaiian Homelands (AM-01)	<0.0024	0.0000622	0.000607	0.00729	0.0000334	ND	0.00627	0.00122	0.241	0.000565	0.0302	0.0160	0.00371	0.000306	0.00000255	0.00404	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.000111	0.000780	0.00797	0.0000189	ND	0.00275	0.000494	0.0318	0.00152	0.0156	0.00213	0.00163	0.000291	0.00000228	0.00193	ND
	Lahaina Intermediate School (AM-03)	<0.0030	0.0000553	0.000210	0.00297	0.0000246	ND	0.00276	0.000422	0.0445	0.000483	0.0107	0.00327	0.00128	0.000225	0.00000208	0.00118	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0024	0.0000957	0.000478	0.00351	0.0000143	ND	0.00278	0.000413	0.0276	0.00101	0.0136	0.00168	0.00133	0.000240	0.00000213	0.00127	ND
7/23/2024	Leialii Hawaiian Homelands (AM-01)	<0.0024	0.000190	0.00652	0.0204	0.0000725	0.0000991	0.0137	0.00319	0.175	0.00107	0.0835	0.0107	0.00588	0.000412	0.00000454	0.00942	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.000109	0.000780	0.00862	0.0000384	ND	0.00591	0.00142	0.0419	0.00177	0.0372	0.00278	0.00386	0.000252	0.00000235	0.00444	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000517	0.000307	0.00426	0.0000497	ND	0.00401	0.000798	0.0537	0.000647	0.0177	0.00360	0.00225	0.000190	0.00000165	0.00177	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0024	0.0000886	0.000446	0.00406	0.0000143	ND	0.00283	0.000534	0.0282	0.00103	0.0149	0.00204	0.00135	0.000163	0.00000145	0.00139	ND
7/24/2024	Leialii Hawaiian Homelands (AM-01)	<0.0024	0.0000628	0.000834	0.00658	0.0000257	ND	0.00633	0.00130	0.197	0.000371	0.0295	0.0132	0.00340	0.000214	0.00000144	0.00390	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.000123	0.000746	0.00622	0.0000218	ND	0.00349	0.000672	0.0428	0.00277	0.0204	0.00261	0.00186	0.000209	0.00000125	0.00237	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000512	0.000295	0.00347	0.0000315	ND	0.00310	0.000520	0.0464	0.000731	0.0122	0.00336	0.00152	0.000156	0.000000944	0.00141	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0024	0.0000759	0.000426	0.00380	0.0000154	ND	0.00300	0.000468	0.0366	0.00107	0.0148	0.00237	0.00144	0.000167	0.000000996	0.00144	ND
95% Upper Confidence Limit[2]		NA	0.000100	0.000990	0.00689	0.0000350	0.000732	0.00499	0.00100	0.106	0.00124	0.0268	0.00601	0.00263	0.000240	0.00000210	0.00295	NA

Notes:

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

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

s/cc = structures per cubic centimeter

µg/m³ = micrograms per cubic meter

NA = Not Applicable

ND = Not detected at or above the laboratory reporting limit

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

Table 3
State of Hawaii, Department of Health, Clean Air Branch
Meteorological Data
Maui Wildfires, Lahaina
July 18 through July 24, 2024

Date	Station ID	Weather Station Name	Wind Speed (mph)	Wind Direction (angle)	Temperature (°F)	Rel Humidity (%)	Baro Pressure (mBar)
7/18/2024	AM-01	Leialii Hawaiian Homelands	1.3	ESE	85	52	761.1
7/18/2024	AM-02	WW Pump Station #4	1.1	SSE	83	58	763.3
7/18/2024	AM-03	Lahaina Intermediate School	1.3	ESE	80	55	753.8
7/18/2024	AM-04	Lahaina Boys & Girls Club	0.9	SSW	78	60	762.9
7/19/2024	AM-01	Leialii Hawaiian Homelands	1.0	ESE	85	60	761.2
7/19/2024	AM-02	WW Pump Station #4	1.0	SSE	82	67	763.4
7/19/2024	AM-03	Lahaina Intermediate School	1.2	ESE	79	65	753.9
7/19/2024	AM-04	Lahaina Boys & Girls Club	1.0	SSW	78	67	762.9
7/20/2024	AM-01	Leialii Hawaiian Homelands	1.0	SE	86	61	761.2
7/20/2024	AM-02	WW Pump Station #4	1.0	SSE	84	67	763.4
7/20/2024	AM-03	Lahaina Intermediate School	1.2	SE	81	63	753.9
7/20/2024	AM-04	Lahaina Boys & Girls Club	1.1	SW	80	67	762.9
7/21/2024	AM-01	Leialii Hawaiian Homelands	1.0	SSE	86	62	762.0
7/21/2024	AM-02	WW Pump Station #4	1.1	S	84	69	764.1
7/21/2024	AM-03	Lahaina Intermediate School	1.1	SE	81	65	754.7
7/21/2024	AM-04	Lahaina Boys & Girls Club	1.4	SSW	79	69	763.7
7/22/2024	AM-01	Leialii Hawaiian Homelands	1.6	E	85	61	761.3
7/22/2024	AM-02	WW Pump Station #4	1.2	SE	84	65	763.4
7/22/2024	AM-03	Lahaina Intermediate School	1.2	ESE	80	63	753.9
7/22/2024	AM-04	Lahaina Boys & Girls Club	1.0	S	79	67	763.0
7/23/2024	AM-01	Leialii Hawaiian Homelands	1.1	SE	87	62	759.9
7/23/2024	AM-02	WW Pump Station #4	1.0	S	85	67	762.0
7/23/2024	AM-03	Lahaina Intermediate School	1.1	SE	81	64	752.5
7/23/2024	AM-04	Lahaina Boys & Girls Club	1.4	SSW	80	66	761.5
7/24/2024	AM-01	Leialii Hawaiian Homelands	0.9	SE	87	63	761.0
7/24/2024	AM-02	WW Pump Station #4	0.9	S	84	71	763.1
7/24/2024	AM-03	Lahaina Intermediate School	1.0	SE	81	66	753.7
7/24/2024	AM-04	Lahaina Boys & Girls Club	1.1	SW	80	69	762.7

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 material used 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 in depth 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:	042415375
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:	07/24/2024 10:00 AM
Analysis Date:	07/30/2024
Report Date:	07/31/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM01-071824-AB** **Sample Description: DK864855**

EMSL Sample Number:	042415375-0001		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7197.3
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
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**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**

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

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

Comment

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: 042415375
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: 042415375-0001 **Customer Sample:** MFL-AM01-071824-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
A5	J4	None Detected									
A5	H6	None Detected									
A5	F7	None Detected									
A6	H6	None Detected									
A6	E4	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:	042415375
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:	07/24/2024 10:00 AM
Analysis Date:	07/30/2024
Report Date:	07/31/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-071824-AB**	**Sample Description:**	**DK864852**
EMSL Sample Number:	042415375-0002	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L) :	7306.5
Aspect ratio for fiber definition:	3:1	Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5	Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A *(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD	Analyst:	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**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**

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

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

Comment

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: 042415375
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: 042415375-0002 **Customer Sample:** MFL-AM02-071824-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	E3	None Detected									
B1	B4	None Detected									
B2	B6	None Detected									
B2	E8	None Detected									
B2	G7	None Detected									

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

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

EMSL Order:	042415375
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:	07/24/2024 10:00 AM
Analysis Date:	07/30/2024
Report Date:	07/31/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-071824-AB**		**Sample Description:**	**DK864864**
EMSL Sample Number:	042415375-0003		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	1858.4
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	17
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0009**		**Limit of Detection (Structures/cc):**	**0.0027**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 13.63**	**< 0.0027**	**Not Applicable**	**0.0027**
Total Amphibole	**ADX**	**0**	**0**	**< 13.63**	**< 0.0027**	**Not Applicable**	**0.0027**
Actinolite	ADX	0	0	< 13.63	< 0.0027	Not Applicable	0.0027
Amosite	ADX	0	0	< 13.63	< 0.0027	Not Applicable	0.0027
Anthophyllite	ADX	0	0	< 13.63	< 0.0027	Not Applicable	0.0027
Crocidolite	ADX	0	0	< 13.63	< 0.0027	Not Applicable	0.0027
Tremolite	ADX	0	0	< 13.63	< 0.0027	Not Applicable	0.0027
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 13.63**	**< 0.0027**	**Not Applicable**	**0.0027**
Other Minerals	-	0	0	< 13.63	< 0.0027	Not Applicable	0.0027
Total All Structures	**-**	**0**	**0**	**< 13.63**	**< 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**	**< 13.63**	**< 0.0027**	**Not Applicable**	**0.0027**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 13.63**	**< 0.0027**	**Not Applicable**	**0.0027**
Actinolite	ADX	0	0	< 13.63	< 0.0027	Not Applicable	0.0027
Amosite	ADX	0	0	< 13.63	< 0.0027	Not Applicable	0.0027
Anthophyllite	ADX	0	0	< 13.63	< 0.0027	Not Applicable	0.0027
Crocidolite	ADX	0	0	< 13.63	< 0.0027	Not Applicable	0.0027
Tremolite	ADX	0	0	< 13.63	< 0.0027	Not Applicable	0.0027
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 13.63**	**< 0.0027**	**Not Applicable**	**0.0027**
Other Minerals	-	0	0	< 13.63	< 0.0027	Not Applicable	0.0027
Total All Structures (PCMe)	**-**	**0**	**0**	**< 13.63**	**< 0.0027**	**Not Applicable**	**0.0027**

Comment

Robyn Ray
Approved Signatory

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

EMSL Order ID: 042415375
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: 042415375-0003 **Customer Sample:** MFL-AM03-071824-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					
B6	J7	None Detected									
B6	I5	None Detected									
B6	H1	None Detected									
B6	G7	None Detected									
B6	F4	None Detected									
B6	E1	None Detected									
B6	D3	None Detected									
B6	C6	None Detected									
B6	B4	None Detected									
B6	A7	None Detected									
B7	A4	None Detected									
B7	B1	None Detected									
B7	C5	None Detected									
B7	D9	None Detected									
B7	E4	None Detected									
B7	F1	None Detected									
B7	G4	None Detected									

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

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

EMSL Order:	042415375
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:	07/24/2024 10:00 AM
Analysis Date:	07/30/2024
Report Date:	07/31/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM04-071824-AB**		**Sample Description:**	**DK864860**
EMSL Sample Number:	042415375-0004		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):	0.0129
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**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**

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

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

Comment

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: 042415375
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: 042415375-0004 **Customer Sample:** MFL-AM04-071824-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
C2	A4	None Detected									
C2	C5	None Detected									
C2	F9	None Detected									
C3	I6	None Detected									
C3	C8	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:	042415375
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:	07/24/2024 10:00 AM
Analysis Date:	07/30/2024
Report Date:	07/31/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-FB01-071824-AB**		**Sample Description:**	**DL247156**
EMSL Sample Number:	042415375-0005		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	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**	**< 23.18**			
Total Amphibole	**ADX**	**0**	**0**	**< 23.18**			
Actinolite	ADX	0	0	< 23.18			
Amosite	ADX	0	0	< 23.18			
Anthophyllite	ADX	0	0	< 23.18			
Crocidolite	ADX	0	0	< 23.18			
Tremolite	ADX	0	0	< 23.18			
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.18**			
Other Minerals	-	0	0	< 23.18			
Total All Structures	**-**	**0**	**0**	**< 23.18**			

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

	Minimum ID Level	Fibers Detected 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**	**< 23.18**			
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.18**			
Actinolite	ADX	0	0	< 23.18			
Amosite	ADX	0	0	< 23.18			
Anthophyllite	ADX	0	0	< 23.18			
Crocidolite	ADX	0	0	< 23.18			
Tremolite	ADX	0	0	< 23.18			
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.18**			
Other Minerals	-	0	0	< 23.18			
Total All Structures (PCMe)	**-**	**0**	**0**	**< 23.18**			

Comment

Approved Signatory

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: 042415375
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: 042415375-0005 **Customer Sample:** MFL-FB01-071824-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
C5	A5	None Detected									
C5	C8	None Detected									
C5	E7	None Detected									
C5	G4	None Detected									
C5	I6	None Detected									
C6	J5	None Detected									
C6	H3	None Detected									
C6	F4	None Detected									
C6	D6	None Detected									
C6	B4	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:	042415375
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:	07/24/2024 10:00 AM
Analysis Date:	07/30/2024
Report Date:	07/31/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM01-071924-AB**	**Sample Description:**	**DL247174**
EMSL Sample Number:	042415375-0006	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L) :	7182.0
Aspect ratio for fiber definition:	3:1	Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5	Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A *(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD	Analyst:	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**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**

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

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

Comment

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: 042415375
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: 042415375-0006 **Customer Sample:** MFL-AM01-071924-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	D2	None Detected									
D1	F4	None Detected									
D2	H1	None Detected									
D2	F4	None Detected									
D2	D1	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:	042415375
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:	07/24/2024 10:00 AM
Analysis Date:	07/30/2024
Report Date:	07/31/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-071924-AB**		**Sample Description:**	**DL247162**
EMSL Sample Number:	042415375-0007		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7319.3
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):	0.0129
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**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**

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

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

Comment

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: 042415375
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: 042415375-0007 **Customer Sample:** MFL-AM02-071924-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	B5	None Detected									
D5	D8	None Detected									
D5	G10	None Detected									
D6	I1	None Detected									
D6	I8	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:	042415375
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:	07/24/2024 10:00 AM
Analysis Date:	07/30/2024
Report Date:	07/31/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM03-071924-AB** **Sample Description: DL247161**

EMSL Sample Number:	042415375-0008		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	4506.1
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):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	7
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0009**		**Limit of Detection (Structures/cc):**	**0.0027**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 33.11**	**< 0.0027**	**Not Applicable**	**0.0027**
Total Amphibole	**ADX**	**0**	**0**	**< 33.11**	**< 0.0027**	**Not Applicable**	**0.0027**
Actinolite	ADX	0	0	< 33.11	< 0.0027	Not Applicable	0.0027
Amosite	ADX	0	0	< 33.11	< 0.0027	Not Applicable	0.0027
Anthophyllite	ADX	0	0	< 33.11	< 0.0027	Not Applicable	0.0027
Crocidolite	ADX	0	0	< 33.11	< 0.0027	Not Applicable	0.0027
Tremolite	ADX	0	0	< 33.11	< 0.0027	Not Applicable	0.0027
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 33.11**	**< 0.0027**	**Not Applicable**	**0.0027**
Other Minerals	-	0	0	< 33.11	< 0.0027	Not Applicable	0.0027
Total All Structures	**-**	**0**	**0**	**< 33.11**	**< 0.0027**	**Not Applicable**	**0.0027**

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

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 33.11**	**< 0.0027**	**Not Applicable**	**0.0027**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 33.11**	**< 0.0027**	**Not Applicable**	**0.0027**
Actinolite	ADX	0	0	< 33.11	< 0.0027	Not Applicable	0.0027
Amosite	ADX	0	0	< 33.11	< 0.0027	Not Applicable	0.0027
Anthophyllite	ADX	0	0	< 33.11	< 0.0027	Not Applicable	0.0027
Crocidolite	ADX	0	0	< 33.11	< 0.0027	Not Applicable	0.0027
Tremolite	ADX	0	0	< 33.11	< 0.0027	Not Applicable	0.0027
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 33.11**	**< 0.0027**	**Not Applicable**	**0.0027**
Other Minerals	-	0	0	< 33.11	< 0.0027	Not Applicable	0.0027
Total All Structures (PCMe)	**-**	**0**	**0**	**< 33.11**	**< 0.0027**	**Not Applicable**	**0.0027**

Comment

Robyn Ray
Approved Signatory

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

EMSL Order ID: 042415375
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: 042415375-0008 **Customer Sample:** MFL-AM03-071924-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
E2	J9	None Detected									
E2	H7	None Detected									
E2	F2	None Detected									
E2	C4	None Detected									
E3	A8	None Detected									
E3	D9	None Detected									
E3	F7	None Detected									

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

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

EMSL Order:	042415375
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:	07/24/2024 10:00 AM
Analysis Date:	07/30/2024
Report Date:	07/31/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM04-071924-AB** **Sample Description: DL247152**

EMSL Sample Number:	042415375-0009		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7173.4
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	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**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**

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

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

Comment

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: 042415375
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: 042415375-0009 **Customer Sample:** MFL-AM04-071924-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	J5	None Detected									
E5	H6	None Detected									
E5	C7	None Detected									
E6	H7	None Detected									
E6	D4	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:	042415375
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:	07/24/2024 10:00 AM
Analysis Date:	07/30/2024
Report Date:	07/31/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-071924-AB** **Sample Description: DL247130**

EMSL Sample Number:	042415375-0010		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	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**	**< 23.18**			
Total Amphibole	**ADX**	**0**	**0**	**< 23.18**			
Actinolite	ADX	0	0	< 23.18			
Amosite	ADX	0	0	< 23.18			
Anthophyllite	ADX	0	0	< 23.18			
Crocidolite	ADX	0	0	< 23.18			
Tremolite	ADX	0	0	< 23.18			
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.18**			
Other Minerals	-	0	0	< 23.18			
Total All Structures	**-**	**0**	**0**	**< 23.18**			

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

	Minimum ID Level	Fibers Detected 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**	**< 23.18**			
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.18**			
Actinolite	ADX	0	0	< 23.18			
Amosite	ADX	0	0	< 23.18			
Anthophyllite	ADX	0	0	< 23.18			
Crocidolite	ADX	0	0	< 23.18			
Tremolite	ADX	0	0	< 23.18			
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.18**			
Other Minerals	-	0	0	< 23.18			
Total All Structures (PCMe)	**-**	**0**	**0**	**< 23.18**			

Comment

Approved Signatory

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: 042415375
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: 042415375-0010 **Customer Sample:** MFL-FB01-071924-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	B1	None Detected									
F1	D3	None Detected									
F1	F4	None Detected									
F1	H2	None Detected									
F1	J3	None Detected									
F2	J7	None Detected									
F2	H6	None Detected									
F2	F4	None Detected									
F2	D7	None Detected									
F2	B8	None Detected									

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

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

EMSL Order:	042415375
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:	07/24/2024 10:00 AM
Analysis Date:	07/30/2024
Report Date:	07/31/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM01-072024-AB** **Sample Description:** **DL247157**

EMSL Sample Number:	042415375-0011		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):	0.0129
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**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**

