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

July 4 through July 10, 2024

A Community Air Monitoring and Sampling Plan (CAMSP) was prepared to address community air monitoring during debris removal operations in response to the 2023 Maui Wildfires. Air monitoring and sampling was performed from July 4 through July 10, 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), 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 conducted 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 4 through July 10 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.

Air quality monitoring for fine particulate matter, with a particle size diameter of 2.5 µm or less ($PM_{2.5}$) is not included in the weekly reports. This monitoring is being performed by the Department of Health or EPA at six locations in Lahaina and can be accessed at: https://fire.airnow.gov/.

Air sampling was conducted daily at all four community locations in accordance 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 the Site Screening Action Levels (SSAL) 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

There were 28 samples collected for asbestos fibers at each of the monitoring locations throughout this reporting period. All analytical results were below the SSAL of 0.003 fibers per cubic centimeter (fibers/cc) and less than the laboratory analytical sensitivity; results are presented in **Table 2**. Notably, the laboratory

commented “Numerous gypsum fibers present” on samples collected at the following monitoring stations:

- Leialii Hawaiian Homelands on July 7
- WW Pump Station #4 on July 6 and July 7
- Lahaina Intermediate School on July 5 and July 7
- Lahaina Boys & Girls Club on July 7

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. The presence of gypsum fibers found in the samples were not sufficient to obscure asbestos analysis; nor are they indicative of a health and safety concern. Occupational health exposure thresholds (National Institute for Occupational Safety and Health [NIOSH] and OSHA) 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. While total dust sampling has not been conducted, the size-discriminated particulate sampling (PM_{10}) at these locations indicates these thresholds are not being approached and are orders of magnitude less than occupational gypsum exposure criteria.

Low levels of metals were detected in ambient air samples at all community sampling locations. Although metals were detected, all concentrations were below the SSALs.

The laboratory data sheets for the asbestos and metal sample results are included in **Appendix 1.**

Meteorological Summary

Overall wind conditions during this weekly event averaged 1.1 miles per hour originating from a generally southeast direction. A summary of meteorological data is presented in **Table 3.**

Quality Control Summary

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

Air monitoring is conducted with Met One Instruments, Inc., environmental beta attenuation mass monitors (E-BAM) to allow for comparison to the 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 prior to monitoring according to the manufacturer’s procedures.

Asbestos samples are collected with Casella Vortex 3 or similar air sampling pump. Sampling flow rates are determined and documented by pre- and post- calibration of each sampling pump using a primary calibration standard. Calibration and sampling are conducted in accordance with Tetra Tech SOPs 064-2, “Calibration of Air Sampling Pump” and 073-3, “Air Quality Monitoring” and U.S. EPA ERT SOPs No. 2008, “General Air Monitoring and Sampling Guidelines” and 2015 “Asbestos Air Sampling," included in the CAMSP.

Metals samples are collected with Tisch Environmental High Volume Air Samplers, or equivalent. Air samples for metals are collected and analyzed in accordance with the following methods:

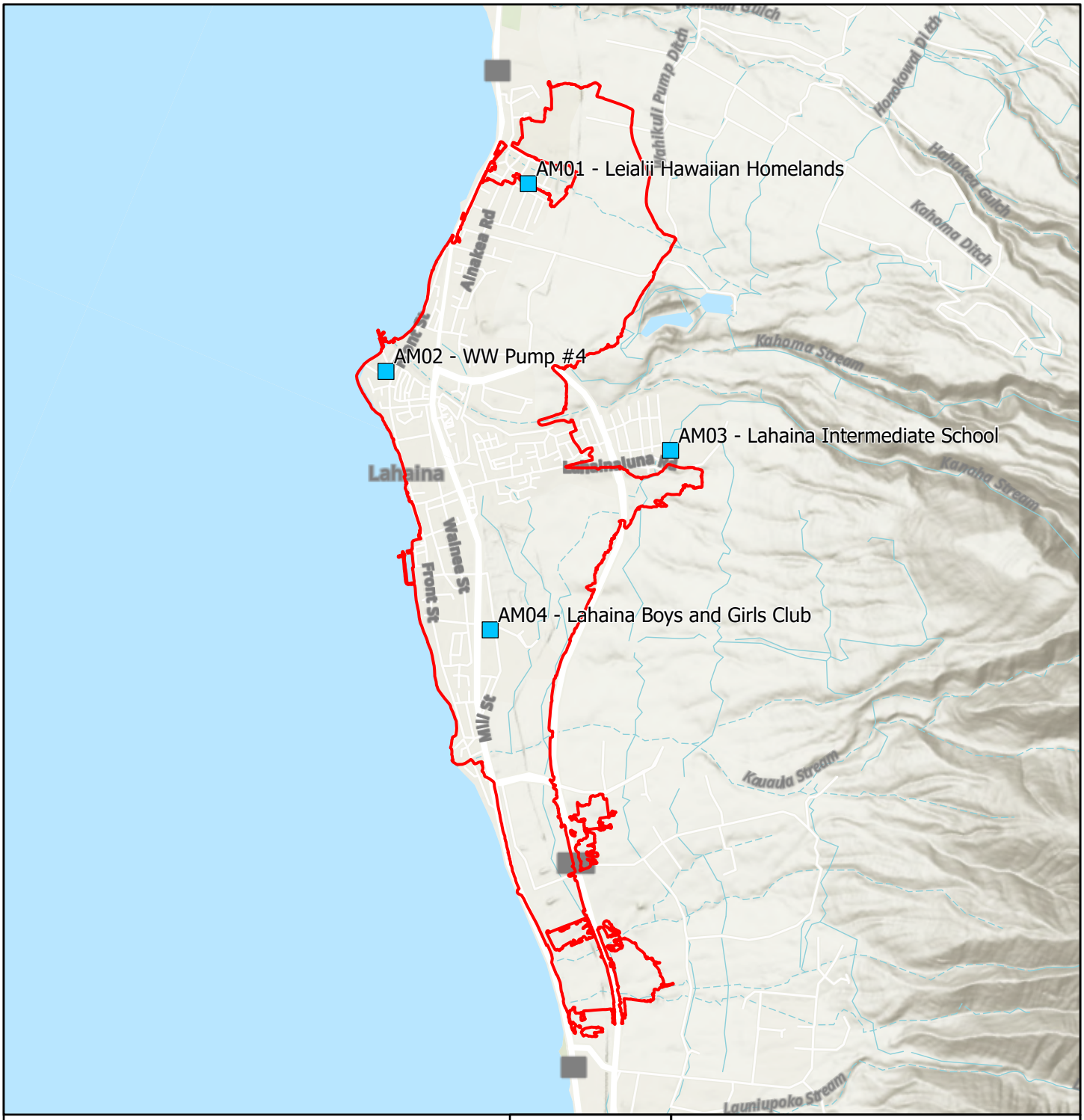
- U.S. EPA Compendium Method IO-2.1, Sampling of Ambient Air for Total Suspended Particulate Matter (SPM) and PM_{10} Using High Volume (HV) Sampler
- U.S. EPA Compendium Method IO-3.5: Compendium of Methods for the Determination of Inorganic Compounds in Ambient Air: Determination of Metals in Ambient Particulate Matter Using Inductively Coupled Plasma/Mass Spectrometry (ICP/MS). EPA/625/R-96/010a

- U.S. EPA 40 Code of Federal Regulations (CFR) Part 50, Method for the Determination of Lead in Total Suspended Particulate Matter.
- U.S. EPA 40 CFR Part 58, Appendix E: Probe and Monitoring Path Siting Criteria for Ambient Air Quality Monitoring
- Standard Operating Procedures for Lead Monitoring Using a 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 the off-site analytical laboratories, analytical data is maintained in an electronic database and compared to the SSALs. Level 1 data verification is completed on all analytical data and results are reviewed by an industrial hygienist.

Attachments



Air Sampling Locations

Lahaina Fire Perimeter

N

0 0.3 0.6
Miles

TETRA TECH

Figure 1
Air Sampling Locations

Hawaii DOH
2023 Lahaina Wildfire

Basemap: ESRI ArcGIS World Street Map

Table 1
State of Hawaii, Department of Health, Clean Air Branch
Particulate Monitoring Results for PM_{10}
Maui Wildfires, Lahaina
July 4 through July 10, 2024

Screening Level		TWA Results 150 ($\mu g/m^3$)
7/4/2024	Leialii Hawaiian Homelands (AM-01)	15
	WW Pump Station #4 (AM-02)	6.0
	Lahaina Intermediate School (AM-03)	8.5
	Lahaina Boys & Girls Club (AM-04)	13
7/5/2024	Leialii Hawaiian Homelands (AM-01)	22
	WW Pump Station #4 (AM-02)	7.3
	Lahaina Intermediate School (AM-03)	9.8
	Lahaina Boys & Girls Club (AM-04)	14
7/6/2024	Leialii Hawaiian Homelands (AM-01)	8.2
	WW Pump Station #4 (AM-02)	5.6
	Lahaina Intermediate School (AM-03)	16
	Lahaina Boys & Girls Club (AM-04)	13
7/7/2024	Leialii Hawaiian Homelands (AM-01)	9.9
	WW Pump Station #4 (AM-02)	5.7
	Lahaina Intermediate School (AM-03)	8.8
	Lahaina Boys & Girls Club (AM-04)	9.8
7/8/2024	Leialii Hawaiian Homelands (AM-01)	7.0
	WW Pump Station #4 (AM-02)	6.2
	Lahaina Intermediate School (AM-03)	9.0
	Lahaina Boys & Girls Club (AM-04)	13
7/9/2024	Leialii Hawaiian Homelands (AM-01)	12
	WW Pump Station #4 (AM-02)	7.2
	Lahaina Intermediate School (AM-03)	26
	Lahaina Boys & Girls Club (AM-04)	13
7/10/2024	Leialii Hawaiian Homelands (AM-01)	13
	WW Pump Station #4 (AM-02)	21
	Lahaina Intermediate School (AM-03)	9.1
	Lahaina Boys & Girls Club (AM-04)	22

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 4 through July 10, 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
7/4/2024	Leialii Hawaiian Homelands (AM-01)	<0.0024	0.0000618	0.000989	0.0128	0.0000584	ND	0.0118	0.00289	0.112	0.000922	0.0632	0.00479	0.00735	0.000258	0.00000298	0.00825	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.000126	0.000459	0.00391	0.0000107	ND	0.00207	0.000348	0.0352	0.00105	0.0105	0.00158	0.00128	0.000143	0.000000952	0.00130	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000751	0.000258	0.00370	0.0000334	ND	0.00278	0.000583	0.0647	0.000552	0.0156	0.00386	0.00158	0.000170	0.00000124	0.00171	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0024	0.0000934	0.000417	0.00365	0.0000125	ND	0.00251	0.000398	0.0304	0.000904	0.0134	0.00196	0.00148	0.000138	0.00000103	0.00131	ND
7/5/2024	Leialii Hawaiian Homelands (AM-01)	<0.0024	0.000155	0.00226	0.0949	0.0000706	ND	0.0149	0.00293	0.236	ND	0.0741	0.00515	0.00575	0.000384	ND	0.00855	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.000144	0.000536	0.0532	0.0000202	ND	0.00514	0.000699	0.0690	0.000280	0.0201	0.00212	0.00226	0.000209	ND	0.00246	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000509	0.000203	0.00602	0.0000243	ND	0.00309	0.000513	0.0506	0.000394	0.0131	0.00252	0.00167	0.000150	0.000000824	0.00137	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0024	0.0000977	0.000507	0.00658	0.0000177	ND	0.00332	0.000538	0.0399	0.000905	0.0177	0.00197	0.00153	0.000186	0.00000101	0.00153	ND
7/6/2024	Leialii Hawaiian Homelands (AM-01)	<0.0024	0.000126	0.00286	0.00889	0.0000329	ND	0.00831	0.00142	0.121	0.000780	0.0368	0.00529	0.00328	0.000230	0.00000209	0.00391	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.000130	0.000344	0.00470	0.0000142	ND	0.00257	0.000407	0.0439	0.000772	0.0126	0.00231	0.00127	0.000203	0.00000132	0.00136	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000436	0.000392	0.00535	0.0000764	ND	0.00516	0.00115	0.0492	0.000714	0.0300	0.00192	0.00265	0.000236	0.00000201	0.00294	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0024	0.0000828	0.000423	0.00390	0.0000144	ND	0.00312	0.000429	0.0411	0.000834	0.0145	0.00198	0.00132	0.000194	0.00000133	0.00130	ND
7/7/2024	Leialii Hawaiian Homelands (AM-01)	<0.0024	0.0000664	0.000831	0.00471	0.0000143	ND	0.00316	0.000533	0.135	0.000446	0.0146	0.00618	0.00149	0.000156	0.00000127	0.00164	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.000137	0.000516	0.00590	0.0000195	0.0000624	0.00255	0.000464	0.0450	0.00145	0.0152	0.00181	0.00145	0.000196	0.00000156	0.00164	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000386	0.000161	0.00247	0.0000218	ND	0.00315	0.000361	0.0458	0.000350	0.00908	0.00245	0.00153	0.000156	0.00000114	0.00102	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0024	0.0000624	0.000444	0.00326	0.0000151	0.000382	0.00321	0.000395	0.0355	0.000784	0.0132	0.00210	0.00130	0.000154	0.00000126	0.00110	ND
7/8/2024	Leialii Hawaiian Homelands (AM-01)	<0.0024	0.0000608	0.00148	0.00660	0.0000196	ND	0.00470	0.000842	0.160	0.000520	0.0237	0.00887	0.00209	0.000149	0.00000161	0.00232	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.0000779	0.000624	0.00397	0.0000159	ND	0.00305	0.000467	0.0463	0.00148	0.0138	0.00198	0.00148	0.000151	0.000000885	0.00146	ND
	Lahaina Intermediate School (AM-03)	<0.0024	ND	0.000207	0.00260	0.0000229	ND	0.00289	0.000423	0.0410	0.000621	0.0108	0.00213	0.00132	0.000119	0.000000795	0.00102	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0024	0.0000598	0.000497	0.00351	0.0000128	ND	0.00323	0.000462	0.0299	0.000822	0.0133	0.00150	0.00136	0.000133	0.000000835	0.00116	ND
7/9/2024	Leialii Hawaiian Homelands (AM-01)	<0.0024	0.000260	0.00837	0.00993	0.0000211	0.000116	0.00750	0.000899	0.162	0.000571	0.0238	0.00875	0.00253	0.000166	0.00000127	0.00251	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.0000866	0.000776	0.00808	0.0000347	ND	0.00600	0.00123	0.0589	0.00232	0.0342	0.00202	0.00369	0.000215	0.00000169	0.00372	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000526	0.000346	0.00402	0.0000345	ND	0.00409	0.000742	0.0678	0.000934	0.0186	0.00275	0.00218	0.000188	0.00000126	0.00190	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0024	0.000134	0.000759	0.00593	0.0000215	0.0000862	0.00425	0.000768	0.0329	0.00142	0.0242	0.00132	0.00230	0.000181	0.00000124	0.00204	ND
7/10/2024	Leialii Hawaiian Homelands (AM-01)	<0.0024	0.000163	0.00516	0.0143	0.0000684	0.0000985	0.0136	0.00329	0.109	0.000811	0.0764	0.00568	0.00698	0.000341	0.00000321	0.00862	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.0000779	0.00109	0.0138	0.0000790	ND	0.0146	0.00367	0.0586	0.00217	0.0853	0.00227	0.00984	0.000363	0.00000362	0.00978	ND
	Lahaina Intermediate School (AM-03)	<0.0027	ND	0.000232	0.00402	0.0000426	ND	0.00427	0.000747	0.0494	0.000570	0.0187	0.00218	0.00195	0.000186	0.00000143	0.00201	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0024	0.000105	0.00121	0.0106	0.0000606	ND	0.00759	0.00173	0.0365	0.00244	0.0618	0.00124	0.00480	0.000334	0.00000250	0.00416	ND
95% Upper Confidence Limit[2]		NA	0.000120	0.00160	0.0134	0.0000400	0.000533	0.00669	0.00136	0.0876	0.00118	0.0353	0.00385	0.00341	0.000230	0.00000180	0.00374	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 4 through July 10, 2024