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

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

Comment

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: 042415375
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: 042415375-0011 **Customer Sample:** MFL-AM01-072024-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	J9	None Detected									
F5	H5	None Detected									
F5	E4	None Detected									
F6	H4	None Detected									
F6	D6	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:	042415375
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:	07/24/2024 10:00 AM
Analysis Date:	07/30/2024
Report Date:	07/31/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM02-072024-AB** **Sample Description: DL247134**

EMSL Sample Number:	042415375-0012		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7057.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	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**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**

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

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

Comment

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: 042415375
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: 042415375-0012 **Customer Sample:** MFL-AM02-072024-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	H9	None Detected									
G1	F7	None Detected									
G1	D3	None Detected									
G2	D4	None Detected									
G2	I6	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:	042415375
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:	07/24/2024 10:00 AM
Analysis Date:	07/30/2024
Report Date:	07/31/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-072024-AB**	**Sample Description:**	**DL247129**
EMSL Sample Number:	042415375-0013	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L) :	5012.1
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):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A *(N/A)*	Grid Openings Analyzed:	6
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):	**0.0010**	**Limit of Detection (Structures/cc):**	**0.0030**

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**	**< 38.63**	**< 0.0030**	**Not Applicable**	**0.0030**
Total Amphibole	**ADX**	**0**	**0**	**< 38.63**	**< 0.0030**	**Not Applicable**	**0.0030**
Actinolite	ADX	0	0	< 38.63	< 0.0030	Not Applicable	0.0030
Amosite	ADX	0	0	< 38.63	< 0.0030	Not Applicable	0.0030
Anthophyllite	ADX	0	0	< 38.63	< 0.0030	Not Applicable	0.0030
Crocidolite	ADX	0	0	< 38.63	< 0.0030	Not Applicable	0.0030
Tremolite	ADX	0	0	< 38.63	< 0.0030	Not Applicable	0.0030
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 38.63**	**< 0.0030**	**Not Applicable**	**0.0030**
Other Minerals	-	0	0	< 38.63	< 0.0030	Not Applicable	0.0030
Total All Structures	**-**	**0**	**0**	**< 38.63**	**< 0.0030**	**Not Applicable**	**0.0030**

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**	**< 38.63**	**< 0.0030**	**Not Applicable**	**0.0030**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 38.63**	**< 0.0030**	**Not Applicable**	**0.0030**
Actinolite	ADX	0	0	< 38.63	< 0.0030	Not Applicable	0.0030
Amosite	ADX	0	0	< 38.63	< 0.0030	Not Applicable	0.0030
Anthophyllite	ADX	0	0	< 38.63	< 0.0030	Not Applicable	0.0030
Crocidolite	ADX	0	0	< 38.63	< 0.0030	Not Applicable	0.0030
Tremolite	ADX	0	0	< 38.63	< 0.0030	Not Applicable	0.0030
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 38.63**	**< 0.0030**	**Not Applicable**	**0.0030**
Other Minerals	-	0	0	< 38.63	< 0.0030	Not Applicable	0.0030
Total All Structures (PCMe)	**-**	**0**	**0**	**< 38.63**	**< 0.0030**	**Not Applicable**	**0.0030**

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: 042415375
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: 042415375-0013 **Customer Sample:** MFL-AM03-072024-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	J4	None Detected									
G5	G1	None Detected									
G5	D6	None Detected									
G6	H6	None Detected									
G6	E8	None Detected									
G6	B6	None Detected									

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

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

EMSL Order:	042415375
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:	07/24/2024 10:00 AM
Analysis Date:	07/30/2024
Report Date:	07/31/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM04-072024-AB** **Sample Description: DL247180**

EMSL Sample Number:	042415375-0014		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7102.5
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harison
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**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**

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

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

Comment

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: 042415375
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: 042415375-0014 **Customer Sample:** MFL-AM04-072024-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	B4	None Detected									
H1	D6	None Detected									
H1	G9	None Detected									
H2	G2	None Detected									
H2	D4	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:	042415375
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:	07/24/2024 10:00 AM
Analysis Date:	07/30/2024
Report Date:	07/31/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-072024-AB** **Sample Description:** **DL247131**

EMSL Sample Number:	042415375-0015		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):	0.0129
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**	**< 23.18**			
Total Amphibole	**ADX**	**0**	**0**	**< 23.18**			
Actinolite	ADX	0	0	< 23.18			
Amosite	ADX	0	0	< 23.18			
Anthophyllite	ADX	0	0	< 23.18			
Crocidolite	ADX	0	0	< 23.18			
Tremolite	ADX	0	0	< 23.18			
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.18**			
Other Minerals	-	0	0	< 23.18			
Total All Structures	**-**	**0**	**0**	**< 23.18**			

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

	Minimum ID Level	Fibers Detected 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**	**< 23.18**			
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.18**			
Actinolite	ADX	0	0	< 23.18			
Amosite	ADX	0	0	< 23.18			
Anthophyllite	ADX	0	0	< 23.18			
Crocidolite	ADX	0	0	< 23.18			
Tremolite	ADX	0	0	< 23.18			
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.18**			
Other Minerals	-	0	0	< 23.18			
Total All Structures (PCMe)	**-**	**0**	**0**	**< 23.18**			

Comment

Approved Signatory

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: 042415375
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: 042415375-0015 **Customer Sample:** MFL-FB01-072024-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	A3	None Detected									
H5	C5	None Detected									
H5	E2	None Detected									
H5	G4	None Detected									
H5	I6	None Detected									
H6	A6	None Detected									
H6	C5	None Detected									
H6	E7	None Detected									
H6	F7	None Detected									
H6	I8	None Detected									

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

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

EMSL Order:	042415375
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:	07/24/2024 10:00 AM
Analysis Date:	07/30/2024
Report Date:	07/31/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM01-072124-AB** **Sample Description: DL247166**

EMSL Sample Number:	042415375-0016		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7204.1
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):	0.0129
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**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**

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

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

Comment

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: 042415375
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: 042415375-0016 **Customer Sample:** MFL-AM01-072124-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
I2	J3	None Detected									
I2	G2	None Detected									
I2	C5	None Detected									
I3	C8	None Detected									
I3	H6	None Detected									

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

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

EMSL Order:	042415375
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:	07/24/2024 10:00 AM
Analysis Date:	07/30/2024
Report Date:	07/31/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM02-072124-AB** **Sample Description: DL247132**

EMSL Sample Number:	042415375-0017		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7267.8
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	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**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**

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

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

Comment

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:	**042415375**
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: 042415375-0017 **Customer Sample:** MFL-AM02-072124-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	J5	None Detected									
I5	G4	None Detected									
I5	C6	None Detected									
I6	H7	None Detected									
I6	D6	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:	042415375
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:	07/24/2024 10:00 AM
Analysis Date:	07/30/2024
Report Date:	07/31/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM03-072124-AB** **Sample Description: DL247135**

EMSL Sample Number:	042415375-0018		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	4451.1
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):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	7
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0010**		**Limit of Detection (Structures/cc):**	**0.0030**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 33.11**	**< 0.0030**	**Not Applicable**	**0.0030**
Total Amphibole	**ADX**	**0**	**0**	**< 33.11**	**< 0.0030**	**Not Applicable**	**0.0030**
Actinolite	ADX	0	0	< 33.11	< 0.0030	Not Applicable	0.0030
Amosite	ADX	0	0	< 33.11	< 0.0030	Not Applicable	0.0030
Anthophyllite	ADX	0	0	< 33.11	< 0.0030	Not Applicable	0.0030
Crocidolite	ADX	0	0	< 33.11	< 0.0030	Not Applicable	0.0030
Tremolite	ADX	0	0	< 33.11	< 0.0030	Not Applicable	0.0030
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 33.11**	**< 0.0030**	**Not Applicable**	**0.0030**
Other Minerals	-	0	0	< 33.11	< 0.0030	Not Applicable	0.0030
Total All Structures	**-**	**0**	**0**	**< 33.11**	**< 0.0030**	**Not Applicable**	**0.0030**

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

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 33.11**	**< 0.0030**	**Not Applicable**	**0.0030**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 33.11**	**< 0.0030**	**Not Applicable**	**0.0030**
Actinolite	ADX	0	0	< 33.11	< 0.0030	Not Applicable	0.0030
Amosite	ADX	0	0	< 33.11	< 0.0030	Not Applicable	0.0030
Anthophyllite	ADX	0	0	< 33.11	< 0.0030	Not Applicable	0.0030
Crocidolite	ADX	0	0	< 33.11	< 0.0030	Not Applicable	0.0030
Tremolite	ADX	0	0	< 33.11	< 0.0030	Not Applicable	0.0030
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 33.11**	**< 0.0030**	**Not Applicable**	**0.0030**
Other Minerals	-	0	0	< 33.11	< 0.0030	Not Applicable	0.0030
Total All Structures (PCMe)	**-**	**0**	**0**	**< 33.11**	**< 0.0030**	**Not Applicable**	**0.0030**

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: 042415375
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: 042415375-0018 **Customer Sample:** MFL-AM03-072124-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	C7	None Detected									
J1	E4	None Detected									
J1	H7	None Detected									
J2	H4	None Detected									
J2	B5	None Detected									
J3	D7	None Detected									
J3	I5	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:	042415375
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:	07/24/2024 10:00 AM
Analysis Date:	07/30/2024
Report Date:	07/31/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM04-072124-AB** **Sample Description: DL247177**

EMSL Sample Number:	042415375-0019		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7143.8
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	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**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**

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

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

Comment

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: 042415375
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: 042415375-0019 **Customer Sample:** MFL-AM04-072124-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	I3	None Detected									
J5	E1	None Detected									
J5	B3	None Detected									
J6	C4	None Detected									
J6	H5	None Detected									

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

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

EMSL Order:	042415375
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:	07/24/2024 10:00 AM
Analysis Date:	07/30/2024
Report Date:	07/31/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-072124-AB** **Sample Description:** **DL247181**

EMSL Sample Number:	042415375-0020		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):	0.0129
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**	**< 23.18**			
Total Amphibole	**ADX**	**0**	**0**	**< 23.18**			
Actinolite	ADX	0	0	< 23.18			
Amosite	ADX	0	0	< 23.18			
Anthophyllite	ADX	0	0	< 23.18			
Crocidolite	ADX	0	0	< 23.18			
Tremolite	ADX	0	0	< 23.18			
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.18**			
Other Minerals	-	0	0	< 23.18			
Total All Structures	**-**	**0**	**0**	**< 23.18**			

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

	Minimum ID Level	Fibers Detected 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**	**< 23.18**			
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.18**			
Actinolite	ADX	0	0	< 23.18			
Amosite	ADX	0	0	< 23.18			
Anthophyllite	ADX	0	0	< 23.18			
Crocidolite	ADX	0	0	< 23.18			
Tremolite	ADX	0	0	< 23.18			
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.18**			
Other Minerals	-	0	0	< 23.18			
Total All Structures (PCMe)	**-**	**0**	**0**	**< 23.18**			

Comment

Approved Signatory

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: 042415375
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: 042415375-0020 **Customer Sample:** MFL-FB01-072124-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	J9	None Detected									
K1	H7	None Detected									
K1	F10	None Detected									
K1	D10	None Detected									
K1	B7	None Detected									
K2	A1	None Detected									
K2	C4	None Detected									
K2	F2	None Detected									
K2	H1	None Detected									
K2	J2	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:	042415375
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:	07/24/2024 10:00 AM
Analysis Date:	07/30/2024
Report Date:	07/31/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

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

EMSL Sample Number:	042415375-0021		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	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**	**< 23.18**			
Total Amphibole	**ADX**	**0**	**0**	**< 23.18**			
Actinolite	ADX	0	0	< 23.18			
Amosite	ADX	0	0	< 23.18			
Anthophyllite	ADX	0	0	< 23.18			
Crocidolite	ADX	0	0	< 23.18			
Tremolite	ADX	0	0	< 23.18			
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.18**			
Other Minerals	-	0	0	< 23.18			
Total All Structures	**-**	**0**	**0**	**< 23.18**			

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

	Minimum ID Level	Fibers Detected 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**	**< 23.18**			
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.18**			
Actinolite	ADX	0	0	< 23.18			
Amosite	ADX	0	0	< 23.18			
Anthophyllite	ADX	0	0	< 23.18			
Crocidolite	ADX	0	0	< 23.18			
Tremolite	ADX	0	0	< 23.18			
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.18**			
Other Minerals	-	0	0	< 23.18			
Total All Structures (PCMe)	**-**	**0**	**0**	**< 23.18**			

Comment

Approved Signatory

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: 042415375
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: 042415375-0021 **Customer Sample:** Lab Blank

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
A2	J6	None Detected									
A2	I5	None Detected									
A2	F7	None Detected									
A2	D10	None Detected									
A2	B4	None Detected									
A3	J8	None Detected									
A3	H4	None Detected									
A3	F2	None Detected									
A3	D5	None Detected									
A3	B2	None Detected									

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

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL Order Number / Lab Use Only: 042415375

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

RECEIVED
EMSL
CINNAMINSON, NJ
24 JUL 24 PM 1:37

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: Mavi Fires - Lahaina
Purchase Order: 1207085
EMSL LIMS Project ID: (if applicable, EMSL will provide)
US State where samples collected:
State of Connecticut (CT) must select project location: ☐ Commercial (Taxable) ☐ Residential (Non-Taxable)
Sampled By Name: Lena Diaz
Sampled By Signature: L D
No. of Samples in Shipment: 20

Turn-Around-Time (TAT)
☐ 3 Hour ☐ 4-4.5 Hour AHERA ONLY ☐ 6 Hour ☐ 24 Hour ☐ 32 Hour ☐ 48 Hour ☐ 72 Hour ☐ 96 Hour ☒ 1 Week ☐ 2 Week
TEM Air 3-6 Hour, please call ahead to schedule. 32 Hour TAT available for select tests only; samples must be submitted by 11:30 am.

Test Selection

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

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

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

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

Other Test (please specify)

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

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

*Please call with your project-specific requirements.

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

Sample Number	Sample Location / Description		Volume, Area or Homogeneous Area	Date / Time Sampled (Air Monitoring Only)
MFL-AM01-071824-AB		DK864855	7,197.302	07/18/24 1059
MFL-AM02-071824-AB		DK864852	7,306.486	07/18/24 1116
MFL-AM03-071824-AB		DK864864	1,858.388	07/18/24 1258
MFL-AM04-071824-AB		DK864860	7,185.295	07/18/24 ~~1340~~ (LD) 1323
MFL-FB01-071824-AB		DL247156	(LD) ~~7,197.302~~ 0	07/18/24 1200
MFL-AM01-071924-AB		DL247174	7,181.982	07/19/24 1059
MFL-AM02-071924-AB		DL247162	7,319.306	07/19/24 1136
MFL-AM03-071924-AB		DL247161	4,506.118	07/19/24 1255

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

All samples received acceptable for analysis.

Method of Shipment: Fed Ex
Relinquished by: [signature] Date/Time: 07/22/24 1100
Relinquished by: Date/Time:
Sample Condition Upon Receipt:
Received by: [signature] Date/Time 7-24-24 10
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 1 of 2

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL Order Number / Lab Use Only

042415375

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

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

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

Sample Number	Sample Location / Description		Volume, Area or Homogeneous Area	Date / Time Sampled (Air Monitoring Only)	
MFL-AM04-071924-AB		DL247152	7,173.360	07/19/24	1327
MFL-FB01-071924-AB		DL247130	0	07/19/24	1200
MFL-AM01-072024-AB		DL247157	7,176.554	07/20/24	1057
MFL-AM02-072024-AB		DL247134	7,057.035	07/20/24	1112
MFL-AM03-072024-AB		DL247129	5,012.118	07/20/24	1258
MFL-AM04-072024-AB		DL247180	7,102.485	07/20/24	1320
MFL-FB01-072024-AB		DL247131	0	07/20/24	1200
MFL-AM01-072124-AB		DL247166	7,204.125	07/21/24	1057
MFL-AM02-072124-AB		DL247132	7,267.796	07/21/24	1113
MFL-AM03-072124-AB		DL247135	4,451.131	07/21/24	1258
MFL-AM04-072124-AB		DL247177	7,143.818	07/21/24	1315
MFL-FB01-072124-AB		DL247181	0	07/21/24	1200

Method of Shipment: Fed Ex		Sample Condition Upon Receipt:	
Relinquished by:	Date/Time: 07/22/24 1100	Received by:	Date/Time
Relinquished by:	Date/Time:	Received by:	Date/Time

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

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

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

Page 2 of 2

Stage 1 Data Verification Checklist – Asbestos

HDOH CAB – Ambient Community Air Sampling – Lahaina

Task Order No. 23141

Reviewed by:
Kierra Johnson 07/31/2024 and Shanna Vasser 08/02/2024
Laboratory: EMSL Analytical, Inc. – North Cinnaminson, NJ
Collection date(s): 07/18/2024 – 07/21/2024
Report No: 42415375

√	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.
X	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:

5. Sample MFL-AM03-071824-AB had a much lower volume (1,858.388 L). Therefore, to reach the desired analytical sensitivity, the laboratory analyzed the sample for 17 grid openings.

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:	042415726
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:	07/29/2024 08:55 AM
Analysis Date:	08/01/2024
Report Date:	08/02/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM01-072224-AB**		**Sample Description:**	**DL247164**
EMSL Sample Number:	042415726-0001		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7220.1
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):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	8			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Numerous gypsum fibers present.

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: 042415726
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: 042415726-0001 **Customer Sample:** MFL-AM01-072224-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
A5	J4	None Detected									
A5	F7	None Detected									
A5	A4	None Detected									
A6	C6	None Detected									
A6	G8	None Detected									

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

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

EMSL Order:	042415726
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:	07/29/2024 08:55 AM
Analysis Date:	08/01/2024
Report Date:	08/02/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-072224-AB**		**Sample Description:**	**DL247137**
EMSL Sample Number:	042415726-0002		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7157.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	8			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Numerous gypsum fibers.