Date	Station ID	Weather Station Name	Wind Speed (mph)	Wind Direction (angle)	Temperature (°F)	Rel Humidity (%)	Baro Pressure (mBar)
7/4/2024	AM-01	Leialii Hawaiian Homelands	1.4	ESE	82	56	759.5
7/4/2024	AM-02	WW Pump Station #4	1.2	SSE	81	63	761.4
7/4/2024	AM-03	Lahaina Intermediate School	1.2	ESE	79	62	752.2
7/4/2024	AM-04	Lahaina Boys & Girls Club	1.2	SSW	79	64	761.1
7/5/2024	AM-01	Leialii Hawaiian Homelands	1.1	SE	82	55	759.1
7/5/2024	AM-02	WW Pump Station #4	1.0	SSE	80	62	761.0
7/5/2024	AM-03	Lahaina Intermediate School	1.3	ESE	79	60	751.8
7/5/2024	AM-04	Lahaina Boys & Girls Club	1.0	SSW	79	62	760.7
7/6/2024	AM-01	Leialii Hawaiian Homelands	1.1	ESE	80	57	759.4
7/6/2024	AM-02	WW Pump Station #4	1.2	SE	79	62	761.4
7/6/2024	AM-03	Lahaina Intermediate School	1.1	ESE	78	61	752.2
7/6/2024	AM-04	Lahaina Boys & Girls Club	1.0	S	78	62	761.1
7/7/2024	AM-01	Leialii Hawaiian Homelands	1.1	SE	82	53	760.6
7/7/2024	AM-02	WW Pump Station #4	1.2	SE	80	60	762.6
7/7/2024	AM-03	Lahaina Intermediate School	1.4	ESE	79	57	753.3
7/7/2024	AM-04	Lahaina Boys & Girls Club	1.0	S	78	60	762.3
7/8/2024	AM-01	Leialii Hawaiian Homelands	1.3	SE	80	61	760.7
7/8/2024	AM-02	WW Pump Station #4	0.9	SSE	81	63	762.6
7/8/2024	AM-03	Lahaina Intermediate School	1.2	ESE	79	62	753.4
7/8/2024	AM-04	Lahaina Boys & Girls Club	1.0	S	80	62	762.3
7/9/2024	AM-01	Leialii Hawaiian Homelands	1.3	ESE	82	57	760.0
7/9/2024	AM-02	WW Pump Station #4	1.2	S	81	65	761.9
7/9/2024	AM-03	Lahaina Intermediate School	1.2	SE	80	61	752.7
7/9/2024	AM-04	Lahaina Boys & Girls Club	1.3	SSW	80	64	761.6
7/10/2024	AM-01	Leialii Hawaiian Homelands	2.5	ESE	81	58	759.8
7/10/2024	AM-02	WW Pump Station #4	2.1	E	82	59	761.6
7/10/2024	AM-03	Lahaina Intermediate School	2.3	E	81	57	752.3
7/10/2024	AM-04	Lahaina Boys & Girls Club	2.1	S	81	57	761.1

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:	042414170
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:	07/10/2024 10:00 AM
Analysis Date:	07/17/2024
Report Date:	07/18/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM01-070424-AB** **Sample Description: DK864463**

EMSL Sample Number:	042414170-0001		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7177.5
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0130
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**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**

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

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

Comment

Robyn Ray
Approved Signatory

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

EMSL Order ID: 042414170
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: 042414170-0001 **Customer Sample:** MFL-AM01-070424-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	I6	None Detected									
B1	E4	None Detected									
B1	C9	None Detected									
B2	B5	None Detected									
B2	D2	None Detected									

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

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

EMSL Order:	042414170
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:	07/10/2024 10:00 AM
Analysis Date:	07/17/2024
Report Date:	07/18/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-070424-AB**		**Sample Description:**	**DK864456**
EMSL Sample Number:	042414170-0002		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7154.9
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0130
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**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**

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

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

Comment

Robyn Ray
Approved Signatory

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

EMSL Order ID:	**042414170**
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: 042414170-0002 **Customer Sample:** MFL-AM02-070424-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	F4	None Detected									
B6	C7	None Detected									
B7	B3	None Detected									
B7	G6	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:	042414170
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:	07/10/2024 10:00 AM
Analysis Date:	07/17/2024
Report Date:	07/18/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-070424-AB**		**Sample Description:**	**DK864464**
EMSL Sample Number:	042414170-0003		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7123.4
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0130
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	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**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**

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

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

Comment

Robyn Ray
Approved Signatory

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

EMSL Order ID: 042414170
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: 042414170-0003 **Customer Sample:** MFL-AM03-070424-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	J6	None Detected									
C1	G8	None Detected									
C1	D5	None Detected									
C2	H3	None Detected									
C2	E7	None Detected									

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

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

EMSL Order:	042414170
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:	07/10/2024 10:00 AM
Analysis Date:	07/17/2024
Report Date:	07/18/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM04-070424-AB** **Sample Description: DK864470**

EMSL Sample Number:	042414170-0004		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7183.6
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0130
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	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**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**

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

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

Comment

Robyn Ray
Approved Signatory

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

EMSL Order ID: 042414170
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: 042414170-0004 **Customer Sample:** MFL-AM04-070424-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	J8	None Detected									
C5	F3	None Detected									
C5	D6	None Detected									
C6	A2	None Detected									
C6	G3	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:	042414170
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:	07/10/2024 10:00 AM
Analysis Date:	07/17/2024
Report Date:	07/18/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-070424-AB** **Sample Description:** **DK864472**

EMSL Sample Number:	042414170-0005		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0130
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	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**	**< 23.00**			
Total Amphibole	**ADX**	**0**	**0**	**< 23.00**			
Actinolite	ADX	0	0	< 23.00			
Amosite	ADX	0	0	< 23.00			
Anthophyllite	ADX	0	0	< 23.00			
Crocidolite	ADX	0	0	< 23.00			
Tremolite	ADX	0	0	< 23.00			
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.00**			
Other Minerals	-	0	0	< 23.00			
Total All Structures	**-**	**0**	**0**	**< 23.00**			

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

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	95 % Confidence Interval (F/cc) Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 23.00**			
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.00**			
Actinolite	ADX	0	0	< 23.00			
Amosite	ADX	0	0	< 23.00			
Anthophyllite	ADX	0	0	< 23.00			
Crocidolite	ADX	0	0	< 23.00			
Tremolite	ADX	0	0	< 23.00			
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.00**			
Other Minerals	-	0	0	< 23.00			
Total All Structures (PCMe)	**-**	**0**	**0**	**< 23.00**			

Comment

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: 042414170
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: 042414170-0005 **Customer Sample:** MFL-FB01-070424-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
D2	A4	None Detected									
D2	D7	None Detected									
D2	H4	None Detected									
D2	J7	None Detected									
D3	A5	None Detected									
D3	C8	None Detected									
D3	H5	None Detected									
D4	C3	None Detected									
D4	E8	None Detected									
D4	J6	None Detected									

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

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

EMSL Order:	042414170
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:	07/10/2024 10:00 AM
Analysis Date:	07/17/2024
Report Date:	07/18/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM01-070524-AB**		**Sample Description:**	**DK864466**
EMSL Sample Number:	042414170-0006		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7203.3
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):	0.0130
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**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**

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

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

Comment

Robyn Ray
Approved Signatory

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

EMSL Order ID: 042414170
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: 042414170-0006 **Customer Sample:** MFL-AM01-070524-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	B7	None Detected									
D5	F4	None Detected									
D5	J3	None Detected									
D6	I2	None Detected									
D6	H5	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:	042414170
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:	07/10/2024 10:00 AM
Analysis Date:	07/17/2024
Report Date:	07/18/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM02-070524-AB** **Sample Description: DK864477**

EMSL Sample Number:	042414170-0007		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7203.3
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):	0.0130
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	5			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Robyn Ray
Approved Signatory

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

EMSL Order ID: 042414170
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: 042414170-0007 **Customer Sample:** MFL-AM02-070524-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	A6	None Detected									
E1	E9	None Detected									
E1	I2	None Detected									
E2	G7	None Detected									
E2	A10	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:	042414170
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:	07/10/2024 10:00 AM
Analysis Date:	07/17/2024
Report Date:	07/18/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM03-070524-AB** **Sample Description:** **DK864457**

EMSL Sample Number:	042414170-0008		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7200.2
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):	0.0130
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**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**

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

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

Comment

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: 042414170
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: 042414170-0008 **Customer Sample:** MFL-AM03-070524-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	C2	None Detected									
E5	D8	None Detected									
E5	H7	None Detected									
E6	E7	None Detected									
E6	G3	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:	042414170
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:	07/10/2024 10:00 AM
Analysis Date:	07/17/2024
Report Date:	07/18/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM04-070524-AB** **Sample Description: DK864475**

EMSL Sample Number:	042414170-0009		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7248.6
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0130
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	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**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**

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

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

Comment

Robyn Ray
Approved Signatory

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

EMSL Order ID: 042414170
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: 042414170-0009 **Customer Sample:** MFL-AM04-070524-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
F2	J6	None Detected									
F2	E2	None Detected									
F2	B5	None Detected									
F3	D3	None Detected									
F3	I4	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:	042414170
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:	07/10/2024 10:00 AM
Analysis Date:	07/17/2024
Report Date:	07/18/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-070524-AB** **Sample Description:** **DK864460**

EMSL Sample Number:	042414170-0010		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0130
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	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**	**< 23.00**			
Total Amphibole	**ADX**	**0**	**0**	**< 23.00**			
Actinolite	ADX	0	0	< 23.00			
Amosite	ADX	0	0	< 23.00			
Anthophyllite	ADX	0	0	< 23.00			
Crocidolite	ADX	0	0	< 23.00			
Tremolite	ADX	0	0	< 23.00			
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.00**			
Other Minerals	-	0	0	< 23.00			
Total All Structures	**-**	**0**	**0**	**< 23.00**			

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

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	95 % Confidence Interval (F/cc) Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 23.00**			
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.00**			
Actinolite	ADX	0	0	< 23.00			
Amosite	ADX	0	0	< 23.00			
Anthophyllite	ADX	0	0	< 23.00			
Crocidolite	ADX	0	0	< 23.00			
Tremolite	ADX	0	0	< 23.00			
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.00**			
Other Minerals	-	0	0	< 23.00			
Total All Structures (PCMe)	**-**	**0**	**0**	**< 23.00**			

Comment

Approved Signatory

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

EMSL Order ID: 042414170
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: 042414170-0010 **Customer Sample:** MFL-FB01-070524-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
F5	J8	None Detected									
F5	G4	None Detected									
F5	D6	None Detected									
F5	B9	None Detected									
F6	I2	None Detected									
F6	F7	None Detected									
F6	A5	None Detected									
F7	C3	None Detected									
F7	C7	None Detected									
F7	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:	042414170
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:	07/10/2024 10:00 AM
Analysis Date:	07/17/2024
Report Date:	07/18/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM01-070624-AB** **Sample Description: DK864452**

EMSL Sample Number:	042414170-0011		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7277.9
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0130
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 %:	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**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**

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

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

Comment

Robyn Ray
Approved Signatory

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

EMSL Order ID: 042414170
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: 042414170-0011 **Customer Sample:** MFL-AM01-070624-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	I4	None Detected									
G1	E2	None Detected									
G1	B3	None Detected									
G2	H5	None Detected									
G2	C4	None Detected									

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

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

EMSL Order:	042414170
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:	07/10/2024 10:00 AM
Analysis Date:	07/18/2024
Report Date:	07/18/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-070624-AB**		**Sample Description:**	**DK864468**
EMSL Sample Number:	042414170-0012		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7186.9
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0130
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**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**

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

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

Comment

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: 042414170
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: 042414170-0012 **Customer Sample:** MFL-AM02-070624-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	A8	None Detected									
G5	E5	None Detected									
G5	H7	None Detected									
G6	B6	None Detected									
G6	H3	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:	042414170
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:	07/10/2024 10:00 AM
Analysis Date:	07/18/2024
Report Date:	07/18/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-070624-AB**		**Sample Description:**	**DK864474**
EMSL Sample Number:	042414170-0013		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7337.5
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0130
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	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**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**

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

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

Comment

Robyn Ray
Approved Signatory

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

EMSL Order ID: 042414170
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: 042414170-0013 **Customer Sample:** MFL-AM03-070624-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	B2	None Detected									
H1	D6	None Detected									
H1	I9	None Detected									
H2	C8	None Detected									
H2	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:	042414170
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:	07/10/2024 10:00 AM
Analysis Date:	07/18/2024
Report Date:	07/18/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM04-070624-AB** **Sample Description:** **DK864461**

EMSL Sample Number:	042414170-0014		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7088.7
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0130
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	N/A			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Robyn Ray
Approved Signatory

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

EMSL Order ID: 042414170
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: 042414170-0014 **Customer Sample:** MFL-AM04-070624-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	J9	None Detected									
H5	H5	None Detected									
H5	B7	None Detected									
H6	I6	None Detected									
H6	E3	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:	042414170
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:	07/10/2024 10:00 AM
Analysis Date:	07/18/2024
Report Date:	07/18/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-FB01-070624-AB**		**Sample Description:**	**DK864459**
EMSL Sample Number:	042414170-0015		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0130
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	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**	**< 23.00**			
Total Amphibole	**ADX**	**0**	**0**	**< 23.00**			
Actinolite	ADX	0	0	< 23.00			
Amosite	ADX	0	0	< 23.00			
Anthophyllite	ADX	0	0	< 23.00			
Crocidolite	ADX	0	0	< 23.00			
Tremolite	ADX	0	0	< 23.00			
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.00**			
Other Minerals	-	0	0	< 23.00			
Total All Structures	**-**	**0**	**0**	**< 23.00**			

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

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	95 % Confidence Interval (F/cc) Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 23.00**			
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.00**			
Actinolite	ADX	0	0	< 23.00			
Amosite	ADX	0	0	< 23.00			
Anthophyllite	ADX	0	0	< 23.00			
Crocidolite	ADX	0	0	< 23.00			
Tremolite	ADX	0	0	< 23.00			
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.00**			
Other Minerals	-	0	0	< 23.00			
Total All Structures (PCMe)	**-**	**0**	**0**	**< 23.00**			