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: 042415726
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: 042415726-0002 **Customer Sample:** MFL-AM02-072224-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	I3	None Detected									
B1	H7	None Detected									
B1	D5	None Detected									
B2	A4	None Detected									
B2	G7	None Detected									

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

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

EMSL Order:	042415726
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:	07/29/2024 08:55 AM
Analysis Date:	08/01/2024
Report Date:	08/02/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-072224-AB**	**Sample Description:**	**DL247136**
EMSL Sample Number:	042415726-0003	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L) :	5134.8
Aspect ratio for fiber definition:	3:1	Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5	Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A *(N/A)*	Grid Openings Analyzed:	6
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):	**0.0010**	**Limit of Detection (Structures/cc):**	**0.0030**

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**	**< 38.63**	**< 0.0030**	**Not Applicable**	**0.0030**
Total Amphibole	**ADX**	**0**	**0**	**< 38.63**	**< 0.0030**	**Not Applicable**	**0.0030**
Actinolite	ADX	0	0	< 38.63	< 0.0030	Not Applicable	0.0030
Amosite	ADX	0	0	< 38.63	< 0.0030	Not Applicable	0.0030
Anthophyllite	ADX	0	0	< 38.63	< 0.0030	Not Applicable	0.0030
Crocidolite	ADX	0	0	< 38.63	< 0.0030	Not Applicable	0.0030
Tremolite	ADX	0	0	< 38.63	< 0.0030	Not Applicable	0.0030
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 38.63**	**< 0.0030**	**Not Applicable**	**0.0030**
Other Minerals	-	0	0	< 38.63	< 0.0030	Not Applicable	0.0030
Total All Structures	**-**	**0**	**0**	**< 38.63**	**< 0.0030**	**Not Applicable**	**0.0030**

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**	**< 38.63**	**< 0.0030**	**Not Applicable**	**0.0030**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 38.63**	**< 0.0030**	**Not Applicable**	**0.0030**
Actinolite	ADX	0	0	< 38.63	< 0.0030	Not Applicable	0.0030
Amosite	ADX	0	0	< 38.63	< 0.0030	Not Applicable	0.0030
Anthophyllite	ADX	0	0	< 38.63	< 0.0030	Not Applicable	0.0030
Crocidolite	ADX	0	0	< 38.63	< 0.0030	Not Applicable	0.0030
Tremolite	ADX	0	0	< 38.63	< 0.0030	Not Applicable	0.0030
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 38.63**	**< 0.0030**	**Not Applicable**	**0.0030**
Other Minerals	-	0	0	< 38.63	< 0.0030	Not Applicable	0.0030
Total All Structures (PCMe)	**-**	**0**	**0**	**< 38.63**	**< 0.0030**	**Not Applicable**	**0.0030**

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: 042415726
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: 042415726-0003 **Customer Sample:** MFL-AM03-072224-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	H8	None Detected									
B5	H4	None Detected									
B5	C5	None Detected									
B6	A3	None Detected									
B6	F3	None Detected									
B6	I8	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:	042415726
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:	07/29/2024 08:55 AM
Analysis Date:	08/01/2024
Report Date:	08/02/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM04-072224-AB**		**Sample Description:**	**DL247122**
EMSL Sample Number:	042415726-0004		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7178.7
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):	0.0129
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**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**

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

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

Comment

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: 042415726
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: 042415726-0004 **Customer Sample:** MFL-AM04-072224-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	J5	None Detected									
C1	E9	None Detected									
C1	A5	None Detected									
C2	J7	None Detected									
C2	D8	None Detected									

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

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

EMSL Order:	042415726
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:	07/29/2024 08:55 AM
Analysis Date:	08/01/2024
Report Date:	08/02/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-FB01-072224-AB**		**Sample Description:**	**DL247146**
EMSL Sample Number:	042415726-0005		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	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**	**< 23.18**			
Total Amphibole	**ADX**	**0**	**0**	**< 23.18**			
Actinolite	ADX	0	0	< 23.18			
Amosite	ADX	0	0	< 23.18			
Anthophyllite	ADX	0	0	< 23.18			
Crocidolite	ADX	0	0	< 23.18			
Tremolite	ADX	0	0	< 23.18			
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.18**			
Other Minerals	-	0	0	< 23.18			
Total All Structures	**-**	**0**	**0**	**< 23.18**			

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

	Minimum ID Level	Fibers Detected 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**	**< 23.18**			
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.18**			
Actinolite	ADX	0	0	< 23.18			
Amosite	ADX	0	0	< 23.18			
Anthophyllite	ADX	0	0	< 23.18			
Crocidolite	ADX	0	0	< 23.18			
Tremolite	ADX	0	0	< 23.18			
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.18**			
Other Minerals	-	0	0	< 23.18			
Total All Structures (PCMe)	**-**	**0**	**0**	**< 23.18**			

Comment

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:	**042415726**
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: 042415726-0005 **Customer Sample:** MFL-FB01-072224-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	A2	None Detected									
C5	C7	None Detected									
C5	F9	None Detected									
C5	H5	None Detected									
C6	B4	None Detected									
C6	D7	None Detected									
C6	F3	None Detected									
C7	C8	None Detected									
C7	E4	None Detected									
C7	A7	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:	042415726
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:	07/29/2024 08:55 AM
Analysis Date:	08/01/2024
Report Date:	08/02/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM01-072324-AB**		**Sample Description:**	**DL247151**
EMSL Sample Number:	042415726-0006		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7267.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	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**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**

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

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

Comment

Numerous gypsum fibers present.

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: 042415726
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: 042415726-0006 **Customer Sample:** MFL-AM01-072324-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
D1	A6	None Detected									
D1	D5	None Detected									
D1	G8	None Detected									
D2	H5	None Detected									
D2	C5	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:	042415726
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Fires - Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
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Analysis Date:	08/01/2024
Report Date:	08/02/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-072324-AB**		**Sample Description:**	**DL247139**
EMSL Sample Number:	042415726-0007		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7309.6
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):	0.0129
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**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**

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

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

Comment

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: 042415726
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: 042415726-0007 **Customer Sample:** MFL-AM02-072324-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
D5	I5	None Detected									
D5	E3	None Detected									
D5	B5	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:	042415726
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Fires - Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
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ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-072324-AB**		**Sample Description:**	**DL247138**
EMSL Sample Number:	042415726-0008		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7393.8
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	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**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**

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

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

Comment

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: 042415726
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: 042415726-0008 **Customer Sample:** MFL-AM03-072324-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	I5	None Detected									
E1	E7	None Detected									
E1	A4	None Detected									
E2	C8	None Detected									
E2	H6	None Detected									

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

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

EMSL Order:	042415726
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:	07/29/2024 08:55 AM
Analysis Date:	08/02/2024
Report Date:	08/02/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM04-072324-AB**	**Sample Description:**	**Dl247170**
EMSL Sample Number:	042415726-0009	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L) :	7179.2
Aspect ratio for fiber definition:	3:1	Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5	Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A *(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD	Analyst:	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**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**

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

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

Comment

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: 042415726
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: 042415726-0009 **Customer Sample:** MFL-AM04-072324-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	A5	None Detected									
E5	D8	None Detected									
E5	G4	None Detected									
E6	J9	None Detected									
E6	F4	None Detected									

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

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

EMSL Order:	042415726
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:	07/29/2024 08:55 AM
Analysis Date:	08/02/2024
Report Date:	08/02/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-072324-AB** **Sample Description:** **DL247142**

EMSL Sample Number:	042415726-0010		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	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**	**< 23.18**			
Total Amphibole	**ADX**	**0**	**0**	**< 23.18**			
Actinolite	ADX	0	0	< 23.18			
Amosite	ADX	0	0	< 23.18			
Anthophyllite	ADX	0	0	< 23.18			
Crocidolite	ADX	0	0	< 23.18			
Tremolite	ADX	0	0	< 23.18			
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.18**			
Other Minerals	-	0	0	< 23.18			
Total All Structures	**-**	**0**	**0**	**< 23.18**			

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

	Minimum ID Level	Fibers Detected 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**	**< 23.18**			
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.18**			
Actinolite	ADX	0	0	< 23.18			
Amosite	ADX	0	0	< 23.18			
Anthophyllite	ADX	0	0	< 23.18			
Crocidolite	ADX	0	0	< 23.18			
Tremolite	ADX	0	0	< 23.18			
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.18**			
Other Minerals	-	0	0	< 23.18			
Total All Structures (PCMe)	**-**	**0**	**0**	**< 23.18**			

Comment

Robyn Ray
Approved Signatory

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

EMSL Order ID: 042415726
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: 042415726-0010 **Customer Sample:** MFL-FB01-072324-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	J7	None Detected									
F1	G3	None Detected									
F1	E5	None Detected									
F1	A3	None Detected									
F2	B8	None Detected									
F2	D4	None Detected									
F2	I5	None Detected									
F3	J5	None Detected									
F3	E2	None Detected									
F3	C6	None Detected									

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

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

EMSL Order:	042415726
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Fires - Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
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Analysis Date:	08/02/2024
Report Date:	08/02/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM01-072424-AB**		**Sample Description:**	**DL247133**
EMSL Sample Number:	042415726-0011		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7226.2
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	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**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**

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

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

Comment

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: 042415726
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: 042415726-0011 **Customer Sample:** MFL-AM01-072424-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	I7	None Detected									
F5	F3	None Detected									
F5	A6	None Detected									
F6	G8	None Detected									
F6	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:	042415726
Customer ID:	TTDC42
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Project ID:	N/A

Attn: **Chelsea Saber**
Tetra Tech
1560 Broadway, Suite 1400
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Analysis Date:	08/02/2024
Report Date:	08/02/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-072424-AB**	**Sample Description:**	**DL247144**
EMSL Sample Number:	042415726-0012	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L) :	7116.3
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):	0.0129
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**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**

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

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

Comment

Numerous gypsum fibers present.

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: 042415726
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: 042415726-0012 **Customer Sample:** MFL-AM02-072424-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	J5	None Detected									
G1	F8	None Detected									
G1	B5	None Detected									
G2	C9	None Detected									
G2	G4	None Detected									

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

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

EMSL Order:	042415726
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:	07/29/2024 08:55 AM
Analysis Date:	08/02/2024
Report Date:	08/02/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-072424-AB**	**Sample Description:**	**DL247173**
EMSL Sample Number:	042415726-0013	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L) :	7108.5
Aspect ratio for fiber definition:	3:1	Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5	Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A *(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD	Analyst:	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**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**

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

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

Comment

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: 042415726
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: 042415726-0013 **Customer Sample:** MFL-AM03-072424-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	A7	None Detected									
G5	F8	None Detected									
G5	I5	None Detected									
G6	C3	None Detected									
G6	H6	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:	042415726
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:	07/29/2024 08:55 AM
Analysis Date:	08/02/2024
Report Date:	08/02/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM04-072424-AB**	**Sample Description:**	**DL247155**
EMSL Sample Number:	042415726-0014	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L) :	7088.6
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):	0.0129
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**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**

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

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

Comment

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: 042415726
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: 042415726-0014 **Customer Sample:** MFL-AM04-072424-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	I7	None Detected									
H1	G3	None Detected									
H1	C4	None Detected									
H2	H2	None Detected									
H2	D5	None Detected									

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

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

EMSL Order:	042415726
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:	07/29/2024 08:55 AM
Analysis Date:	08/02/2024
Report Date:	08/02/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-072424-AB** **Sample Description:** **DL247141**

EMSL Sample Number:	042415726-0015		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):	0.0129
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**	**< 23.18**			
Total Amphibole	**ADX**	**0**	**0**	**< 23.18**			
Actinolite	ADX	0	0	< 23.18			
Amosite	ADX	0	0	< 23.18			
Anthophyllite	ADX	0	0	< 23.18			
Crocidolite	ADX	0	0	< 23.18			
Tremolite	ADX	0	0	< 23.18			
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.18**			
Other Minerals	-	0	0	< 23.18			
Total All Structures	**-**	**0**	**0**	**< 23.18**			

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

	Minimum ID Level	Fibers Detected 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**	**< 23.18**			
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.18**			
Actinolite	ADX	0	0	< 23.18			
Amosite	ADX	0	0	< 23.18			
Anthophyllite	ADX	0	0	< 23.18			
Crocidolite	ADX	0	0	< 23.18			
Tremolite	ADX	0	0	< 23.18			
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.18**			
Other Minerals	-	0	0	< 23.18			
Total All Structures (PCMe)	**-**	**0**	**0**	**< 23.18**			

Comment

Approved Signatory

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: 042415726
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: 042415726-0015 **Customer Sample:** MFL-FB01-072424-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
H5	A8	None Detected									
H5	D5	None Detected									
H5	G2	None Detected									
H5	J6	None Detected									
H6	H9	None Detected									
H6	E4	None Detected									
H6	B3	None Detected									
H7	I4	None Detected									
H7	F6	None Detected									
H7	B7	None Detected									

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

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EMSL Order:	042415726
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:	07/29/2024 08:55 AM
Analysis Date:	08/01/2024
Report Date:	08/02/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**Lab Blank**		**Sample Description:**	**Lab Blank**
EMSL Sample Number:	042415726-0016		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):	0.0129
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**	**< 23.18**			
Total Amphibole	**ADX**	**0**	**0**	**< 23.18**			
Actinolite	ADX	0	0	< 23.18			
Amosite	ADX	0	0	< 23.18			
Anthophyllite	ADX	0	0	< 23.18			
Crocidolite	ADX	0	0	< 23.18			
Tremolite	ADX	0	0	< 23.18			
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.18**			
Other Minerals	-	0	0	< 23.18			
Total All Structures	**-**	**0**	**0**	**< 23.18**			

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

	Minimum ID Level	Fibers Detected 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**	**< 23.18**			
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.18**			
Actinolite	ADX	0	0	< 23.18			
Amosite	ADX	0	0	< 23.18			
Anthophyllite	ADX	0	0	< 23.18			
Crocidolite	ADX	0	0	< 23.18			
Tremolite	ADX	0	0	< 23.18			
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.18**			
Other Minerals	-	0	0	< 23.18			
Total All Structures (PCMe)	**-**	**0**	**0**	**< 23.18**			

Comment

Approved Signatory

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: 042415726
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: 042415726-0016 **Customer Sample:** Lab Blank

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
A1	J4	None Detected									
A1	H2	None Detected									
A1	E7	None Detected									
A1	B5	None Detected									
A2	I8	None Detected									
A2	F4	None Detected									
A2	D6	None Detected									
A2	B7	None Detected									
A3	A5	None Detected									
A3	D3	None Detected									

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

OrderID: 042415726

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

EMSL Order Number / Lab Use Only

#042415726

RECEIVED EMSL CINNAMINSON, N.J. 2024 JUL 29 A 10:32

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

P.O. To is the same as "Report To" leave this section blank. Third-party billing requires written authorization.

Customer Information

Customer ID:
Company Name: TETRA TECH
Contact Name: CHELSEA SABER
Street Address: 1560 BROADWAY STE. 1400
City, State, Zip: DENVER, CO 80202 Country: USA
Phone: 703-489-2674
Email(s) for Report: chelsea.saber@tetratech.com

Billing Information

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

Project Information

Project Name/No: MAUI FIRES - LAHAINA
Purchase Order: 1207085
EMSL LIMS Project ID: (If applicable, EMSL will provide)
US State where samples collected: HI
State of Connecticut (CT) must select project location: ☐ Commercial (Taxable) ☐ Residential (Non-Taxable)
Sampled By Name: E. Karyn Saldaña
Sampled By Signature:
No. of Samples in Shipment: 15

Turn-Around-Time (TAT)

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

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

Test Selection

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

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

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

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

Other Test (please specify)

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

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

*Please call with your project-specific requirements.

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

	Sample Number	Sample Location / Description	Volume, Area or Homogeneous Area	Date / Time Sampled (Air Monitoring Only)
	MFL-AM01-072224-AB	DL247164	7,220.054	07/22/24 1057
	MFL-AM02-072224-AB	DL247137	7,157.015	07/22/24 1117
*	MFL-AM03-072224-AB	DL247136	5,134.756	07/22/24 1302
	MFL-AM04-072224-AB	DL247122	7,178.688	07/22/24 1318
	MFL-FB01-072224-AB	DL247146	0	07/22/24 1200
	MFL-AM01-072324-AB	DL247151	7,266.960	07/23/24 1059
	MFL-AM02-072324-AB	DL247139	7,309.589	07/23/24 1124
	MFL-AM03-072324-AB	DL247138	7,393.765	07/23/24 1304

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

* Note: Contact Chelsea Saber before opening additional grids. Lower volume due to equipment faulting.

All samples received acceptable for analysis.

Method of Shipment: Fed Ex
Relinquished by: Date/Time: 07/25/24 1100
Relinquished by: Date/Time:
Sample Condition Upon Receipt:
Received by: FX Date/Time: 7/29/24 8:55a
Received by: Date/Time

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

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

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

OrderID: 042415726

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL Order Number / Lab Use Only

#042415726

RECEIVED EMSL CINNAMINSON, N.J. 2024 JUL 29 A 10:32

EMSL Analytical, Inc.
200 Route 130 North
Cinnaminson, NJ 08077
PHONE: (800) 220-3675
E-MAIL: 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, Units of Detection, etc.)

Sample Number	Sample Location / Description		Volume, Area or Homogeneous Area	Date / Time Sampled (Air Monitoring Only)
MFL-AM04-072324-AB		DL247170	~~7,179.192~~ ~~7,679.192~~ (CKS)	07/23/24 1327
MFL-FB01-072324-AB		DL247142	0	07/23/24 1200
MFL-AM01-072424-AB		~~DL247133~~ ~~DL247138~~ (CKS)	7,226.242	07/24/24 1102
MFL-AM02-072424-AB		DL247144	7,116.324	07/24/24 1119
MFL-AM03-072424-AB		DL247173	7,108.487	07/24/24 1303
MFL-AM04-072424-AB		DL247155	7,088.555	07/24/24 1322
MFL-FB01-072424-AB		DL247141	0	07/24/24 1200

Method of Shipment: FedEx		Sample Condition Upon Receipt:	
Relinquished by:	Date/Time: 07/25/24 1100	Received by:	Date/Time: 7/29/24 855a
Relinquished by:	Date/Time:	Received by:	Date/Time

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

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

Stage 1 Data Verification Checklist – Asbestos

HDOH CAB – Ambient Community Air Sampling – Lahaina

Task Order No. 23141

Reviewed by:
Kierra Johnson 08/05/2024 and Shanna Vasser 08/06/2024
Laboratory: EMSL Analytical, Inc. – North Cinnaminson, NJ
Collection date(s): 07/22/2024 – 7/24/2024
Report No: 042415726

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

Discrepancies: None.

Notes:

2. The CoC noted that MFL-AM03-072224-AB had lower volume due to equipment faulting. The sample was analyzed with an additional grid opening.

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

August 06, 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 07/29/24 10:35.