Comment

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EMSL 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: 042414170
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: 042414170-0015 **Customer Sample:** MFL-FB01-070624-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
I1	J2	None Detected									
I1	H5	None Detected									
I1	E7	None Detected									
I1	C4	None Detected									
I2	I7	None Detected									
I2	F3	None Detected									
I2	C7	None Detected									
I3	H2	None Detected									
I3	H5	None Detected									
I3	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:	042414170
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:	07/10/2024 10:00 AM
Analysis Date:	07/18/2024
Report Date:	07/18/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM01-070724-AB**	**Sample Description:**	**DK864453**
EMSL Sample Number:	042414170-0016	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L) :	7101.8
Aspect ratio for fiber definition:	3:1	Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5	Grid Opening Area (mm^2):	0.0130
Chi^2 Test for Random Distribution on Filter:	N/A *(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD	Analyst:	G.Barry
Minimum Level of analysis (amphibole):	ADX		
Estimated Particulate Loading on Filter %:	5		
Target Analytical Sensitivity (Structures/cc):	0.001		
Analytical Sensitivity (Structures/cc):	**0.0008**	**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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: 042414170
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: 042414170-0016 **Customer Sample:** MFL-AM01-070724-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	B3	None Detected									
I5	E8	None Detected									
I5	J4	None Detected									
I6	C5	None Detected									
6	D8	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:	042414170
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:	07/10/2024 10:00 AM
Analysis Date:	07/18/2024
Report Date:	07/18/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-070724-AB**		**Sample Description:**	**DK864476**
EMSL Sample Number:	042414170-0017		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7123.5
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0130
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	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**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**

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

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

Comment

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: 042414170
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: 042414170-0017 **Customer Sample:** MFL-AM02-070724-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
J2	A7	None Detected									
J2	D3	None Detected									
J2	I4	None Detected									
J3	G3	None Detected									
J3	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:	042414170
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Fires - Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
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Report Date:	07/18/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-070724-AB**		**Sample Description:**	**DK864451**
EMSL Sample Number:	042414170-0018		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7133.8
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0130
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	5			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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: 042414170
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: 042414170-0018 **Customer Sample:** MFL-AM03-070724-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	I9	None Detected									
J5	H3	None Detected									
J5	C5	None Detected									
J6	B7	None Detected									
J6	I4	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:	042414170
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:	07/10/2024 10:00 AM
Analysis Date:	07/18/2024
Report Date:	07/18/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM04-070724-AB**		**Sample Description:**	**DK864522**
EMSL Sample Number:	042414170-0019		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7109.3
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):	0.0130
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**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**

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

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

Comment

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: 042414170
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: 042414170-0019 **Customer Sample:** MFL-AM04-070724-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	J5	None Detected									
K1	E7	None Detected									
K2	B3	None Detected									
K2	D7	None Detected									
K2	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:	042414170
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:	07/10/2024 10:00 AM
Analysis Date:	07/18/2024
Report Date:	07/18/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-070724-AB** **Sample Description: DK864503**

EMSL Sample Number:	042414170-0020		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0130
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	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**	**< 23.00**			
Total Amphibole	**ADX**	**0**	**0**	**< 23.00**			
Actinolite	ADX	0	0	< 23.00			
Amosite	ADX	0	0	< 23.00			
Anthophyllite	ADX	0	0	< 23.00			
Crocidolite	ADX	0	0	< 23.00			
Tremolite	ADX	0	0	< 23.00			
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.00**			
Other Minerals	-	0	0	< 23.00			
Total All Structures	**-**	**0**	**0**	**< 23.00**			

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

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	95 % Confidence Interval (F/cc) Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 23.00**			
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.00**			
Actinolite	ADX	0	0	< 23.00			
Amosite	ADX	0	0	< 23.00			
Anthophyllite	ADX	0	0	< 23.00			
Crocidolite	ADX	0	0	< 23.00			
Tremolite	ADX	0	0	< 23.00			
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.00**			
Other Minerals	-	0	0	< 23.00			
Total All Structures (PCMe)	**-**	**0**	**0**	**< 23.00**			

Comment

Approved Signatory

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

EMSL Order ID: 042414170
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: 042414170-0020 **Customer Sample:** MFL-FB01-070724-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
K5	I8	None Detected									
K5	G3	None Detected									
K5	D5	None Detected									
K5	A7	None Detected									
K6	H10	None Detected									
K6	H6	None Detected									
K6	C5	None Detected									
K7	C10	None Detected									
K7	D6	None Detected									
K7	I4	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
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EMSL Order:	042414170
Customer ID:	TTDC42
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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:	07/10/2024 09:00 AM
Analysis Date:	07/18/2024
Report Date:	07/18/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**Lab Blank**		**Sample Description:**	**Lab Blank**
EMSL Sample Number:	042414170-0021		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0130
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	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: 042414170
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: 042414170-0021 **Customer Sample:** Lab Blank

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
A1	A10	None Detected									
A1	B7	None Detected									
A1	E5	None Detected									
A1	H2	None Detected									
A2	B4	None Detected									
A2	F7	None Detected									
A2	J3	None Detected									
A3	I8	None Detected									
3	E3	None Detected									
A3	A5	None Detected									

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

OrderID: 042414170

#042414170

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL Order Number / Lab Use Only

~~#042414175~~ (8) 7/10/24

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

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

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

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

Project Information

Project Name/No:	Maui Fires - Lahaina	Purchase Order:	1207085
EMSL LIMS Project ID: (If applicable, EMSL will provide)		US State where samples collected:	MI
State of Connecticut (CT) must select project location:	☐ Commercial (Taxable) ☐ Residential (Non-Taxable)		
Sampled By Name:	E. Kenyon Sniderman	Sampled By Signature:	
No. of Samples in Shipment	20		

Turn-Around-Time (TAT)

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

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

Test Selection

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

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

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

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

Other Test (please specify)

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

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

*Please call with your project-specific requirements.

☐ 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-AM01-070424-AB	DK864463	7,177.536	07/04/24 1055
MFL-AM02-070424-AB	DK864456	7,154.916	07/04/24 1110
MFL-AM03-070424-AB	DK864464	7,123.392	07/04/24 1256
MFL-AM04-070424-AB	DK864470	7,183.584	07/04/24 1312
MFL-FB01-070424-AB	DK864472	0	07/04/24 1200
MFL-AM01-070524-AB	DK864466	7,203.263	07/05/24 1056
MFL-AM02-070524-AB	DK864477	7,203.263	07/05/24 1109
MFLAM03-070524-AB	DK864457	7,200.180	07/05/24 1257

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

All samples received acceptable for analysis.

Method of Shipment:	FedEx	Sample Condition Upon Receipt:	
Relinquished by:		Date/Time: 07/08/24 1100	Received by: FedEx
Date/Time	7/10/24 10A		
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.

RECEIVED EMSL CINNAMINSON, NJ 24 JUL 10 AM 10:15

Page 1 of 2

20

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL Order Number / Lab Use Only

#042414170

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-AM04-070524-AB	DK864475	7,248.641	07/05/24 1314
MFL-FB01-070524-AB	DK864460	0	07/05/24 1200
MFL-AM01-070624-AB	DK864452	7,277.904	07/06/24 1058
MFL-AM02-070624-AB	DK864468	7,186.896	07/06/24 1113
MFL-AM03-070624-AB	DK864474	7,337.461	07/06/24 1300
MFL-AM04-070624-AB	DK864461	7,088.688	07/06/24 1317
MFL-FB01-070624-AB	DK864459	0	07/06/24 1200
MFL-AM01-070724-AB	DK864453	7,101.767	07/07/24 1054
MFL-AM02-070724-AB	DK864476	7,123.545	07/07/24 1107
MFL-AM03-070724-AB	DK864451	7,133.821	07/07/24 1254
MFL-AM04-070724-AB	DK864522	7,109.314	07/07/24 1311
MFL-FB01-070724-AB	DK864503	0	07/07/24 1200

RECEIVED
EMSL
CINNAMINSON, NJ
24 JUL 10 AM 10: 15

Method of Shipment: FedEx		Sample Condition Upon Receipt:	
Relinquished by:	Date/Time: 07/08/24 1100	Received by: FedEx	Date/Time 7/10/24 10A
Relinquished by:	Date/Time:	Received by:	Date/Time

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

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

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

Stage 1 Data Verification Checklist – Asbestos

HDOH CAB – Ambient Community Air Sampling – Lahaina

Task Order No. 23141

Reviewed by:
Kierra Johnson 07/18/2024 and Shanna Vasser 7/19/2024
Laboratory: EMSL Analytical, Inc. – North Cinnaminson, NJ
Collection date(s): 07/04/2024 – 07/07/2024
Report No: 42414170

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

Discrepancies: None.

Notes: None.

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

EMSL Order:	042414558
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:	07/15/2024 09:00 AM
Analysis Date:	07/22/2024
Report Date:	07/22/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM01-070824-AB** **Sample Description:** **DK864450**

EMSL Sample Number:	042414558-0001		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7207.8
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	8			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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: 042414558
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: 042414558-0001 **Customer Sample:** MFL-AM01-070824-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	I5	None Detected									
A5	G3	None Detected									
A5	D2	None Detected									
A6	D9	None Detected									
A6	G7	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:	042414558
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:	07/15/2024 09:00 AM
Analysis Date:	07/22/2024
Report Date:	07/22/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-070824-AB**		**Sample Description:**	**DK864478**
EMSL Sample Number:	042414558-0002		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7279.8
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Robyn Ray
Approved Signatory

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

EMSL Order ID: 042414558
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: 042414558-0002 **Customer Sample:** MFL-AM02-070824-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
B2	J8	None Detected									
B2	G6	None Detected									
B2	B3	None Detected									
B3	D8	None Detected									
B3	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:	042414558
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:	07/15/2024 09:00 AM
Analysis Date:	07/22/2024
Report Date:	07/22/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-070824-AB**		**Sample Description:**	**DK864454**
EMSL Sample Number:	042414558-0003		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7325.7
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Robyn Ray
Approved Signatory

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

EMSL Order ID: 042414558
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: 042414558-0003 **Customer Sample:** MFL-AM03-070824-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	I5	None Detected									
B5	G7	None Detected									
B5	D5	None Detected									
B6	D7	None Detected									
B6	H5	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:	042414558
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:	07/15/2024 09:00 AM
Analysis Date:	07/22/2024
Report Date:	07/22/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM04-070824-AB**		**Sample Description:**	**DK864967**
EMSL Sample Number:	042414558-0004		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7147.6
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Robyn Ray
Approved Signatory

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

EMSL Order ID: 042414558
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: 042414558-0004 **Customer Sample:** MFL-AM04-070824-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	C6	None Detected									
C2	F9	None Detected									
C2	H5	None Detected									
C3	B2	None Detected									
C3	H4	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:	042414558
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:	07/15/2024 09:00 AM
Analysis Date:	07/22/2024
Report Date:	07/22/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-070824-AB** **Sample Description:** **DK864858**

EMSL Sample Number:	042414558-0005		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**N/A**		**Limit of Detection (Structures/cc):**	**N/A**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Robyn Ray
Approved Signatory

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

EMSL Order ID: 042414558
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: 042414558-0005 **Customer Sample:** MFL-FB01-070824-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	I10	None Detected									
C5	G6	None Detected									
C5	E3	None Detected									
C5	C7	None Detected									
C5	A5	None Detected									
C6	J5	None Detected									
C6	H3	None Detected									
C6	E3	None Detected									
C6	C3	None Detected									
C6	A5	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:	042414558
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:	07/15/2024 09:00 AM
Analysis Date:	07/22/2024
Report Date:	07/22/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM01-070924-AB** **Sample Description:** **DK864859**

EMSL Sample Number:	042414558-0006		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7255.7
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	5			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Robyn Ray
Approved Signatory

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

EMSL Order ID: 042414558
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: 042414558-0006 **Customer Sample:** MFL-AM01-070924-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	B5	None Detected									
D1	E3	None Detected									
D1	H6	None Detected									
D2	H1	None Detected									
D2	C4	None Detected									

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

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

EMSL Order:	042414558
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:	07/15/2024 09:00 AM
Analysis Date:	07/22/2024
Report Date:	07/22/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-070924-AB**	**Sample Description:**	**DK864843**
EMSL Sample Number:	042414558-0007	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L) :	7229.4
Aspect ratio for fiber definition:	3:1	Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5	Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A *(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD	Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX		
Estimated Particulate Loading on Filter %:	5		
Target Analytical Sensitivity (Structures/cc):	0.001		
Analytical Sensitivity (Structures/cc):	**0.0008**	**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Robyn Ray
Approved Signatory

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

EMSL Order ID: 042414558
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: 042414558-0007 **Customer Sample:** MFL-AM02-070924-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	C4	None Detected									
D5	E7	None Detected									
D5	H4	None Detected									
D6	B4	None Detected									
D6	G7	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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EMSL Order:	042414558
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:	07/15/2024 09:00 AM
Analysis Date:	07/22/2024
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ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-070924-AB**		**Sample Description:**	**DK864866**
EMSL Sample Number:	042414558-0008		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7374.4
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Robyn Ray
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: 042414558
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: 042414558-0008 **Customer Sample:** MFL-AM03-070924-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	G2	None Detected									
E1	E7	None Detected									
E1	C5	None Detected									
E2	C5	None Detected									
E2	E10	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:	042414558
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:	07/15/2024 09:00 AM
Analysis Date:	07/22/2024
Report Date:	07/22/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM04-070924-AB**		**Sample Description:**	**DK864862**
EMSL Sample Number:	042414558-0009		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7216.4
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	8			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Robyn Ray
Approved Signatory

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

EMSL Order ID: 042414558
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: 042414558-0009 **Customer Sample:** MFL-AM04-070924-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	A10	None Detected									
E5	D6	None Detected									
E5	G7	None Detected									
E6	G5	None Detected									
E6	C2	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:	042414558
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:	07/15/2024 09:00 AM
Analysis Date:	07/22/2024
Report Date:	07/22/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-070924-AB** **Sample Description: DK864976**

EMSL Sample Number:	042414558-0010		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.001			

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

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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: 042414558
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: 042414558-0010 **Customer Sample:** MFL-FB01-070924-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
F2	A2	None Detected									
F2	C4	None Detected									
F2	E5	None Detected									
F2	G6	None Detected									
F2	I7	None Detected									
F3	A4	None Detected									
F3	C5	None Detected									
F3	E8	None Detected									
F3	G4	None Detected									
F3	I7	None Detected									

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

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

EMSL Order:	042414558
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:	07/15/2024 09:00 AM
Analysis Date:	07/22/2024
Report Date:	07/22/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM01-071024-AB**		**Sample Description:**	**DK864892**
EMSL Sample Number:	042414558-0011		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7271.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	10			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Robyn Ray
Approved Signatory

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

EMSL Order ID: 042414558
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: 042414558-0011 **Customer Sample:** MFL-AM01-071024-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	I8	None Detected									
F5	G6	None Detected									
F5	C3	None Detected									
F8	B9	None Detected									
F8	G10	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:	042414558
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:	07/15/2024 09:00 AM
Analysis Date:	07/22/2024
Report Date:	07/22/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-071024-AB**		**Sample Description:**	**DK864961**
EMSL Sample Number:	042414558-0012		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7197.1
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	5			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Robyn Ray
Approved Signatory

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

EMSL Order ID: 042414558
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: 042414558-0012 **Customer Sample:** MFL-AM02-071024-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
G2	B9	None Detected									
G2	E8	None Detected									
G2	H10	None Detected									
G3	B9	None Detected									
G3	H6	None Detected									