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

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

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

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

Sincerely,

Julie Swift
Program Manager
julie.swift@erg.com

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/06/24 15:14
SUBMITTED: 07/29/24
AQS SITE CODE:
SITE CODE: Lahaina fires

ANALYTICAL REPORT FOR SAMPLES

SampleName	LabNumber	Matrix	Sampled	Received
MFL-AM01-071824-HM	4072929-01	Air	07/18/24 23:59	07/29/24 10:35
MFL-AM02-071824-HM	4072929-02	Air	07/18/24 23:59	07/29/24 10:35
MFL-AM03-071824-HM	4072929-03	Air	07/18/24 23:59	07/29/24 10:35
MFL-AM04-071824-HM	4072929-04	Air	07/18/24 23:59	07/29/24 10:35
MFL-FB01-071824-HM	4072929-05	Air	07/18/24 00:00	07/29/24 10:35
MFL-AM01-071924-HM	4072929-06	Air	07/19/24 23:59	07/29/24 10:35
MFL-AM02-071924-HM	4072929-07	Air	07/19/24 23:59	07/29/24 10:35
MFL-AM03-071924-HM	4072929-08	Air	07/19/24 23:59	07/29/24 10:35
MFL-AM04-071924-HM	4072929-09	Air	07/19/24 23:59	07/29/24 10:35
MFL-AM01-072024-HM	4072929-10	Air	07/20/24 23:59	07/29/24 10:35
MFL-AM02-072024-HM	4072929-11	Air	07/20/24 23:59	07/29/24 10:35
MFL-AM03-072024-HM	4072929-12	Air	07/20/24 23:59	07/29/24 10:35
MFL-AM04-072024-HM	4072929-13	Air	07/20/24 23:59	07/29/24 10:35
MFL-FB01-072024-HM	4072929-14	Air	07/20/24 00:00	07/29/24 10:35
MFL-LB01-072024-HM	4072929-15	Air	07/20/24 00:00	07/29/24 10:35
MFL-AM01-072124-HM	4072929-16	Air	07/21/24 23:59	07/29/24 10:35
MFL-AM02-072124-HM	4072929-17	Air	07/21/24 23:59	07/29/24 10:35
MFL-AM03-072124-HM	4072929-18	Air	07/21/24 23:59	07/29/24 10:35
MFL-AM04-072124-HM	4072929-19	Air	07/21/24 23:59	07/29/24 10:35
MFL-AM01-072224-HM	4072929-20	Air	07/22/24 23:59	07/29/24 10:35
MFL-AM02-072224-HM	4072929-21	Air	07/22/24 23:59	07/29/24 10:35

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/06/24 15:14
SUBMITTED: 07/29/24
AQS SITE CODE:
SITE CODE: Lahaina fires

MFL-AM03-072224-HM	4072929-22	Air	07/22/24 23:59	07/29/24 10:35
MFL-AM04-072224-HM	4072929-23	Air	07/22/24 23:59	07/29/24 10:35
MFL-FB01-072224-HM	4072929-24	Air	07/22/24 00:00	07/29/24 10:35
MFL-AM01-072324-HM	4072929-25	Air	07/23/24 23:59	07/29/24 10:35
MFL-AM02-072324-HM	4072929-26	Air	07/23/24 23:59	07/29/24 10:35
MFL-AM03-072324-HM	4072929-27	Air	07/23/24 23:59	07/29/24 10:35
MFL-AM04-072324-HM	4072929-28	Air	07/23/24 23:59	07/29/24 10:35
MFL-AM01-072424-HM	4072929-29	Air	07/24/24 23:59	07/29/24 10:35
MFL-AM02-072424-HM	4072929-30	Air	07/24/24 23:59	07/29/24 10:35
MFL-AM03-072424-HM	4072929-31	Air	07/24/24 23:59	07/29/24 10:35
MFL-AM04-072424-HM	4072929-32	Air	07/24/24 23:59	07/29/24 10:35
MFL-FB01-072424-HM	4072929-33	Air	07/24/24 00:00	07/29/24 10:35

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/06/24 15:14
SUBMITTED: 07/29/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-071824-HM
Matrix: Air
Lab ID: 4072929-01
Sample Volume: 1897.193 m³
Filter ID:
Sampled: 07/18/24 23:59
Received: 07/29/24 10:35
Analysis Date: 07/31/24 03:07

Comments: Q9539697 - Recieved 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**	**0.0916**		**0.0331**
Arsenic	**7440-38-2**	**2.64**		**0.00804**
Barium	**7440-39-3**	**9.65**		**0.918**
Beryllium	**7440-41-7**	**0.0497**		**0.00274**
Cadmium	7440-43-9	0.0464	U	0.0635
Chromium	**7440-47-3**	**7.88**		**1.90**
Cobalt	**7440-48-4**	**1.56**		**0.0374**
Copper	**7440-50-8**	**142**		**2.26**
Lead	**7439-92-1**	**0.560**		**0.184**
Manganese	**7439-96-5**	**39.0**		**1.62**
Molybdenum	**7439-98-7**	**5.39**		**0.308**
Nickel	**7440-02-0**	**3.84**		**0.559**
Selenium	**7782-49-2**	**0.251**		**0.00768**
Thallium	**7440-28-0**	**0.00216**	QB-04	**5.05E-4**
Vanadium	**7440-62-2**	**4.56**		**0.0454**
Zinc	7440-66-6	18.9	U	65.9

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/06/24 15:14
SUBMITTED: 07/29/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-071824-HM
Matrix: Air
Lab ID: 4072929-02
Sample Volume: 1988.843 m³
Filter ID:
Sampled: 07/18/24 23:59
Received: 07/29/24 10:35
Analysis Date: 07/31/24 03:26

Comments: Q9539696 - Recieved in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.148**	SL	**0.0316**
Arsenic	**7440-38-2**	**0.711**		**0.00767**
Barium	**7440-39-3**	**7.74**		**0.875**
Beryllium	**7440-41-7**	**0.0247**		**0.00262**
Cadmium	7440-43-9	0.0191	U	0.0606
Chromium	**7440-47-3**	**4.10**		**1.81**
Cobalt	**7440-48-4**	**0.885**		**0.0357**
Copper	**7440-50-8**	**70.4**		**2.15**
Lead	**7439-92-1**	**1.32**		**0.175**
Manganese	**7439-96-5**	**24.8**		**1.55**
Molybdenum	**7439-98-7**	**2.14**		**0.294**
Nickel	**7440-02-0**	**2.53**		**0.533**
Selenium	**7782-49-2**	**0.212**		**0.00733**
Thallium	**7440-28-0**	**0.00167**	QB-04	**4.82E-4**
Vanadium	**7440-62-2**	**2.64**		**0.0433**
Zinc	7440-66-6	20.6	U	62.8

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/06/24 15:14
SUBMITTED: 07/29/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-071824-HM
Matrix: Air
Lab ID: 4072929-03
Sample Volume: 1934.077 m³
Filter ID:
Sampled: 07/18/24 23:59
Received: 07/29/24 10:35
Analysis Date: 07/31/24 03:42

Comments: Q9539695 - Recieved 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**	**0.0578**	SL	**0.0325**
Arsenic	**7440-38-2**	**0.321**		**0.00788**
Barium	**7440-39-3**	**5.26**		**0.900**
Beryllium	**7440-41-7**	**0.0755**		**0.00269**
Cadmium	7440-43-9	0.0152	U	0.0623
Chromium	**7440-47-3**	**4.53**		**1.86**
Cobalt	**7440-48-4**	**0.981**		**0.0367**
Copper	**7440-50-8**	**71.1**		**2.21**
Lead	**7439-92-1**	**0.898**		**0.180**
Manganese	**7439-96-5**	**22.1**		**1.59**
Molybdenum	**7439-98-7**	**2.98**		**0.302**
Nickel	**7440-02-0**	**2.31**		**0.548**
Selenium	**7782-49-2**	**0.229**		**0.00754**
Thallium	**7440-28-0**	**0.00164**	QB-04	**4.95E-4**
Vanadium	**7440-62-2**	**2.04**		**0.0445**
Zinc	7440-66-6	17.1	U	64.6

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/06/24 15:14
SUBMITTED: 07/29/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-071824-HM
Matrix: Air
Lab ID: 4072929-04
Sample Volume: 1734.635 m³
Filter ID:
Sampled: 07/18/24 23:59
Received: 07/29/24 10:35
Analysis Date: 07/31/24 04:01

Comments: Q9539694 - Recieved in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.111**	SL	**0.0362**
Arsenic	**7440-38-2**	**0.481**		**0.00879**
Barium	**7440-39-3**	**5.75**		**1.00**
Beryllium	**7440-41-7**	**0.0208**		**0.00300**
Cadmium	7440-43-9	0.0264	U	0.0695
Chromium	**7440-47-3**	**3.80**		**2.07**
Cobalt	**7440-48-4**	**0.730**		**0.0409**
Copper	**7440-50-8**	**33.4**		**2.47**
Lead	**7439-92-1**	**1.04**		**0.201**
Manganese	**7439-96-5**	**30.8**		**1.77**
Molybdenum	**7439-98-7**	**1.83**		**0.337**
Nickel	**7440-02-0**	**1.82**		**0.612**
Selenium	**7782-49-2**	**0.186**		**0.00840**
Thallium	**7440-28-0**	**0.00163**	QB-04	**5.52E-4**
Vanadium	**7440-62-2**	**1.89**		**0.0496**
Zinc	7440-66-6	18.2	U	72.0

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/06/24 15:14
SUBMITTED: 07/29/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-FB01-071824-HM
Matrix: Air
Lab ID: 4072929-05
Sample Volume: 1897.193 m³
Filter ID:
Sampled: 07/18/24 00:00
Received: 07/29/24 10:35
Analysis Date: 07/31/24 04:15

Comments: Q9539690 - Recieved 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	0.0122	SL, U	0.0331
Arsenic	7440-38-2	0.00575	U	0.00804
Barium	7440-39-3	0.678	U	0.918
Beryllium	7440-41-7	0.00130	U	0.00274
Cadmium	7440-43-9	0.00229	U	0.0635
Chromium	7440-47-3	1.58	U	1.90
Cobalt	7440-48-4	0.0296	U	0.0374
Copper	7440-50-8	1.11	U	2.26
Lead	7439-92-1	0.0854	U	0.184
Manganese	7439-96-5	0.266	U	1.62
Molybdenum	7439-98-7	0.264	U	0.308
Nickel	7440-02-0	0.284	U	0.559
Selenium	7782-49-2	0.00335	U	0.00768
Thallium	7440-28-0	1.47E-4	QB-04, U	5.05E-4
Vanadium	7440-62-2	0.0425	U	0.0454
Zinc	7440-66-6	13.0	U	65.9

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/06/24 15:14
SUBMITTED: 07/29/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-071924-HM
Matrix: Air
Lab ID: 4072929-06
Sample Volume: 1867.515 m³
Filter ID:
Sampled: 07/19/24 23:59
Received: 07/29/24 10:35
Analysis Date: 07/31/24 00:12

Comments: Q9539693 - Recieved 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**	**0.0844**	SL	**0.0336**
Arsenic	**7440-38-2**	**2.01**	QM-07	**0.00816**
Barium	**7440-39-3**	**8.18**		**0.932**
Beryllium	**7440-41-7**	**0.0355**		**0.00279**
Cadmium	7440-43-9	0.0302	U	0.0646
Chromium	**7440-47-3**	**7.45**	A-01	**1.93**
Cobalt	**7440-48-4**	**1.59**	A-01	**0.0380**
Copper	**7440-50-8**	**143**	A-01	**2.29**
Lead	**7439-92-1**	**0.608**		**0.186**
Manganese	**7439-96-5**	**36.8**	A-01	**1.65**
Molybdenum	**7439-98-7**	**5.30**	QM-4X	**0.313**
Nickel	**7440-02-0**	**4.34**		**0.568**
Selenium	**7782-49-2**	**0.232**		**0.00781**
Thallium	**7440-28-0**	**0.00182**	QB-04	**5.13E-4**
Vanadium	**7440-62-2**	**4.35**		**0.0461**
Zinc	7440-66-6	15.5	U	66.9

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/06/24 15:14
SUBMITTED: 07/29/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-071924-HM
Matrix: Air
Lab ID: 4072929-07
Sample Volume: 2051.254 m³
Filter ID:
Sampled: 07/19/24 23:59
Received: 07/29/24 10:35
Analysis Date: 07/31/24 04:30

Comments: Q9539691 - Recieved 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**	**0.113**	SL	**0.0306**
Arsenic	**7440-38-2**	**0.524**		**0.00743**
Barium	**7440-39-3**	**6.95**		**0.849**
Beryllium	**7440-41-7**	**0.0240**		**0.00254**
Cadmium	7440-43-9	0.0177	U	0.0588
Chromium	**7440-47-3**	**4.32**		**1.75**
Cobalt	**7440-48-4**	**0.830**		**0.0346**
Copper	**7440-50-8**	**76.7**		**2.09**
Lead	**7439-92-1**	**1.90**		**0.170**
Manganese	**7439-96-5**	**22.1**		**1.50**
Molybdenum	**7439-98-7**	**2.15**		**0.285**
Nickel	**7440-02-0**	**2.48**		**0.517**
Selenium	**7782-49-2**	**0.197**		**0.00711**
Thallium	**7440-28-0**	**0.00136**	QB-04	**4.67E-4**
Vanadium	**7440-62-2**	**2.44**		**0.0420**
Zinc	7440-66-6	22.3	U	60.9

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/06/24 15:14
SUBMITTED: 07/29/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-071924-HM
Matrix: Air
Lab ID: 4072929-08
Sample Volume: 1970.219 m³
Filter ID:
Sampled: 07/19/24 23:59
Received: 07/29/24 10:35
Analysis Date: 07/31/24 04:48

Comments: Q9539689 - Recieved 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**	**0.0448**	SL	**0.0319**
Arsenic	**7440-38-2**	**0.306**		**0.00774**
Barium	**7440-39-3**	**4.40**		**0.884**
Beryllium	**7440-41-7**	**0.0518**		**0.00264**
Cadmium	7440-43-9	0.0163	U	0.0612
Chromium	**7440-47-3**	**4.52**		**1.83**
Cobalt	**7440-48-4**	**0.796**		**0.0360**
Copper	**7440-50-8**	**70.1**		**2.17**
Lead	**7439-92-1**	**0.643**		**0.177**
Manganese	**7439-96-5**	**20.3**		**1.56**
Molybdenum	**7439-98-7**	**2.80**		**0.296**
Nickel	**7440-02-0**	**2.26**		**0.538**
Selenium	**7782-49-2**	**0.216**		**0.00740**
Thallium	**7440-28-0**	**0.00138**	QB-04	**4.86E-4**
Vanadium	**7440-62-2**	**1.90**		**0.0437**
Zinc	7440-66-6	19.8	U	63.4

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/06/24 15:14
SUBMITTED: 07/29/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-071924-HM
Matrix: Air
Lab ID: 4072929-09
Sample Volume: 1838.082 m³
Filter ID:
Sampled: 07/19/24 23:59
Received: 07/29/24 10:35
Analysis Date: 07/31/24 05:06

Comments: Q9539688 - Recieved 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**	**0.0732**	SL	**0.0342**
Arsenic	**7440-38-2**	**0.386**		**0.00829**
Barium	**7440-39-3**	**4.76**		**0.947**
Beryllium	**7440-41-7**	**0.0195**		**0.00283**
Cadmium	**7440-43-9**	**0.147**		**0.0656**
Chromium	**7440-47-3**	**3.74**		**1.96**
Cobalt	**7440-48-4**	**0.595**		**0.0386**
Copper	**7440-50-8**	**36.3**		**2.33**
Lead	**7439-92-1**	**1.05**		**0.189**
Manganese	**7439-96-5**	**22.4**		**1.67**
Molybdenum	**7439-98-7**	**1.74**		**0.318**
Nickel	**7440-02-0**	**1.93**		**0.577**
Selenium	**7782-49-2**	**0.168**		**0.00793**
Thallium	**7440-28-0**	**0.00127**	QB-04	**5.21E-4**
Vanadium	**7440-62-2**	**1.61**		**0.0468**
Zinc	7440-66-6	16.5	U	68.0

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/06/24 15:14
SUBMITTED: 07/29/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-072024-HM
Matrix: Air
Lab ID: 4072929-10
Sample Volume: 1880.865 m³
Filter ID:
Sampled: 07/20/24 23:59
Received: 07/29/24 10:35
Analysis Date: 07/31/24 05:20

Comments: Q9539686 - Recieved 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**	**0.0461**	SL	**0.0334**
Arsenic	**7440-38-2**	**0.401**		**0.00811**
Barium	**7440-39-3**	**4.08**		**0.926**
Beryllium	**7440-41-7**	**0.0141**		**0.00277**
Cadmium	7440-43-9	0.0217	U	0.0641
Chromium	**7440-47-3**	**3.83**		**1.91**
Cobalt	**7440-48-4**	**0.551**		**0.0377**
Copper	**7440-50-8**	**190**		**2.28**
Lead	**7439-92-1**	**0.362**		**0.185**
Manganese	**7439-96-5**	**14.5**		**1.63**
Molybdenum	**7439-98-7**	**11.9**		**0.311**
Nickel	**7440-02-0**	**1.79**		**0.564**
Selenium	**7782-49-2**	**0.161**		**0.00775**
Thallium	**7440-28-0**	**0.00131**	QB-04	**5.10E-4**
Vanadium	**7440-62-2**	**1.89**		**0.0458**
Zinc	7440-66-6	13.5	U	66.4

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/06/24 15:14
SUBMITTED: 07/29/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-072024-HM
Matrix: Air
Lab ID: 4072929-11
Sample Volume: 2036.314 m³
Filter ID:
Sampled: 07/20/24 23:59
Received: 07/29/24 10:35
Analysis Date: 07/31/24 05:35

Comments: Q9539685 - Recieved 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**	**0.109**	SL	**0.0308**
Arsenic	**7440-38-2**	**0.414**		**0.00749**
Barium	**7440-39-3**	**5.29**		**0.855**
Beryllium	**7440-41-7**	**0.0143**		**0.00256**
Cadmium	**7440-43-9**	**0.0593**		**0.0592**
Chromium	**7440-47-3**	**2.76**		**1.77**
Cobalt	**7440-48-4**	**0.413**		**0.0348**
Copper	**7440-50-8**	**39.2**		**2.10**
Lead	**7439-92-1**	**1.57**		**0.171**
Manganese	**7439-96-5**	**13.2**		**1.51**
Molybdenum	**7439-98-7**	**2.61**		**0.287**
Nickel	**7440-02-0**	**1.22**		**0.521**
Selenium	**7782-49-2**	**0.166**		**0.00716**
Thallium	**7440-28-0**	**0.00141**	QB-04	**4.71E-4**
Vanadium	**7440-62-2**	**1.54**		**0.0423**
Zinc	7440-66-6	16.6	U	61.4