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

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

EMSL Order:	042414558
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:	07/15/2024 09:00 AM
Analysis Date:	07/22/2024
Report Date:	07/22/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-071024-AB**		**Sample Description:**	**DK864844**
EMSL Sample Number:	042414558-0013		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	6997.7
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0009**		**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**	**< 46.72**	**< 0.0027**	**Not Applicable**	**0.0027**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0027**	**Not Applicable**	**0.0027**
Actinolite	ADX	0	0	< 46.72	< 0.0027	Not Applicable	0.0027
Amosite	ADX	0	0	< 46.72	< 0.0027	Not Applicable	0.0027
Anthophyllite	ADX	0	0	< 46.72	< 0.0027	Not Applicable	0.0027
Crocidolite	ADX	0	0	< 46.72	< 0.0027	Not Applicable	0.0027
Tremolite	ADX	0	0	< 46.72	< 0.0027	Not Applicable	0.0027
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0027**	**Not Applicable**	**0.0027**
Other Minerals	-	0	0	< 46.72	< 0.0027	Not Applicable	0.0027
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 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**	**< 46.72**	**< 0.0027**	**Not Applicable**	**0.0027**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0027**	**Not Applicable**	**0.0027**
Actinolite	ADX	0	0	< 46.72	< 0.0027	Not Applicable	0.0027
Amosite	ADX	0	0	< 46.72	< 0.0027	Not Applicable	0.0027
Anthophyllite	ADX	0	0	< 46.72	< 0.0027	Not Applicable	0.0027
Crocidolite	ADX	0	0	< 46.72	< 0.0027	Not Applicable	0.0027
Tremolite	ADX	0	0	< 46.72	< 0.0027	Not Applicable	0.0027
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0027**	**Not Applicable**	**0.0027**
Other Minerals	-	0	0	< 46.72	< 0.0027	Not Applicable	0.0027
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.72**	**< 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: 042414558
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: 042414558-0013 **Customer Sample:** MFL-AM03-071024-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	B4	None Detected									
G5	D8	None Detected									
G5	H10	None Detected									
G6	G3	None Detected									
G6	C4	None Detected									

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

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

EMSL Order:	042414558
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:	07/15/2024 09:00 AM
Analysis Date:	07/22/2024
Report Date:	07/22/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM04-071024-AB**		**Sample Description:**	**DK864848**
EMSL Sample Number:	042414558-0014		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7161.4
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	20			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Robyn Ray
Approved Signatory

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

EMSL Order ID: 042414558
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: 042414558-0014 **Customer Sample:** MFL-AM04-071024-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
H2	J4	None Detected									
H2	G5	None Detected									
H2	C1	None Detected									
H3	C5	None Detected									
H3	I8	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:	042414558
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:	07/15/2024 09:00 AM
Analysis Date:	07/22/2024
Report Date:	07/22/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-071024-AB** **Sample Description:** **DK864850**

EMSL Sample Number:	042414558-0015		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.001			

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

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Approved Signatory

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

EMSL Order ID: 042414558
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: 042414558-0015 **Customer Sample:** MFL-FB01-071024-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	J1	None Detected									
H5	H5	None Detected									
H5	F2	None Detected									
H5	D3	None Detected									
H5	B2	None Detected									
H6	A7	None Detected									
H6	C8	None Detected									
H6	E9	None Detected									
H6	G7	None Detected									
H6	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:	042414558
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:	07/15/2024 09:00 AM
Analysis Date:	07/22/2024
Report Date:	07/22/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**Lab Blank**		**Sample Description:**	**Lab Blank**
EMSL Sample Number:	042414558-0016		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**N/A**		**Limit of Detection (Structures/cc):**	**N/A**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Approved Signatory

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

EMSL Order ID: 042414558
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: 042414558-0016 **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	A8	None Detected									
A1	D4	None Detected									
A1	H3	None Detected									
A1	I6	None Detected									
A2	B5	None Detected									
A2	E7	None Detected									
A2	J3	None Detected									
A3	I8	None Detected									
A3	I4	None Detected									
A3	C5	None Detected									

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

OrderID: 042414558

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

EMSL Order Number / Lab Use Only

#042414558

RECEIVED
EMSL Analytical, Inc.
200 Route 130 North
Cinnaminson, NJ 08077
CINNAMINSON, N.J.
PHONE: (800) 220-3675
2024 JUL 15 A 9:52

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

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

Project Information

Project Name/No:	Maui Fires - Lahaina	Purchase Order:	1207085
EMSL LIMS Project ID: (If applicable, EMSL will provide)		US State where samples collected:	HI
State of Connecticut (CT) must select project location:	☐ Commercial (Taxable) ☐ Residential (Non-Taxable)		
Sampled By Name:	E. Kenyon 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-AM01-070824-AB	DK864450	7,207.776	07/08/24 1057
MFL-AM02-070824-AB	DK864478	7,279.757	07/08/24 1111
MFL-AM03-070824-AB	DK864454	7,325.712	07/08/24 1257
MFL-AM04-070824-AB	DK864967	7,147.566	07/08/24 1311
MFL-FB01-070824-AB	DK864858	0	07/08/24 1200
MFL-AM01-070924-AB	DK864859	7,255.728	07/09/24 1101
MFL-AM02-070924-AB	DK864843	7,229.353	07/09/24 1115
MFL-AM03-070924-AB	DK864866	7,374.352	07/09/24 1257

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

All samples received acceptable for analysis.

Method of Shipment:	FedEx	Sample Condition Upon Receipt:	
Relinquished by:		Date/Time: 07/11/24 1400	Received by: Chelsea FX
Date/Time: 7/15/24 9:00			
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.

15 ok

Page 1 of 2

OrderID: 042414558

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL Order Number / Lab Use Only

#042414558

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-AM04-070924-AB	DK864862	7,216.441	07/09/24 1313
MFL-FB01-070924-AB	DK864976	0	07/09/24 1200
MFL-AM01-071024-AB	DK864892	7,271.042	07/10/24 1059
MFL-AM02-071024-AB	DK864961	7,197.120	07/10/24 1116
MFL-AM03-071024-AB	DK864844	6,997.713	07/10/24 1300
MFL-AM04-071024-AB	DK864848	7,161.408	07/10/24 1315
MFL-FB01-071024-AB	DK864850	0	07/10/24 1200

Method of Shipment: FedEx		Sample Condition Upon Receipt:	
Relinquished by:	Date/Time: 07/11/24 400	Received by: Fx	Date/Time: 7/15/24 9[illegible]
Relinquished by:	Date/Time:	Received by:	Date/Time

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

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

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

Stage 1 Data Verification Checklist – Asbestos

HDOH CAB – Ambient Community Air Sampling – Lahaina

Task Order No. 23141

Reviewed by:
Kierra Johnson 07/22/2024 and Shanna Vasser 7/24/2024
Laboratory: EMSL Analytical, Inc. – North Cinnaminson, NJ
Collection date(s): 07/08/2024 – 07/10/2024
Report No: 42414558

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

Discrepancies: None.

Notes: None.

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

July 24, 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 07/15/24 16:56.

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: 07/24/24 14:27
SUBMITTED: 07/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

ANALYTICAL REPORT FOR SAMPLES

SampleName	LabNumber	Matrix	Sampled	Received
MFL-AM01-070424-HM	4071551-01	Air	07/04/24 23:59	07/15/24 16:56
MFL-AM02-070424-HM	4071551-02	Air	07/04/24 23:59	07/15/24 16:56
MFL-AM03-070424-HM	4071551-03	Air	07/04/24 23:59	07/15/24 16:56
MFL-AM04-070424-HM	4071551-04	Air	07/04/24 23:59	07/15/24 16:56
MFL-FB01-070424-HM	4071551-05	Air	07/04/24 00:00	07/15/24 16:56
MFL-AM01-070524-HM	4071551-06	Air	07/05/24 23:59	07/15/24 16:56
MFL-AM02-070524-HM	4071551-07	Air	07/05/24 23:59	07/15/24 16:56
MFL-AM03-070524-HM	4071551-08	Air	07/05/24 23:59	07/15/24 16:56
MFL-AM04-070524-HM	4071551-09	Air	07/05/24 23:59	07/15/24 16:56
MFL-AM01-070624-HM	4071551-10	Air	07/06/24 23:59	07/15/24 16:56
MFL-AM02-070624-HM	4071551-11	Air	07/06/24 23:59	07/15/24 16:56
MFL-AM03-070624-HM	4071551-12	Air	07/06/24 23:59	07/15/24 16:56
MFL-AM04-070624-HM	4071551-13	Air	07/06/24 23:59	07/15/24 16:56
MFL-FB01-070624-HM	4071551-14	Air	07/06/24 00:00	07/15/24 16:56
MFL-AM01-070724-HM	4071551-15	Air	07/07/24 23:59	07/15/24 16:56
MFL-AM02-070724-HM	4071551-16	Air	07/07/24 23:59	07/15/24 16:56
MFL-AM03-070724-HM	4071551-17	Air	07/07/24 23:59	07/15/24 16:56
MFL-AM04-070724-HM	4071551-18	Air	07/07/24 23:59	07/15/24 16:56
MFL-AM01-070824-HM	4071551-19	Air	07/08/24 23:59	07/15/24 16:56
MFL-AM02-070824-HM	4071551-20	Air	07/08/24 23:59	07/15/24 16:56
MFL-AM03-070824-HM	4071551-21	Air	07/08/24 23:59	07/15/24 16:56