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/06/24 15:14
SUBMITTED: 07/29/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-072024-HM
Matrix: Air
Lab ID: 4072929-12
Sample Volume: 1981.882 m³
Filter ID:
Sampled: 07/20/24 23:59
Received: 07/29/24 10:35
Analysis Date: 07/31/24 06:44

Comments: Q9539684 - Recieved 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**	**0.0562**	SL	**0.0317**
Arsenic	**7440-38-2**	**0.238**		**0.00769**
Barium	**7440-39-3**	**3.15**		**0.878**
Beryllium	**7440-41-7**	**0.0198**		**0.00263**
Cadmium	7440-43-9	0.0138	U	0.0608
Chromium	**7440-47-3**	**3.01**		**1.81**
Cobalt	**7440-48-4**	**0.454**		**0.0358**
Copper	**7440-50-8**	**42.0**		**2.16**
Lead	**7439-92-1**	**0.448**		**0.176**
Manganese	**7439-96-5**	**11.7**		**1.55**
Molybdenum	**7439-98-7**	**2.33**		**0.295**
Nickel	**7440-02-0**	**1.64**		**0.535**
Selenium	**7782-49-2**	**0.131**		**0.00736**
Thallium	**7440-28-0**	**0.00153**		**4.84E-4**
Vanadium	**7440-62-2**	**1.27**		**0.0434**
Zinc	7440-66-6	16.3	U	63.0

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/06/24 15:14
SUBMITTED: 07/29/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-072024-HM
Matrix: Air
Lab ID: 4072929-13
Sample Volume: 1741.032 m³
Filter ID:
Sampled: 07/20/24 23:59
Received: 07/29/24 10:35
Analysis Date: 07/30/24 20:16

Comments: Q9539683 - MS/MSD -Recieved 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**	**0.0818**	SL	**0.0361**
Arsenic	**7440-38-2**	**0.304**		**0.00876**
Barium	**7440-39-3**	**3.93**		**1.00**
Beryllium	**7440-41-7**	**0.0128**		**0.00299**
Cadmium	7440-43-9	0.0189	U	0.0692
Chromium	**7440-47-3**	**3.16**		**2.07**
Cobalt	**7440-48-4**	**0.421**		**0.0407**
Copper	**7440-50-8**	**39.3**		**2.46**
Lead	**7439-92-1**	**0.834**		**0.200**
Manganese	**7439-96-5**	**13.8**		**1.77**
Molybdenum	**7439-98-7**	**2.28**		**0.335**
Nickel	**7440-02-0**	**1.31**		**0.609**
Selenium	**7782-49-2**	**0.157**		**0.00837**
Thallium	**7440-28-0**	**0.00142**		**5.50E-4**
Vanadium	**7440-62-2**	**1.30**		**0.0494**
Zinc	7440-66-6	17.9	U	71.8

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/06/24 15:14
SUBMITTED: 07/29/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-FB01-072024-HM
Matrix: Air
Lab ID: 4072929-14
Sample Volume: 1880.865 m³
Filter ID:
Sampled: 07/20/24 00:00
Received: 07/29/24 10:35
Analysis Date: 07/31/24 06:59

Comments: Q9539678 - Recieved 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	0.00697	SL, U	0.0334
Arsenic	7440-38-2	0.00441	U	0.00811
Barium	7440-39-3	0.604	U	0.926
Beryllium	7440-41-7	0.00119	U	0.00277
Cadmium	7440-43-9	0.00221	U	0.0641
Chromium	7440-47-3	1.53	U	1.91
Cobalt	7440-48-4	0.0266	U	0.0377
Copper	7440-50-8	0.654	U	2.28
Lead	7439-92-1	0.0611	U	0.185
Manganese	7439-96-5	0.229	U	1.63
Molybdenum	7439-98-7	0.271	U	0.311
Nickel	7440-02-0	0.274	U	0.564
Selenium	7782-49-2	8.79E-4	U	0.00775
Thallium	7440-28-0	1.42E-4	U	5.10E-4
Vanadium	7440-62-2	0.0211	U	0.0458
Zinc	7440-66-6	4.25	U	66.4

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/06/24 15:14
SUBMITTED: 07/29/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-LB01-072024-HM
Matrix: Air
Lab ID: 4072929-15
Sample Volume: 1880.865 m³
Filter ID:
Sampled: 07/20/24 00:00
Received: 07/29/24 10:35
Analysis Date: 07/31/24 07:13

Comments: Q9539078 - Recieved 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	0.0112	SL, U	0.0334
Arsenic	7440-38-2	0.00337	U	0.00811
Barium	7440-39-3	0.471	U	0.926
Beryllium	7440-41-7	9.41E-4	U	0.00277
Cadmium	7440-43-9	0.00101	U	0.0641
Chromium	7440-47-3	1.32	U	1.91
Cobalt	7440-48-4	0.0254	U	0.0377
Copper	7440-50-8	0.397	U	2.28
Lead	7439-92-1	0.0388	U	0.185
Manganese	7439-96-5	0.160	U	1.63
Molybdenum	7439-98-7	0.198	U	0.311
Nickel	7440-02-0	0.328	U	0.564
Selenium	7782-49-2	8.36E-4	U	0.00775
Thallium	7440-28-0	1.03E-4	U	5.10E-4
Vanadium	7440-62-2	0.0229	U	0.0458
Zinc	7440-66-6	2.95	U	66.4

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/06/24 15:14
SUBMITTED: 07/29/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-072124-HM
Matrix: Air
Lab ID: 4072929-16
Sample Volume: 1892.741 m³
Filter ID:
Sampled: 07/21/24 23:59
Received: 07/29/24 10:35
Analysis Date: 07/31/24 07:26

Comments: Q9539682 - Recieved 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**	**0.0517**	SL	**0.0332**
Arsenic	**7440-38-2**	**0.550**		**0.00805**
Barium	**7440-39-3**	**5.26**		**0.920**
Beryllium	**7440-41-7**	**0.0210**		**0.00275**
Cadmium	7440-43-9	0.0299	U	0.0637
Chromium	**7440-47-3**	**3.97**		**1.90**
Cobalt	**7440-48-4**	**0.597**		**0.0375**
Copper	**7440-50-8**	**235**		**2.26**
Lead	**7439-92-1**	**0.564**		**0.184**
Manganese	**7439-96-5**	**18.4**		**1.62**
Molybdenum	**7439-98-7**	**18.0**		**0.309**
Nickel	**7440-02-0**	**1.71**		**0.560**
Selenium	**7782-49-2**	**0.260**		**0.00770**
Thallium	**7440-28-0**	**0.00299**		**5.06E-4**
Vanadium	**7440-62-2**	**2.29**		**0.0455**
Zinc	7440-66-6	10.7	U	66.0

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/06/24 15:14
SUBMITTED: 07/29/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-072124-HM
Matrix: Air
Lab ID: 4072929-17
Sample Volume: 2113.073 m³
Filter ID:
Sampled: 07/21/24 23:59
Received: 07/29/24 10:35
Analysis Date: 07/31/24 07:44

Comments: Q9539679 - Recieved 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**	**0.0819**	SL	**0.0297**
Arsenic	**7440-38-2**	**0.714**		**0.00721**
Barium	**7440-39-3**	**6.44**		**0.824**
Beryllium	**7440-41-7**	**0.0308**		**0.00246**
Cadmium	7440-43-9	0.0362	U	0.0571
Chromium	**7440-47-3**	**3.35**		**1.70**
Cobalt	**7440-48-4**	**0.694**		**0.0336**
Copper	**7440-50-8**	**38.8**		**2.03**
Lead	**7439-92-1**	**2.00**		**0.165**
Manganese	**7439-96-5**	**23.2**		**1.46**
Molybdenum	**7439-98-7**	**2.07**		**0.276**
Nickel	**7440-02-0**	**2.11**		**0.502**
Selenium	**7782-49-2**	**0.304**		**0.00690**
Thallium	**7440-28-0**	**0.00261**		**4.54E-4**
Vanadium	**7440-62-2**	**2.57**		**0.0407**
Zinc	7440-66-6	19.7	U	59.1

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/06/24 15:14
SUBMITTED: 07/29/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-072124-HM
Matrix: Air
Lab ID: 4072929-18
Sample Volume: 1873.011 m³
Filter ID:
Sampled: 07/21/24 23:59
Received: 07/29/24 10:35
Analysis Date: 07/31/24 08:00

Comments: Q9539677 - Recieved 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**	**0.0553**	SL	**0.0335**
Arsenic	**7440-38-2**	**0.264**		**0.00814**
Barium	**7440-39-3**	**3.22**		**0.929**
Beryllium	**7440-41-7**	**0.0139**		**0.00278**
Cadmium	7440-43-9	0.0359	U	0.0644
Chromium	**7440-47-3**	**2.57**		**1.92**
Cobalt	**7440-48-4**	**0.327**		**0.0379**
Copper	**7440-50-8**	**61.4**		**2.28**
Lead	**7439-92-1**	**0.775**		**0.186**
Manganese	**7439-96-5**	**9.28**		**1.64**
Molybdenum	**7439-98-7**	**3.13**		**0.312**
Nickel	**7440-02-0**	**1.37**		**0.566**
Selenium	**7782-49-2**	**0.247**		**0.00778**
Thallium	**7440-28-0**	**0.00217**		**5.12E-4**
Vanadium	**7440-62-2**	**1.15**		**0.0460**
Zinc	7440-66-6	28.7	U	66.7

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/06/24 15:14
SUBMITTED: 07/29/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-072124-HM
Matrix: Air
Lab ID: 4072929-19
Sample Volume: 1795.017 m³
Filter ID:
Sampled: 07/21/24 23:59
Received: 07/29/24 10:35
Analysis Date: 07/31/24 08:16

Comments: Q9539079 - Recieved 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**	**0.0930**	SL	**0.0350**
Arsenic	**7440-38-2**	**0.394**		**0.00849**
Barium	**7440-39-3**	**4.20**		**0.970**
Beryllium	**7440-41-7**	**0.0123**		**0.00290**
Cadmium	7440-43-9	0.0229	U	0.0672
Chromium	**7440-47-3**	**2.70**		**2.00**
Cobalt	**7440-48-4**	**0.371**		**0.0395**
Copper	**7440-50-8**	**27.9**		**2.38**
Lead	**7439-92-1**	**0.851**		**0.194**
Manganese	**7439-96-5**	**13.2**		**1.71**
Molybdenum	**7439-98-7**	**1.75**		**0.325**
Nickel	**7440-02-0**	**1.31**		**0.591**
Selenium	**7782-49-2**	**0.259**		**0.00812**
Thallium	**7440-28-0**	**0.00231**		**5.34E-4**
Vanadium	**7440-62-2**	**1.46**		**0.0479**
Zinc	7440-66-6	14.0	U	69.6

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/06/24 15:14
SUBMITTED: 07/29/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-072224-HM **Lab ID:** 4072929-20 **Sampled:** 07/22/24 23:59
Matrix: Air **Sample Volume:** 1901.456 m³ **Received:** 07/29/24 10:35
Filter ID: **Analysis Date:** 07/31/24 08:33

Comments: Q9539077 - Recieved 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**	**0.0622**	SL	**0.0330**
Arsenic	**7440-38-2**	**0.607**		**0.00802**
Barium	**7440-39-3**	**7.29**		**0.916**
Beryllium	**7440-41-7**	**0.0334**		**0.00274**
Cadmium	7440-43-9	0.0264	U	0.0634
Chromium	**7440-47-3**	**6.27**		**1.89**
Cobalt	**7440-48-4**	**1.22**		**0.0373**
Copper	**7440-50-8**	**241**		**2.25**
Lead	**7439-92-1**	**0.565**		**0.183**
Manganese	**7439-96-5**	**30.2**		**1.62**
Molybdenum	**7439-98-7**	**16.0**		**0.307**
Nickel	**7440-02-0**	**3.71**		**0.558**
Selenium	**7782-49-2**	**0.306**		**0.00767**
Thallium	**7440-28-0**	**0.00255**		**5.04E-4**
Vanadium	**7440-62-2**	**4.04**		**0.0453**
Zinc	7440-66-6	11.3	U	65.7

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/06/24 15:14
SUBMITTED: 07/29/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-072224-HM
Matrix: Air
Lab ID: 4072929-21
Sample Volume: 2116.602 m³
Filter ID:
Sampled: 07/22/24 23:59
Received: 07/29/24 10:35
Analysis Date: 07/31/24 08:51

Comments: Q9539074 - Recieved in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.111**	SL	**0.0297**
Arsenic	**7440-38-2**	**0.780**		**0.00720**
Barium	**7440-39-3**	**7.97**		**0.822**
Beryllium	**7440-41-7**	**0.0189**		**0.00246**
Cadmium	7440-43-9	0.0371	U	0.0570
Chromium	**7440-47-3**	**2.75**		**1.70**
Cobalt	**7440-48-4**	**0.494**		**0.0335**
Copper	**7440-50-8**	**31.8**		**2.02**
Lead	**7439-92-1**	**1.52**		**0.164**
Manganese	**7439-96-5**	**15.6**		**1.45**
Molybdenum	**7439-98-7**	**2.13**		**0.276**
Nickel	**7440-02-0**	**1.63**		**0.501**
Selenium	**7782-49-2**	**0.291**		**0.00689**
Thallium	**7440-28-0**	**0.00228**		**4.53E-4**
Vanadium	**7440-62-2**	**1.93**		**0.0407**
Zinc	7440-66-6	19.7	U	59.0

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/06/24 15:14
SUBMITTED: 07/29/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-072224-HM
Matrix: Air
Lab ID: 4072929-22
Sample Volume: 1777.989 m³
Filter ID:
Sampled: 07/22/24 23:59
Received: 07/29/24 10:35
Analysis Date: 07/31/24 10:19

Comments: Q9539073 - Recieved 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**	**0.0553**	SL	**0.0353**
Arsenic	**7440-38-2**	**0.210**		**0.00857**
Barium	**7440-39-3**	**2.97**		**0.979**
Beryllium	**7440-41-7**	**0.0246**		**0.00293**
Cadmium	7440-43-9	0.0194	U	0.0678
Chromium	**7440-47-3**	**2.76**		**2.02**
Cobalt	**7440-48-4**	**0.422**		**0.0399**
Copper	**7440-50-8**	**44.5**		**2.41**
Lead	**7439-92-1**	**0.483**		**0.196**
Manganese	**7439-96-5**	**10.7**		**1.73**
Molybdenum	**7439-98-7**	**3.27**		**0.329**
Nickel	**7440-02-0**	**1.28**		**0.597**
Selenium	**7782-49-2**	**0.225**		**0.00820**
Thallium	**7440-28-0**	**0.00208**		**5.39E-4**
Vanadium	**7440-62-2**	**1.18**		**0.0484**
Zinc	7440-66-6	12.5	U	70.3

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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: 08/06/24 15:14
SUBMITTED: 07/29/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-072224-HM
Matrix: Air
Lab ID: 4072929-23
Sample Volume: 1938.417 m³
Filter ID:
Sampled: 07/22/24 23:59
Received: 07/29/24 10:35
Analysis Date: 07/31/24 10:37

Comments: Q9539071 - Recieved 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**	**0.0957**	SL	**0.0324**
Arsenic	**7440-38-2**	**0.478**		**0.00786**
Barium	**7440-39-3**	**3.51**		**0.898**
Beryllium	**7440-41-7**	**0.0143**		**0.00269**
Cadmium	7440-43-9	0.0252	U	0.0622
Chromium	**7440-47-3**	**2.78**		**1.85**
Cobalt	**7440-48-4**	**0.413**		**0.0366**
Copper	**7440-50-8**	**27.6**		**2.21**
Lead	**7439-92-1**	**1.01**		**0.180**
Manganese	**7439-96-5**	**13.6**		**1.59**
Molybdenum	**7439-98-7**	**1.68**		**0.301**
Nickel	**7440-02-0**	**1.33**		**0.547**
Selenium	**7782-49-2**	**0.240**		**0.00752**
Thallium	**7440-28-0**	**0.00213**		**4.94E-4**
Vanadium	**7440-62-2**	**1.27**		**0.0444**
Zinc	7440-66-6	14.9	U	64.5

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

FILE #: 4205.00.003.001
REPORTED: 08/06/24 15:14
SUBMITTED: 07/29/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-FB01-072224-HM
Matrix: Air
Lab ID: 4072929-24
Sample Volume: 1901.456 m³
Filter ID:
Sampled: 07/22/24 00:00
Received: 07/29/24 10:35
Analysis Date: 07/31/24 10:53

Comments: Q9539062 - Recieved 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	0.0108	SL, U	0.0330
Arsenic	7440-38-2	0.00651	U	0.00802
Barium	7440-39-3	0.483	U	0.916
Beryllium	7440-41-7	9.28E-4	U	0.00274
Cadmium	7440-43-9	0.00127	U	0.0634
Chromium	7440-47-3	1.29	U	1.89
Cobalt	7440-48-4	0.0244	U	0.0373
Copper	7440-50-8	0.364	U	2.25
Lead	7439-92-1	0.0369	U	0.183
Manganese	7439-96-5	0.233	U	1.62
Molybdenum	7439-98-7	0.196	U	0.307
Nickel	7440-02-0	0.299	U	0.558
Selenium	7782-49-2	0.00440	U	0.00767
Thallium	7440-28-0	1.04E-4	U	5.04E-4
Vanadium	7440-62-2	0.0289	U	0.0453
Zinc	7440-66-6	6.44	U	65.7

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

FILE #: 4205.00.003.001
REPORTED: 08/06/24 15:14
SUBMITTED: 07/29/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-072324-HM
Matrix: Air
Lab ID: 4072929-25
Sample Volume: 1894.326 m³
Filter ID:
Sampled: 07/23/24 23:59
Received: 07/29/24 10:35
Analysis Date: 07/31/24 11:07

Comments: Q9539070 - Recieved 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**	**0.190**	SL	**0.0332**
Arsenic	**7440-38-2**	**6.52**		**0.00805**
Barium	**7440-39-3**	**20.4**		**0.919**
Beryllium	**7440-41-7**	**0.0725**		**0.00275**
Cadmium	**7440-43-9**	**0.0991**		**0.0636**
Chromium	**7440-47-3**	**13.7**		**1.90**
Cobalt	**7440-48-4**	**3.19**		**0.0374**
Copper	**7440-50-8**	**175**		**2.26**
Lead	**7439-92-1**	**1.07**		**0.184**
Manganese	**7439-96-5**	**83.5**		**1.62**
Molybdenum	**7439-98-7**	**10.7**		**0.308**
Nickel	**7440-02-0**	**5.88**		**0.560**
Selenium	**7782-49-2**	**0.412**		**0.00770**
Thallium	**7440-28-0**	**0.00454**		**5.06E-4**
Vanadium	**7440-62-2**	**9.42**		**0.0454**
Zinc	7440-66-6	21.0	U	66.0

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

FILE #: 4205.00.003.001
REPORTED: 08/06/24 15:14
SUBMITTED: 07/29/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-072324-HM
Matrix: Air
Lab ID: 4072929-26
Sample Volume: 2095.676 m³
Filter ID:
Sampled: 07/23/24 23:59
Received: 07/29/24 10:35
Analysis Date: 07/31/24 11:26

Comments: Q9539068 - Recieved 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**	**0.109**	SL	**0.0300**
Arsenic	**7440-38-2**	**0.780**		**0.00727**
Barium	**7440-39-3**	**8.62**		**0.831**
Beryllium	**7440-41-7**	**0.0384**		**0.00248**
Cadmium	7440-43-9	0.0296	U	0.0575
Chromium	**7440-47-3**	**5.91**		**1.72**
Cobalt	**7440-48-4**	**1.42**		**0.0338**
Copper	**7440-50-8**	**41.9**		**2.04**
Lead	**7439-92-1**	**1.77**		**0.166**
Manganese	**7439-96-5**	**37.2**		**1.47**
Molybdenum	**7439-98-7**	**2.78**		**0.279**
Nickel	**7440-02-0**	**3.86**		**0.506**
Selenium	**7782-49-2**	**0.252**		**0.00696**
Thallium	**7440-28-0**	**0.00235**		**4.57E-4**
Vanadium	**7440-62-2**	**4.44**		**0.0411**
Zinc	7440-66-6	19.1	U	59.6

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/06/24 15:14
SUBMITTED: 07/29/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-072324-HM
Matrix: Air
Lab ID: 4072929-27
Sample Volume: 1919.988 m³
Filter ID:
Sampled: 07/23/24 23:59
Received: 07/29/24 10:35
Analysis Date: 07/31/24 11:41

Comments: Q9539067 - Recieved 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**	**0.0517**	SL	**0.0327**
Arsenic	**7440-38-2**	**0.307**		**0.00794**
Barium	**7440-39-3**	**4.26**		**0.907**
Beryllium	**7440-41-7**	**0.0497**		**0.00271**
Cadmium	7440-43-9	0.0149	U	0.0628
Chromium	**7440-47-3**	**4.01**		**1.87**
Cobalt	**7440-48-4**	**0.798**		**0.0369**
Copper	**7440-50-8**	**53.7**		**2.23**
Lead	**7439-92-1**	**0.647**		**0.181**
Manganese	**7439-96-5**	**17.7**		**1.60**
Molybdenum	**7439-98-7**	**3.60**		**0.304**
Nickel	**7440-02-0**	**2.25**		**0.553**
Selenium	**7782-49-2**	**0.190**		**0.00759**
Thallium	**7440-28-0**	**0.00165**		**4.99E-4**
Vanadium	**7440-62-2**	**1.77**		**0.0448**
Zinc	7440-66-6	12.7	U	65.1

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/06/24 15:14
SUBMITTED: 07/29/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-072324-HM
Matrix: Air
Lab ID: 4072929-28
Sample Volume: 1837.581 m³
Filter ID:
Sampled: 07/23/24 23:59
Received: 07/29/24 10:35
Analysis Date: 07/31/24 11:56

Comments: Q9539064 - Recieved 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**	**0.0886**	SL	**0.0342**
Arsenic	**7440-38-2**	**0.446**		**0.00830**
Barium	**7440-39-3**	**4.06**		**0.947**
Beryllium	**7440-41-7**	**0.0143**		**0.00283**
Cadmium	7440-43-9	0.0161	U	0.0656
Chromium	**7440-47-3**	**2.83**		**1.96**
Cobalt	**7440-48-4**	**0.534**		**0.0386**
Copper	**7440-50-8**	**28.2**		**2.33**
Lead	**7439-92-1**	**1.03**		**0.189**
Manganese	**7439-96-5**	**14.9**		**1.67**
Molybdenum	**7439-98-7**	**2.04**		**0.318**
Nickel	**7440-02-0**	**1.35**		**0.577**
Selenium	**7782-49-2**	**0.163**		**0.00793**
Thallium	**7440-28-0**	**0.00145**		**5.22E-4**
Vanadium	**7440-62-2**	**1.39**		**0.0468**
Zinc	7440-66-6	13.6	U	68.0

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/06/24 15:14
SUBMITTED: 07/29/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-072424-HM
Matrix: Air
Lab ID: 4072929-29
Sample Volume: 1876.57 m³
Filter ID:
Sampled: 07/24/24 23:59
Received: 07/29/24 10:35
Analysis Date: 07/31/24 12:11

Comments: Q9539060 - Recieved 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**	**0.0628**	SL	**0.0335**
Arsenic	**7440-38-2**	**0.834**		**0.00812**
Barium	**7440-39-3**	**6.58**		**0.928**
Beryllium	**7440-41-7**	**0.0257**		**0.00277**
Cadmium	7440-43-9	0.0185	U	0.0642
Chromium	**7440-47-3**	**6.33**		**1.92**
Cobalt	**7440-48-4**	**1.30**		**0.0378**
Copper	**7440-50-8**	**197**		**2.28**
Lead	**7439-92-1**	**0.371**		**0.186**
Manganese	**7439-96-5**	**29.5**		**1.64**
Molybdenum	**7439-98-7**	**13.2**		**0.311**
Nickel	**7440-02-0**	**3.40**		**0.565**
Selenium	**7782-49-2**	**0.214**		**0.00777**
Thallium	**7440-28-0**	**0.00144**		**5.11E-4**
Vanadium	**7440-62-2**	**3.90**		**0.0459**
Zinc	7440-66-6	14.4	U	66.6

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/06/24 15:14
SUBMITTED: 07/29/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-072424-HM
Matrix: Air
Lab ID: 4072929-30
Sample Volume: 2047.944 m³
Filter ID:
Sampled: 07/24/24 23:59
Received: 07/29/24 10:35
Analysis Date: 07/31/24 12:26

Comments: Q9539056 - Recieved 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**	**0.123**	SL	**0.0307**
Arsenic	**7440-38-2**	**0.746**		**0.00744**
Barium	**7440-39-3**	**6.22**		**0.850**
Beryllium	**7440-41-7**	**0.0218**		**0.00254**
Cadmium	7440-43-9	0.0250	U	0.0589
Chromium	**7440-47-3**	**3.49**		**1.76**
Cobalt	**7440-48-4**	**0.672**		**0.0346**
Copper	**7440-50-8**	**42.8**		**2.09**
Lead	**7439-92-1**	**2.77**		**0.170**
Manganese	**7439-96-5**	**20.4**		**1.50**
Molybdenum	**7439-98-7**	**2.61**		**0.285**
Nickel	**7440-02-0**	**1.86**		**0.518**
Selenium	**7782-49-2**	**0.209**		**0.00712**
Thallium	**7440-28-0**	**0.00125**		**4.68E-4**
Vanadium	**7440-62-2**	**2.37**		**0.0420**
Zinc	7440-66-6	21.6	U	61.0

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/06/24 15:14
SUBMITTED: 07/29/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-072424-HM
Matrix: Air
Lab ID: 4072929-31
Sample Volume: 1941.932 m³
Filter ID:
Sampled: 07/24/24 23:59
Received: 07/29/24 10:35
Analysis Date: 07/31/24 13:38

Comments: Q9539054 - Recieved 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**	**0.0512**	SL	**0.0323**
Arsenic	**7440-38-2**	**0.295**		**0.00785**
Barium	**7440-39-3**	**3.47**		**0.896**
Beryllium	**7440-41-7**	**0.0315**		**0.00268**
Cadmium	7440-43-9	0.00911	U	0.0621
Chromium	**7440-47-3**	**3.10**		**1.85**
Cobalt	**7440-48-4**	**0.520**		**0.0365**
Copper	**7440-50-8**	**46.4**		**2.20**
Lead	**7439-92-1**	**0.731**		**0.179**
Manganese	**7439-96-5**	**12.2**		**1.58**
Molybdenum	**7439-98-7**	**3.36**		**0.301**
Nickel	**7440-02-0**	**1.52**		**0.546**
Selenium	**7782-49-2**	**0.156**		**0.00751**
Thallium	**7440-28-0**	**9.44E-4**	QB-04	**4.93E-4**
Vanadium	**7440-62-2**	**1.41**		**0.0443**
Zinc	7440-66-6	13.5	U	64.3

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/06/24 15:14
SUBMITTED: 07/29/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-072424-HM
Matrix: Air
Lab ID: 4072929-32
Sample Volume: 1920.663 m³
Filter ID:
Sampled: 07/24/24 23:59
Received: 07/29/24 10:35
Analysis Date: 07/31/24 14:08

Comments: Q9539052 - Recieved in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0759**	SL	**0.0327**
Arsenic	**7440-38-2**	**0.426**		**0.00794**
Barium	**7440-39-3**	**3.80**		**0.906**
Beryllium	**7440-41-7**	**0.0154**		**0.00271**
Cadmium	7440-43-9	0.0173	U	0.0628
Chromium	**7440-47-3**	**3.00**		**1.87**
Cobalt	**7440-48-4**	**0.468**		**0.0369**
Copper	**7440-50-8**	**36.6**		**2.23**
Lead	**7439-92-1**	**1.07**		**0.181**
Manganese	**7439-96-5**	**14.8**		**1.60**
Molybdenum	**7439-98-7**	**2.37**		**0.304**
Nickel	**7440-02-0**	**1.44**		**0.552**
Selenium	**7782-49-2**	**0.167**		**0.00759**
Thallium	**7440-28-0**	**9.96E-4**	QB-04	**4.99E-4**
Vanadium	**7440-62-2**	**1.44**		**0.0448**
Zinc	7440-66-6	15.3	U	65.1

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/06/24 15:14
SUBMITTED: 07/29/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-FB01-072424-HM
Matrix: Air
Lab ID: 4072929-33
Sample Volume: 1876.57 m³
Filter ID:
Sampled: 07/24/24 00:00
Received: 07/29/24 10:35
Analysis Date: 07/31/24 14:24

Comments: Q9539049 - Recieved 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	0.0118	SL, U	0.0335
Arsenic	**7440-38-2**	**0.00955**	FB-01	**0.00812**
Barium	7440-39-3	0.581	U	0.928
Beryllium	7440-41-7	0.00100	U	0.00277
Cadmium	7440-43-9	0.00129	U	0.0642
Chromium	7440-47-3	1.36	U	1.92
Cobalt	7440-48-4	0.0275	U	0.0378
Copper	7440-50-8	0.829	U	2.28
Lead	7439-92-1	0.0437	U	0.186
Manganese	7439-96-5	0.197	U	1.64
Molybdenum	7439-98-7	0.197	U	0.311
Nickel	7440-02-0	0.326	U	0.565
Selenium	7782-49-2	0.00197	U	0.00777
Thallium	7440-28-0	1.24E-4	QB-04, U	5.11E-4
Vanadium	7440-62-2	0.0300	U	0.0459
Zinc	7440-66-6	4.63	U	66.6

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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 2407110 - B4G3008										
Calibration Blank (2407110-CCB1)				Prepared & Analyzed: 07/30/24						
Antimony	0.837		ng/l							
Arsenic	2.52		ng/l							
Barium	4.86		ng/l							
Beryllium	0.344		ng/l							
Cadmium	0.322		ng/l							
Chromium	3.76		ng/l							
Cobalt	0.896		ng/l							
Copper	73.8		ng/l							
Lead	3.45		ng/l							
Manganese	8.79		ng/l							
Molybdenum	26.0		ng/l							
Nickel	0.588		ng/l							
Selenium	4.79		ng/l							
Thallium	1.31		ng/l							
Vanadium	12.2		ng/l							
Zinc	-572		ng/l							U
Calibration Blank (2407110-CCB2)				Prepared & Analyzed: 07/30/24						
Antimony	0.257		ng/l							
Arsenic	-2.47		ng/l							U
Barium	4.60		ng/l							
Beryllium	0.377		ng/l							
Cadmium	0.359		ng/l							
Chromium	3.03		ng/l							
Cobalt	0.613		ng/l							
Copper	86.4		ng/l							
Lead	3.32		ng/l							
Manganese	9.64		ng/l							
Molybdenum	7.28		ng/l							
Nickel	0.768		ng/l							
Selenium	-1.47		ng/l							U
Thallium	1.07		ng/l							
Vanadium	-3.33		ng/l							U
Zinc	-577		ng/l							U
Calibration Blank (2407110-CCB3)				Prepared: 07/30/24 Analyzed: 07/31/24						
Antimony	0.123		ng/l							
Arsenic	-1.60		ng/l							U
Barium	3.31		ng/l							
Beryllium	0.0887		ng/l							

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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2407110 - B4G3008										
Calibration Blank (2407110-CCB3) Contin				Prepared: 07/30/24 Analyzed: 07/31/24						
Cadmium	0.272		ng/l							
Chromium	2.65		ng/l							
Cobalt	0.329		ng/l							
Copper	90.6		ng/l							
Lead	2.60		ng/l							
Manganese	3.70		ng/l							
Molybdenum	8.04		ng/l							
Nickel	0.352		ng/l							
Selenium	3.60		ng/l							
Thallium	1.42		ng/l							QB-04
Vanadium	-14.1		ng/l							U
Zinc	-584		ng/l							U
Calibration Blank (2407110-CCB4)				Prepared: 07/30/24 Analyzed: 07/31/24						
Antimony	0.312		ng/l							
Arsenic	-2.28		ng/l							U
Barium	4.76		ng/l							
Beryllium	0.115		ng/l							
Cadmium	0.336		ng/l							
Chromium	3.95		ng/l							
Cobalt	0.591		ng/l							
Copper	108		ng/l							
Lead	2.85		ng/l							
Manganese	6.68		ng/l							
Molybdenum	7.23		ng/l							
Nickel	0.465		ng/l							
Selenium	0.809		ng/l							
Thallium	1.05		ng/l							
Vanadium	-10.9		ng/l							U
Zinc	-586		ng/l							U
Calibration Blank (2407110-CCB5)				Prepared: 07/30/24 Analyzed: 07/31/24						
Antimony	-0.0768		ng/l							U
Arsenic	1.69		ng/l							
Barium	2.48		ng/l							
Beryllium	-0.345		ng/l							U
Cadmium	0.204		ng/l							
Chromium	2.69		ng/l							
Cobalt	0.222		ng/l							
Copper	92.7		ng/l							

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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2407110 - B4G3008										
Calibration Blank (2407110-CCB5) Contin				Prepared: 07/30/24 Analyzed: 07/31/24						
Lead	1.11		ng/l							
Manganese	3.65		ng/l							
Molybdenum	8.03		ng/l							
Nickel	1.88		ng/l							
Selenium	0.544		ng/l							
Thallium	1.01		ng/l							
Vanadium	-10.7		ng/l							U
Zinc	-24.6		ng/l							U
Calibration Blank (2407110-CCB6)				Prepared: 07/30/24 Analyzed: 07/31/24						
Antimony	0.234		ng/l							
Arsenic	7.14		ng/l							
Barium	1.39		ng/l							
Beryllium	-0.355		ng/l							U
Cadmium	0.185		ng/l							
Chromium	1.34		ng/l							
Cobalt	0.202		ng/l							
Copper	58.6		ng/l							
Lead	1.01		ng/l							
Manganese	1.53		ng/l							
Molybdenum	7.59		ng/l							
Nickel	-0.0780		ng/l							U
Selenium	1.27		ng/l							
Thallium	0.913		ng/l							
Vanadium	-11.0		ng/l							U
Zinc	-598		ng/l							U
Calibration Blank (2407110-CCB7)				Prepared: 07/30/24 Analyzed: 07/31/24						
Antimony	0.899		ng/l							
Arsenic	2.37		ng/l							
Barium	7.04		ng/l							
Beryllium	0.395		ng/l							
Cadmium	0.542		ng/l							
Chromium	5.46		ng/l							
Cobalt	1.36		ng/l							
Copper	199		ng/l							
Lead	10.2		ng/l							
Manganese	15.2		ng/l							
Molybdenum	13.2		ng/l							
Nickel	2.50		ng/l							

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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2407110 - B4G3008										
Calibration Blank (2407110-CCB7) Contin				Prepared: 07/30/24 Analyzed: 07/31/24						
Selenium	8.18		ng/l							
Thallium	2.42		ng/l							QB-04
Vanadium	-21.6		ng/l							U
Zinc	-577		ng/l							U
Calibration Check (2407110-CCV1)				Prepared & Analyzed: 07/30/24						
Antimony	20500		ng/l	20000		103	90-110			
Arsenic	20000		ng/l	20000		100	90-110			
Barium	202000		ng/l	200000		101	90-110			
Beryllium	4960		ng/l	5000.0		99.2	90-110			
Cadmium	20700		ng/l	20000		104	90-110			
Chromium	245000		ng/l	240000		102	90-110			
Cobalt	51500		ng/l	50000		103	90-110			
Copper	2.08E6		ng/l	2.0000E6		104	90-110			
Lead	203000		ng/l	200000		101	90-110			
Manganese	506000		ng/l	500000		101	90-110			
Molybdenum	50800		ng/l	50000		102	90-110			
Nickel	124000		ng/l	120000		104	90-110			
Selenium	20200		ng/l	20000		101	90-110			
Thallium	501		ng/l	500.00		100	90-110			
Vanadium	20200		ng/l	20000		101	90-110			
Zinc	525000		ng/l	500000		105	90-110			
Calibration Check (2407110-CCV2)				Prepared & Analyzed: 07/30/24						
Antimony	20300		ng/l	20000		101	90-110			
Arsenic	19900		ng/l	20000		99.7	90-110			
Barium	200000		ng/l	200000		99.8	90-110			
Beryllium	4890		ng/l	5000.0		97.9	90-110			
Cadmium	20300		ng/l	20000		102	90-110			
Chromium	240000		ng/l	240000		100	90-110			
Cobalt	50100		ng/l	50000		100	90-110			
Copper	2.04E6		ng/l	2.0000E6		102	90-110			
Lead	199000		ng/l	200000		99.3	90-110			
Manganese	493000		ng/l	500000		98.6	90-110			
Molybdenum	49800		ng/l	50000		99.6	90-110			
Nickel	121000		ng/l	120000		101	90-110			
Selenium	19700		ng/l	20000		98.7	90-110			
Thallium	478		ng/l	500.00		95.7	90-110			
Vanadium	19900		ng/l	20000		99.6	90-110			
Zinc	518000		ng/l	500000		104	90-110			

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AQS SITE CODE:
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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2407110 - B4G3008										
Calibration Check (2407110-CCV3)				Prepared: 07/30/24 Analyzed: 07/31/24						
Antimony	20400		ng/l	20000		102	90-110			
Arsenic	20000		ng/l	20000		99.9	90-110			
Barium	204000		ng/l	200000		102	90-110			
Beryllium	5060		ng/l	5000.0		101	90-110			
Cadmium	20400		ng/l	20000		102	90-110			
Chromium	240000		ng/l	240000		100	90-110			
Cobalt	50100		ng/l	50000		100	90-110			
Copper	2.02E6		ng/l	2.0000E6		101	90-110			
Lead	200000		ng/l	200000		100	90-110			
Manganese	492000		ng/l	500000		98.3	90-110			
Molybdenum	50900		ng/l	50000		102	90-110			
Nickel	120000		ng/l	120000		100	90-110			
Selenium	20100		ng/l	20000		101	90-110			
Thallium	485		ng/l	500.00		97.0	90-110			
Vanadium	20100		ng/l	20000		100	90-110			
Zinc	518000		ng/l	500000		104	90-110			
Calibration Check (2407110-CCV4)				Prepared: 07/30/24 Analyzed: 07/31/24						
Antimony	20900		ng/l	20000		105	90-110			
Arsenic	20400		ng/l	20000		102	90-110			
Barium	213000		ng/l	200000		107	90-110			
Beryllium	5090		ng/l	5000.0		102	90-110			
Cadmium	21100		ng/l	20000		106	90-110			
Chromium	249000		ng/l	240000		104	90-110			
Cobalt	51300		ng/l	50000		103	90-110			
Copper	2.11E6		ng/l	2.0000E6		105	90-110			
Lead	205000		ng/l	200000		102	90-110			
Manganese	507000		ng/l	500000		101	90-110			
Molybdenum	53200		ng/l	50000		106	90-110			
Nickel	124000		ng/l	120000		104	90-110			
Selenium	20200		ng/l	20000		101	90-110			
Thallium	488		ng/l	500.00		97.6	90-110			
Vanadium	20600		ng/l	20000		103	90-110			
Zinc	529000		ng/l	500000		106	90-110			
Calibration Check (2407110-CCV5)				Prepared: 07/30/24 Analyzed: 07/31/24						
Antimony	21200		ng/l	20000		106	90-110			
Arsenic	20700		ng/l	20000		103	90-110			
Barium	214000		ng/l	200000		107	90-110			
Beryllium	5130		ng/l	5000.0		103	90-110			

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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2407110 - B4G3008										
Calibration Check (2407110-CCV5) Contin					Prepared: 07/30/24 Analyzed: 07/31/24					
Cadmium	21300		ng/l	20000		106	90-110			
Chromium	251000		ng/l	240000		104	90-110			
Cobalt	52600		ng/l	50000		105	90-110			
Copper	2.15E6		ng/l	2.0000E6		107	90-110			
Lead	208000		ng/l	200000		104	90-110			
Manganese	517000		ng/l	500000		103	90-110			
Molybdenum	53900		ng/l	50000		108	90-110			
Nickel	128000		ng/l	120000		106	90-110			
Selenium	20500		ng/l	20000		102	90-110			
Thallium	491		ng/l	500.00		98.3	90-110			
Vanadium	20700		ng/l	20000		104	90-110			
Zinc	538000		ng/l	500000		108	90-110			
Calibration Check (2407110-CCV6)					Prepared: 07/30/24 Analyzed: 07/31/24					
Antimony	21100		ng/l	20000		106	90-110			
Arsenic	20600		ng/l	20000		103	90-110			
Barium	210000		ng/l	200000		105	90-110			
Beryllium	5300		ng/l	5000.0		106	90-110			
Cadmium	21200		ng/l	20000		106	90-110			
Chromium	249000		ng/l	240000		104	90-110			
Cobalt	52000		ng/l	50000		104	90-110			
Copper	2.13E6		ng/l	2.0000E6		107	90-110			
Lead	205000		ng/l	200000		103	90-110			
Manganese	512000		ng/l	500000		102	90-110			
Molybdenum	53800		ng/l	50000		108	90-110			
Nickel	126000		ng/l	120000		105	90-110			
Selenium	20100		ng/l	20000		101	90-110			
Thallium	483		ng/l	500.00		96.7	90-110			
Vanadium	20600		ng/l	20000		103	90-110			
Zinc	533000		ng/l	500000		107	90-110			
Calibration Check (2407110-CCV7)					Prepared: 07/30/24 Analyzed: 07/31/24					
Antimony	21400		ng/l	20000		107	90-110			
Arsenic	20700		ng/l	20000		104	90-110			
Barium	215000		ng/l	200000		108	90-110			
Beryllium	5220		ng/l	5000.0		104	90-110			
Cadmium	21400		ng/l	20000		107	90-110			
Chromium	252000		ng/l	240000		105	90-110			
Cobalt	52000		ng/l	50000		104	90-110			
Copper	2.14E6		ng/l	2.0000E6		107	90-110			

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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2407110 - B4G3008										
Calibration Check (2407110-CCV7) Contin				Prepared: 07/30/24 Analyzed: 07/31/24						
Lead	207000		ng/l	200000		104	90-110			
Manganese	512000		ng/l	500000		102	90-110			
Molybdenum	54600		ng/l	50000		109	90-110			
Nickel	127000		ng/l	120000		105	90-110			
Selenium	20400		ng/l	20000		102	90-110			
Thallium	499		ng/l	500.00		99.7	90-110			
Vanadium	20900		ng/l	20000		105	90-110			
Zinc	539000		ng/l	500000		108	90-110			
High Cal Check (2407110-HCV1)				Prepared: 07/30/24 Analyzed: 07/31/24						
Antimony	41400		ng/l	40000		104	95-105			
Arsenic	40400		ng/l	40000		101	95-105			
Barium	417000		ng/l	400000		104	95-105			
Beryllium	10200		ng/l	10000		102	95-105			
Cadmium	41100		ng/l	40000		103	95-105			
Chromium	482000		ng/l	480000		100	95-105			
Cobalt	101000		ng/l	100000		101	95-105			
Copper	4.04E6		ng/l	4.0000E6		101	95-105			
Lead	405000		ng/l	400000		101	95-105			
Manganese	994000		ng/l	1.0000E6		99.4	95-105			
Molybdenum	106000		ng/l	100000		106	95-105			LJ, QX
Nickel	242000		ng/l	240000		101	95-105			
Selenium	39400		ng/l	40000		98.6	95-105			
Thallium	987		ng/l	1000.0		98.7	95-105			
Vanadium	40200		ng/l	40000		100	95-105			
Zinc	1.01E6		ng/l	1.0000E6		101	95-105			
Initial Cal Blank (2407110-ICB1)				Prepared & Analyzed: 07/30/24						
Antimony	0.536		ng/l							
Arsenic	-7.18		ng/l							U
Barium	3.40		ng/l							
Beryllium	0.0130		ng/l							
Cadmium	0.195		ng/l							
Chromium	1.91		ng/l							
Cobalt	0.291		ng/l							
Copper	117		ng/l							
Lead	1.54		ng/l							
Manganese	7.62		ng/l							
Molybdenum	10.4		ng/l							
Nickel	-3.14		ng/l							U

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

FILE #: 4205.00.003.001
REPORTED: 08/06/24 15:14
SUBMITTED: 07/29/24
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 2407110 - B4G3008										
Initial Cal Blank (2407110-ICB1) Continu				Prepared & Analyzed: 07/30/24						
Selenium	0.103		ng/l							
Thallium	0.931		ng/l							
Vanadium	37.2		ng/l							
Zinc	-540		ng/l							U
Initial Cal Check (2407110-ICV1)				Prepared & Analyzed: 07/30/24						
Antimony	19800		ng/l	20000		99.0	90-110			
Arsenic	19200		ng/l	20000		96.2	90-110			
Barium	198000		ng/l	200000		99.2	90-110			
Beryllium	4670		ng/l	5000.0		93.4	90-110			
Cadmium	20600		ng/l	20000		103	90-110			
Chromium	241000		ng/l	240000		101	90-110			
Cobalt	47600		ng/l	50000		95.3	90-110			
Copper	2.03E6		ng/l	2.0000E6		102	90-110			
Lead	198000		ng/l	200000		99.2	90-110			
Manganese	494000		ng/l	500000		98.9	90-110			
Molybdenum	49400		ng/l	50000		98.8	90-110			
Nickel	118000		ng/l	120000		97.9	90-110			
Selenium	20300		ng/l	20000		101	90-110			
Thallium	491		ng/l	500.00		98.3	90-110			
Vanadium	20200		ng/l	20000		101	90-110			
Zinc	518000		ng/l	500000		104	90-110			
Interference Check A (2407110-IFA1)				Prepared & Analyzed: 07/30/24						
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	327000		ng/l	300000		109	80-120			
Nickel	0.00		ng/l				80-120			U
Selenium	0.00		ng/l				80-120			U
Thallium	0.00		ng/l				80-120			U
Vanadium	0.00		ng/l				80-120			U
Zinc	0.00		ng/l				80-120			U

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2407110 - B4G3008										
Interference Check B (2407110-IFB1)					Prepared & Analyzed: 07/30/24					
Antimony	20500		ng/l	20000		103	80-120			
Arsenic	20500		ng/l	20000		102	80-120			
Barium	202000		ng/l	200000		101	80-120			
Beryllium	4750		ng/l	5000.0		95.1	80-120			
Cadmium	19800		ng/l	20000		99.0	80-120			
Chromium	232000		ng/l	240000		96.6	80-120			
Cobalt	49800		ng/l	50000		99.6	80-120			
Copper	1.92E6		ng/l	2.0000E6		96.1	80-120			
Lead	207000		ng/l	200000		103	80-120			
Manganese	508000		ng/l	500000		102	80-120			
Molybdenum	373000		ng/l	350000		107	80-120			
Nickel	116000		ng/l	120000		97.0	80-120			
Selenium	19300		ng/l	20000		96.3	80-120			
Thallium	520		ng/l	500.00		104	80-120			
Vanadium	19100		ng/l	20000		95.7	80-120			
Zinc	478000		ng/l	500000		95.5	80-120			
Batch B4G3008 - ICP-MS Extraction										
Blank (B4G3008-BLK1)					Prepared & Analyzed: 07/30/24					
Antimony	ND	0.0386	ng/m³ Air							SL, U
Arsenic	ND	0.00937	ng/m³ Air							U
Barium	ND	1.07	ng/m³ Air							U
Beryllium	ND	0.00320	ng/m³ Air							U
Cadmium	ND	0.0741	ng/m³ Air							U
Chromium	ND	2.21	ng/m³ Air							U
Cobalt	ND	0.0436	ng/m³ Air							U
Copper	ND	2.63	ng/m³ Air							U
Lead	ND	0.214	ng/m³ Air							U
Manganese	ND	1.89	ng/m³ Air							U
Molybdenum	ND	0.359	ng/m³ Air							U
Nickel	ND	0.652	ng/m³ Air							U
Selenium	ND	0.00896	ng/m³ Air							U
Thallium	ND	5.89E-4	ng/m³ Air							U
Vanadium	ND	0.0529	ng/m³ Air							U
Zinc	ND	76.8	ng/m³ Air							U
LCS (B4G3008-BS1)					Prepared & Analyzed: 07/30/24					
Antimony	0.865	0.0386	ng/m³ Air	1.3829		62.5	80-120			SL
Arsenic	2.76	0.00937	ng/m³ Air	2.7658		100	80-120			
Barium	29.0	1.07	ng/m³ Air	27.658		105	80-120			

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4G3008 - ICP-MS Extraction										
LCS (B4G3008-BS1) Continued					Prepared & Analyzed: 07/30/24					
Beryllium	1.34	0.00320	ng/m³ Air	1.3829		97.2	80-120			
Cadmium	1.43	0.0741	ng/m³ Air	1.3829		103	80-120			
Chromium	15.6	2.21	ng/m³ Air	13.829		113	80-120			
Cobalt	1.36	0.0436	ng/m³ Air	1.3829		98.5	80-120			
Copper	30.3	2.63	ng/m³ Air	27.658		109	80-120			
Lead	14.1	0.214	ng/m³ Air	13.829		102	80-120			
Manganese	8.59	1.89	ng/m³ Air	8.2975		104	80-120			
Molybdenum	1.58	0.359	ng/m³ Air	1.3829		114	80-120			
Nickel	3.26	0.652	ng/m³ Air	2.7658		118	80-120			
Selenium	2.76	0.00896	ng/m³ Air	2.7658		99.8	80-120			
Thallium	0.140	5.89E-4	ng/m³ Air	0.13829		101	80-120			
Vanadium	2.84	0.0529	ng/m³ Air	2.7658		103	80-120			
Zinc	93.8	76.8	ng/m³ Air	82.975		113	80-120			
LCS (B4G3008-BS2)					Prepared & Analyzed: 07/30/24					
Antimony	0.839	0.0386	ng/m³ Air	1.3829		60.7	80-120			SL
Arsenic	2.75	0.00937	ng/m³ Air	2.7658		99.4	80-120			
Barium	29.0	1.07	ng/m³ Air	27.658		105	80-120			
Beryllium	1.36	0.00320	ng/m³ Air	1.3829		98.2	80-120			
Cadmium	1.41	0.0741	ng/m³ Air	1.3829		102	80-120			
Chromium	15.4	2.21	ng/m³ Air	13.829		111	80-120			
Cobalt	1.34	0.0436	ng/m³ Air	1.3829		97.1	80-120			
Copper	29.8	2.63	ng/m³ Air	27.658		108	80-120			
Lead	14.0	0.214	ng/m³ Air	13.829		101	80-120			
Manganese	8.51	1.89	ng/m³ Air	8.2975		103	80-120			
Molybdenum	1.54	0.359	ng/m³ Air	1.3829		111	80-120			
Nickel	3.22	0.652	ng/m³ Air	2.7658		117	80-120			
Selenium	2.73	0.00896	ng/m³ Air	2.7658		98.6	80-120			
Thallium	0.138	5.89E-4	ng/m³ Air	0.13829		100	80-120			QB-04
Vanadium	2.83	0.0529	ng/m³ Air	2.7658		102	80-120			
Zinc	91.4	76.8	ng/m³ Air	82.975		110	80-120			
Duplicate (B4G3008-DUP1)		**Source: 4072929-13**			Prepared & Analyzed: 07/30/24					
Antimony	0.0855	0.0361	ng/m³ Air		0.0818			4.39	10	SL
Arsenic	0.352	0.00876	ng/m³ Air		0.304			14.6	10	
Barium	4.00	1.00	ng/m³ Air		3.93			1.62	10	
Beryllium	0.0127	0.00299	ng/m³ Air		0.0128			1.11	10	
Cadmium	ND	0.0692	ng/m³ Air		ND				10	U
Chromium	3.31	2.07	ng/m³ Air		3.16			4.63	10	
Cobalt	0.408	0.0407	ng/m³ Air		0.421			3.14	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 B4G3008 - ICP-MS Extraction										
Duplicate (B4G3008-DUP1) Continued			**Source: 4072929-13**		Prepared & Analyzed: 07/30/24					
Copper	37.8	2.46	ng/m³ Air		39.3			4.00	10	
Lead	0.798	0.200	ng/m³ Air		0.834			4.45	10	
Manganese	13.5	1.77	ng/m³ Air		13.8			2.24	10	
Molybdenum	2.24	0.335	ng/m³ Air		2.28			1.93	10	
Nickel	1.40	0.609	ng/m³ Air		1.31			6.16	10	
Selenium	0.167	0.00837	ng/m³ Air		0.157			6.54	10	
Thallium	0.00140	5.50E-4	ng/m³ Air		0.00142			1.75	10	
Vanadium	1.30	0.0494	ng/m³ Air		1.30			0.483	10	
Zinc	ND	71.8	ng/m³ Air		ND				10	U
Duplicate (B4G3008-DUP2)			**Source: 4072929-06**		Prepared: 07/30/24 Analyzed: 07/31/24					
Antimony	0.0878	0.0336	ng/m³ Air		0.0844			3.96	10	SL
Arsenic	2.01	0.00816	ng/m³ Air		2.01			0.0586	10	
Barium	8.78	0.932	ng/m³ Air		8.18			7.04	10	
Beryllium	0.0360	0.00279	ng/m³ Air		0.0355			1.50	10	
Cadmium	ND	0.0646	ng/m³ Air		ND				10	U
Chromium	7.94	1.93	ng/m³ Air		7.45			6.38	10	
Cobalt	1.65	0.0380	ng/m³ Air		1.59			4.15	10	
Copper	146	2.29	ng/m³ Air		143			2.39	10	
Lead	0.627	0.186	ng/m³ Air		0.608			3.00	10	
Manganese	38.9	1.65	ng/m³ Air		36.8			5.71	10	
Molybdenum	5.41	0.313	ng/m³ Air		5.30			2.11	10	
Nickel	4.62	0.568	ng/m³ Air		4.34			6.25	10	
Selenium	0.237	0.00781	ng/m³ Air		0.232			2.26	10	
Thallium	0.00189	5.13E-4	ng/m³ Air		0.00182			3.89	10	QB-04
Vanadium	4.59	0.0461	ng/m³ Air		4.35			5.31	10	
Zinc	ND	66.9	ng/m³ Air		ND				10	U
Duplicate (B4G3008-DUP3)			**Source: 4072929-21**		Prepared: 07/30/24 Analyzed: 07/31/24					
Antimony	0.111	0.0297	ng/m³ Air		0.111			0.0349	10	SL
Arsenic	0.776	0.00720	ng/m³ Air		0.780			0.541	10	
Barium	7.91	0.822	ng/m³ Air		7.97			0.796	10	
Beryllium	0.0179	0.00246	ng/m³ Air		0.0189			5.31	10	
Cadmium	ND	0.0570	ng/m³ Air		ND				10	U
Chromium	2.73	1.70	ng/m³ Air		2.75			0.759	10	
Cobalt	0.492	0.0335	ng/m³ Air		0.494			0.449	10	
Copper	31.7	2.02	ng/m³ Air		31.8			0.277	10	
Lead	1.51	0.164	ng/m³ Air		1.52			0.283	10	
Manganese	15.3	1.45	ng/m³ Air		15.6			1.48	10	
Molybdenum	2.12	0.276	ng/m³ Air		2.13			0.533	10	

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4G3008 - ICP-MS Extraction										
Duplicate (B4G3008-DUP3) Continued		**Source: 4072929-21**		Prepared: 07/30/24 Analyzed: 07/31/24						
Nickel	1.62	0.501	ng/m³ Air		1.63			0.589	10	
Selenium	0.287	0.00689	ng/m³ Air		0.291			1.51	10	
Thallium	0.00220	4.53E-4	ng/m³ Air		0.00228			3.25	10	
Vanadium	1.92	0.0407	ng/m³ Air		1.93			0.926	10	
Zinc	ND	59.0	ng/m³ Air		ND				10	U
Duplicate (B4G3008-DUP4)		**Source: 4072929-31**		Prepared: 07/30/24 Analyzed: 07/31/24						
Antimony	0.0498	0.0323	ng/m³ Air		0.0512			2.85	10	SL
Arsenic	0.292	0.00785	ng/m³ Air		0.295			0.995	10	
Barium	3.44	0.896	ng/m³ Air		3.47			0.783	10	
Beryllium	0.0319	0.00268	ng/m³ Air		0.0315			1.13	10	
Cadmium	ND	0.0621	ng/m³ Air		ND				10	U
Chromium	3.04	1.85	ng/m³ Air		3.10			1.92	10	
Cobalt	0.510	0.0365	ng/m³ Air		0.520			1.94	10	
Copper	45.6	2.20	ng/m³ Air		46.4			1.76	10	
Lead	0.721	0.179	ng/m³ Air		0.731			1.47	10	
Manganese	12.0	1.58	ng/m³ Air		12.2			1.72	10	
Molybdenum	3.30	0.301	ng/m³ Air		3.36			1.64	10	
Nickel	1.50	0.546	ng/m³ Air		1.52			1.73	10	
Selenium	0.153	0.00751	ng/m³ Air		0.156			2.17	10	
Thallium	9.04E-4	4.93E-4	ng/m³ Air		9.44E-4			4.41	10	QB-04
Vanadium	1.39	0.0443	ng/m³ Air		1.41			1.43	10	
Zinc	ND	64.3	ng/m³ Air		ND				10	U
Matrix Spike (B4G3008-MS1)		**Source: 4072929-13**		Prepared & Analyzed: 07/30/24						
Antimony	0.681	0.0361	ng/m³ Air	1.2923	0.0818	46.4	80-120			SL
Arsenic	2.81	0.00876	ng/m³ Air	2.5847	0.304	96.9	80-120			
Barium	30.9	1.00	ng/m³ Air	25.847	3.93	104	80-120			
Beryllium	1.23	0.00299	ng/m³ Air	1.2923	0.0128	93.8	80-120			
Cadmium	1.31	0.0692	ng/m³ Air	1.2923	ND	102	80-120			
Chromium	16.4	2.07	ng/m³ Air	12.923	3.16	102	80-120			
Cobalt	1.64	0.0407	ng/m³ Air	1.2923	0.421	94.6	80-120			
Copper	63.1	2.46	ng/m³ Air	25.847	39.3	92.0	80-120			
Lead	13.8	0.200	ng/m³ Air	12.923	0.834	101	80-120			
Manganese	21.3	1.77	ng/m³ Air	7.7540	13.8	97.2	80-120			
Molybdenum	3.43	0.335	ng/m³ Air	1.2923	2.28	88.8	80-120			
Nickel	3.93	0.609	ng/m³ Air	2.5847	1.31	101	80-120			
Selenium	2.67	0.00837	ng/m³ Air	2.5847	0.157	97.2	80-120			
Thallium	0.126	5.50E-4	ng/m³ Air	0.12923	0.00142	96.6	80-120			
Vanadium	3.90	0.0494	ng/m³ Air	2.5847	1.30	100	80-120			

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4G3008 - ICP-MS Extraction										
Matrix Spike (B4G3008-MS1) Continued Source: 4072929-13 Prepared & Analyzed: 07/30/24										
Zinc	101	71.8	ng/m³ Air	77.540	ND	131	80-120			
Matrix Spike (B4G3008-MS2) Source: 4072929-06 Prepared: 07/30/24 Analyzed: 07/31/24										
Antimony	0.608	0.0336	ng/m³ Air	1.2048	0.0844	43.4	80-120			SL
Arsenic	3.87	0.00816	ng/m³ Air	2.4096	2.01	77.4	80-120			QM-07
Barium	32.2	0.932	ng/m³ Air	24.096	8.18	99.7	80-120			
Beryllium	1.34	0.00279	ng/m³ Air	1.2048	0.0355	108	80-120			
Cadmium	1.20	0.0646	ng/m³ Air	1.2048	ND	99.6	80-120			
Chromium	19.1	1.93	ng/m³ Air	12.048	7.45	96.8	80-120			
Cobalt	2.74	0.0380	ng/m³ Air	1.2048	1.59	95.5	80-120			
Copper	162	2.29	ng/m³ Air	24.096	143	79.9	80-120			
Lead	12.4	0.186	ng/m³ Air	12.048	0.608	98.0	80-120			
Manganese	44.9	1.65	ng/m³ Air	7.2289	36.8	112	80-120			
Molybdenum	6.23	0.313	ng/m³ Air	1.2048	5.30	77.3	80-120			QM-4X
Nickel	6.79	0.568	ng/m³ Air	2.4096	4.34	102	80-120			
Selenium	2.46	0.00781	ng/m³ Air	2.4096	0.232	92.4	80-120			
Thallium	0.111	5.13E-4	ng/m³ Air	0.12048	0.00182	90.2	80-120			QB-04
Vanadium	6.67	0.0461	ng/m³ Air	2.4096	4.35	96.2	80-120			
Zinc	85.6	66.9	ng/m³ Air	72.289	ND	118	80-120			
Matrix Spike Dup (B4G3008-MSD1) Source: 4072929-13 Prepared & Analyzed: 07/30/24										
Antimony	0.693	0.0361	ng/m³ Air	1.2923	0.0818	47.3	80-120	1.76	20	SL
Arsenic	2.86	0.00876	ng/m³ Air	2.5847	0.304	99.1	80-120	1.95	20	
Barium	30.4	1.00	ng/m³ Air	25.847	3.93	103	80-120	1.58	20	
Beryllium	1.28	0.00299	ng/m³ Air	1.2923	0.0128	98.1	80-120	4.41	20	
Cadmium	1.36	0.0692	ng/m³ Air	1.2923	ND	105	80-120	3.24	20	
Chromium	16.7	2.07	ng/m³ Air	12.923	3.16	105	80-120	1.76	20	
Cobalt	1.72	0.0407	ng/m³ Air	1.2923	0.421	101	80-120	4.59	20	
Copper	64.9	2.46	ng/m³ Air	25.847	39.3	99.0	80-120	2.80	20	
Lead	14.3	0.200	ng/m³ Air	12.923	0.834	104	80-120	3.37	20	
Manganese	21.9	1.77	ng/m³ Air	7.7540	13.8	105	80-120	2.82	20	
Molybdenum	3.43	0.335	ng/m³ Air	1.2923	2.28	89.0	80-120	0.0590	20	
Nickel	3.95	0.609	ng/m³ Air	2.5847	1.31	102	80-120	0.380	20	
Selenium	2.66	0.00837	ng/m³ Air	2.5847	0.157	96.8	80-120	0.392	20	
Thallium	0.129	5.50E-4	ng/m³ Air	0.12923	0.00142	98.7	80-120	2.13	20	
Vanadium	3.96	0.0494	ng/m³ Air	2.5847	1.30	103	80-120	1.62	20	
Zinc	103	71.8	ng/m³ Air	77.540	ND	132	80-120	1.35	20	
Matrix Spike Dup (B4G3008-MSD2) Source: 4072929-06 Prepared: 07/30/24 Analyzed: 07/31/24										
Antimony	0.597	0.0336	ng/m³ Air	1.2048	0.0844	42.6	80-120	1.72	20	SL
Arsenic	3.83	0.00816	ng/m³ Air	2.4096	2.01	75.5	80-120	1.15	20	QM-07

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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: 08/06/24 15:14
SUBMITTED: 07/29/24
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 B4G3008 - ICP-MS Extraction										
Matrix Spike Dup (B4G3008-MSD2) Conti			**Source: 4072929-06**		Prepared: 07/30/24		Analyzed: 07/31/24			
Barium	32.6	0.932	ng/m³ Air	24.096	8.18	102	80-120	1.36	20	
Beryllium	1.22	0.00279	ng/m³ Air	1.2048	0.0355	98.0	80-120	9.49	20	
Cadmium	1.23	0.0646	ng/m³ Air	1.2048	ND	102	80-120	2.34	20	
Chromium	19.6	1.93	ng/m³ Air	12.048	7.45	101	80-120	2.61	20	
Cobalt	2.77	0.0380	ng/m³ Air	1.2048	1.59	98.6	80-120	1.34	20	
Copper	166	2.29	ng/m³ Air	24.096	143	96.5	80-120	2.43	20	
Lead	12.7	0.186	ng/m³ Air	12.048	0.608	101	80-120	2.51	20	
Manganese	45.2	1.65	ng/m³ Air	7.2289	36.8	117	80-120	0.810	20	
Molybdenum	6.45	0.313	ng/m³ Air	1.2048	5.30	95.4	80-120	3.45	20	
Nickel	6.93	0.568	ng/m³ Air	2.4096	4.34	107	80-120	1.97	20	
Selenium	2.49	0.00781	ng/m³ Air	2.4096	0.232	93.9	80-120	1.42	20	
Thallium	0.114	5.13E-4	ng/m³ Air	0.12048	0.00182	92.9	80-120	2.90	20	QB-04
Vanadium	6.84	0.0461	ng/m³ Air	2.4096	4.35	103	80-120	2.42	20	
Zinc	87.7	66.9	ng/m³ Air	72.289	ND	121	80-120	2.41	20	
Post Spike (B4G3008-PS1)			**Source: 4072929-13**		Prepared & Analyzed: 07/30/24					
Antimony	0.330	0.0361	ng/m³ Air	0.25847	0.0818	95.9	75-125			SL
Arsenic	1.49	0.00876	ng/m³ Air	1.2923	0.304	92.0	75-125			
Barium	6.31	1.00	ng/m³ Air	2.5847	3.93	92.1	75-125			
Beryllium	0.269	0.00299	ng/m³ Air	0.25847	0.0128	99.1	75-125			
Cadmium	0.147	0.0692	ng/m³ Air	0.12923	ND	114	75-125			
Chromium	4.35	2.07	ng/m³ Air	1.2923	3.16	91.9	75-125			
Cobalt	0.653	0.0407	ng/m³ Air	0.25847	0.421	89.4	75-125			
Copper	51.3	2.46	ng/m³ Air	12.923	39.3	93.1	75-125			
Lead	26.2	0.200	ng/m³ Air	25.847	0.834	98.3	75-125			
Manganese	15.9	1.77	ng/m³ Air	2.5847	13.8	83.4	75-125			
Molybdenum	3.42	0.335	ng/m³ Air	1.2923	2.28	87.8	75-125			
Nickel	3.81	0.609	ng/m³ Air	2.5847	1.31	96.5	75-125			
Selenium	1.39	0.00837	ng/m³ Air	1.2923	0.157	95.2	75-125			
Thallium	0.0637	5.50E-4	ng/m³ Air	6.4617E-2	0.00142	96.4	75-125			
Vanadium	2.53	0.0494	ng/m³ Air	1.2923	1.30	94.5	75-125			
Zinc	ND	71.8	ng/m³ Air	25.847	ND		75-125			U
Post Spike (B4G3008-PS2)			**Source: 4072929-06**		Prepared: 07/30/24		Analyzed: 07/31/24			
Antimony	0.320	0.0336	ng/m³ Air	0.24096	0.0844	97.9	75-125			SL
Arsenic	3.07	0.00816	ng/m³ Air	1.2048	2.01	87.7	75-125			
Barium	10.2	0.932	ng/m³ Air	2.4096	8.18	85.0	75-125			
Beryllium	0.330	0.00279	ng/m³ Air	0.24096	0.0355	122	75-125			
Cadmium	0.147	0.0646	ng/m³ Air	0.12048	ND	122	75-125			
Chromium	8.32	1.93	ng/m³ Air	1.2048	7.45	71.9	75-125			A-01a

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REPORTED: 08/06/24 15:14
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AQS SITE CODE:
SITE CODE: Lahaina fires

Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4G3008 - ICP-MS Extraction										
Post Spike (B4G3008-PS2) Continued		**Source: 4072929-06**		Prepared: 07/30/24 Analyzed: 07/31/24						
Cobalt	1.76	0.0380	ng/m³ Air	0.24096	1.59	71.1	75-125			A-01a
Copper	151	2.29	ng/m³ Air	12.048	143	67.8	75-125			A-01a
Lead	24.0	0.186	ng/m³ Air	24.096	0.608	97.1	75-125			
Manganese	37.7	1.65	ng/m³ Air	2.4096	36.8	39.4	75-125			A-01a
Molybdenum	6.23	0.313	ng/m³ Air	1.2048	5.30	77.5	75-125			
Nickel	6.53	0.568	ng/m³ Air	2.4096	4.34	90.8	75-125			
Selenium	1.34	0.00781	ng/m³ Air	1.2048	0.232	92.1	75-125			
Thallium	0.0563	5.13E-4	ng/m³ Air	6.0240E-2	0.00182	90.4	75-125			QB-04
Vanadium	5.33	0.0461	ng/m³ Air	1.2048	4.35	81.0	75-125			
Zinc	ND	66.9	ng/m³ Air	24.096	ND		75-125			U
Dilution Check (B4G3008-SRL1)		**Source: 4072929-13**		Prepared & Analyzed: 07/30/24						
Antimony	ND	0.180	ng/m³ Air		ND				10	SL, U
Arsenic	0.303	0.0438	ng/m³ Air		0.304			0.151	10	
Barium	ND	5.00	ng/m³ Air		ND				10	U
Beryllium	ND	0.0150	ng/m³ Air		ND				10	U
Cadmium	ND	0.346	ng/m³ Air		ND				10	U
Chromium	ND	10.3	ng/m³ Air		ND				10	U
Cobalt	0.428	0.204	ng/m³ Air		0.421			1.58	10	
Copper	40.1	12.3	ng/m³ Air		39.3			2.07	10	
Lead	ND	1.00	ng/m³ Air		ND				10	U
Manganese	14.0	8.83	ng/m³ Air		13.8			1.51	10	
Molybdenum	2.29	1.68	ng/m³ Air		2.28			0.482	10	
Nickel	ND	3.05	ng/m³ Air		ND				10	U
Selenium	0.148	0.0419	ng/m³ Air		0.157			5.69	10	
Thallium	0.00306	0.00275	ng/m³ Air		ND			73.0	10	
Vanadium	1.37	0.247	ng/m³ Air		1.30			4.54	10	
Zinc	ND	359	ng/m³ Air		ND				10	U
Dilution Check (B4G3008-SRL2)		**Source: 4072929-06**		Prepared: 07/30/24 Analyzed: 07/31/24						
Antimony	ND	0.168	ng/m³ Air		ND				10	SL, U
Arsenic	2.00	0.0408	ng/m³ Air		2.01			0.293	10	
Barium	8.09	4.66	ng/m³ Air		8.18			1.10	10	
Beryllium	0.0389	0.0139	ng/m³ Air		0.0355			9.11	10	
Cadmium	ND	0.323	ng/m³ Air		ND				10	U
Chromium	ND	9.63	ng/m³ Air		ND				10	U
Cobalt	1.59	0.190	ng/m³ Air		1.59			0.0780	10	
Copper	146	11.5	ng/m³ Air		143			2.46	10	
Lead	ND	0.932	ng/m³ Air		ND				10	U
Manganese	36.7	8.23	ng/m³ Air		36.8			0.193	10	

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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 B4G3008 - ICP-MS Extraction										
Dilution Check (B4G3008-SRL2) ContinueSource: 4072929-06 Prepared: 07/30/24 Analyzed: 07/31/24										
Molybdenum	5.39	1.56	ng/m³ Air		5.30			1.79	10	
Nickel	4.39	2.84	ng/m³ Air		4.34			1.15	10	
Selenium	0.232	0.0390	ng/m³ Air		0.232			0.146	10	
Thallium	0.00546	0.00257	ng/m³ Air		ND			100	10	QB-04
Vanadium	4.37	0.230	ng/m³ Air		4.35			0.414	10	
Zinc	ND	335	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-4X	The MS/MSD recovery exceeds criteria because the parent sample concentration is greater than 4x the spike concentration.
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.
FB-01	Analyte exceeds Field Blank criteria.
A-01a	Parent sample >4x spike amount
A-01	Parent sample >4x post spike amount
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 08/01/2024 and Shanna Vasser 08/01/2024
Laboratory: Eastern Research Group – Morrisville, NC
Collection date(s): 06/27/2024 and 07/11/2024 – 07/17/2027
Report No: 4072229

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

Discrepancies:

13. Field blank detections above the method detection limit were reported for arsenic, cobalt, copper, molybdenum, and vanadium in in MFL-FB01-071224-HM, for arsenic in MFL-FB01-071424-HM, and for arsenic in MFL-FB01-071624-HM.

Notes:

4. MFL-AM04-062724-HM was previously marked as void and not shipped due to low volume. It was later determined that there was sufficient volume for the lab to analyze and included with this shipment for analysis.
7. MFL-AM02-071124-HM was analyzed at a two-fold dilution for vanadium.