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: 07/24/24 14:27
SUBMITTED: 07/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

MFL-AM04-070824-HM	4071551-22	Air	07/08/24 23:59	07/15/24 16:56
MFL-FB01-070824-HM	4071551-23	Air	07/08/24 00:00	07/15/24 16:56
MFL-AM01-070924-HM	4071551-24	Air	07/09/24 23:59	07/15/24 16:56
MFL-AM02-070924-HM	4071551-25	Air	07/09/24 23:59	07/15/24 16:56
MFL-AM03-070924-HM	4071551-26	Air	07/09/24 23:59	07/15/24 16:56
MFL-AM04-070924-HM	4071551-27	Air	07/09/24 23:59	07/15/24 16:56
MFL-AM01-071024-HM	4071551-28	Air	07/10/24 23:59	07/15/24 16:56
MFL-AM02-071024-HM	4071551-29	Air	07/10/24 23:59	07/15/24 16:56
MFL-AM03-071024-HM	4071551-30	Air	07/10/24 23:59	07/15/24 16:56
MFL-AM04-071024-HM	4071551-31	Air	07/10/24 23:59	07/15/24 16:56
MFL-FB01-071024-HM	4071551-32	Air	07/10/24 00:00	07/15/24 16:56
MFL-LB01-070424-HM	4071551-33	Air	07/04/24 00:00	07/15/24 16:56
MFL-LB01-070524-HM	4071551-34	Air	07/05/24 00:00	07/15/24 16:56
MFL-LB01-070624-HM	4071551-35	Air	07/06/24 00:00	07/15/24 16:56

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: 07/24/24 14:27
SUBMITTED: 07/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-070424-HM
Matrix: Air
Lab ID: 4071551-01
Sample Volume: 1879.261 m³
Filter ID:
Sampled: 07/04/24 23:59
Received: 07/15/24 16:56
Analysis Date: 07/18/24 22:37

Comments: Q8520607 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0618**	SL	**0.0334**
Arsenic	**7440-38-2**	**0.989**		**0.00811**
Barium	**7440-39-3**	**12.8**		**0.926**
Beryllium	**7440-41-7**	**0.0584**		**0.00277**
Cadmium	7440-43-9	0.0197	U	0.0642
Chromium	**7440-47-3**	**11.8**		**1.91**
Cobalt	**7440-48-4**	**2.89**		**0.0377**
Copper	**7440-50-8**	**112**		**2.28**
Lead	**7439-92-1**	**0.922**		**0.185**
Manganese	**7439-96-5**	**63.2**		**1.64**
Molybdenum	**7439-98-7**	**4.79**		**0.311**
Nickel	**7440-02-0**	**7.35**		**0.564**
Selenium	**7782-49-2**	**0.258**	LJ, QX	**0.00776**
Thallium	**7440-28-0**	**0.00298**		**5.10E-4**
Vanadium	**7440-62-2**	**8.25**		**0.0458**
Zinc	7440-66-6	17.4	U	66.5

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 07/24/24 14:27
SUBMITTED: 07/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-070424-HM
Matrix: Air
Lab ID: 4071551-02RE1
Sample Volume: 2015.157 m³
Filter ID:
Sampled: 07/04/24 23:59
Received: 07/15/24 16:56
Analysis Date: 07/19/24 19:24

Comments: Q8520606 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.126**		**0.0312**
Arsenic	**7440-38-2**	**0.459**		**0.00757**
Barium	**7440-39-3**	**3.91**		**0.864**
Beryllium	**7440-41-7**	**0.0107**		**0.00258**
Cadmium	7440-43-9	0.0164	U	0.0598
Chromium	**7440-47-3**	**2.07**		**1.78**
Cobalt	**7440-48-4**	**0.348**		**0.0352**
Copper	**7440-50-8**	**35.2**		**2.12**
Lead	**7439-92-1**	**1.05**		**0.173**
Manganese	**7439-96-5**	**10.5**		**1.53**
Molybdenum	**7439-98-7**	**1.58**		**0.290**
Nickel	**7440-02-0**	**1.28**		**0.526**
Selenium	**7782-49-2**	**0.143**		**0.00723**
Thallium	**7440-28-0**	**9.52E-4**		**4.76E-4**
Vanadium	**7440-62-2**	**1.30**		**0.0427**
Zinc	7440-66-6	15.6	U	62.0

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: 07/24/24 14:27
SUBMITTED: 07/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-070424-HM
Matrix: Air
Lab ID: 4071551-03
Sample Volume: 2005.916 m³
Filter ID:
Sampled: 07/04/24 23:59
Received: 07/15/24 16:56
Analysis Date: 07/18/24 22:57

Comments: Q8507546 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0751**	SL	**0.0313**
Arsenic	**7440-38-2**	**0.258**		**0.00760**
Barium	**7440-39-3**	**3.70**		**0.868**
Beryllium	**7440-41-7**	**0.0334**		**0.00260**
Cadmium	7440-43-9	0.00960	U	0.0601
Chromium	**7440-47-3**	**2.78**		**1.79**
Cobalt	**7440-48-4**	**0.583**		**0.0354**
Copper	**7440-50-8**	**64.7**		**2.13**
Lead	**7439-92-1**	**0.552**		**0.174**
Manganese	**7439-96-5**	**15.6**		**1.53**
Molybdenum	**7439-98-7**	**3.86**		**0.291**
Nickel	**7440-02-0**	**1.58**		**0.529**
Selenium	**7782-49-2**	**0.170**	LJ, QX	**0.00727**
Thallium	**7440-28-0**	**0.00124**		**4.78E-4**
Vanadium	**7440-62-2**	**1.71**		**0.0429**
Zinc	7440-66-6	9.48	U	62.3

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 07/24/24 14:27
SUBMITTED: 07/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-070424-HM
Matrix: Air
Lab ID: 4071551-04
Sample Volume: 1835.791 m³
Filter ID:
Sampled: 07/04/24 23:59
Received: 07/15/24 16:56
Analysis Date: 07/18/24 23:08

Comments: Q8507545 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0934**	SL	**0.0342**
Arsenic	**7440-38-2**	**0.417**		**0.00830**
Barium	**7440-39-3**	**3.65**		**0.948**
Beryllium	**7440-41-7**	**0.0125**		**0.00284**
Cadmium	7440-43-9	0.0119	U	0.0657
Chromium	**7440-47-3**	**2.51**		**1.96**
Cobalt	**7440-48-4**	**0.398**		**0.0386**
Copper	**7440-50-8**	**30.4**		**2.33**
Lead	**7439-92-1**	**0.904**		**0.190**
Manganese	**7439-96-5**	**13.4**		**1.68**
Molybdenum	**7439-98-7**	**1.96**		**0.318**
Nickel	**7440-02-0**	**1.48**		**0.578**
Selenium	**7782-49-2**	**0.138**	LJ, QX	**0.00794**
Thallium	**7440-28-0**	**0.00103**		**5.22E-4**
Vanadium	**7440-62-2**	**1.31**		**0.0469**
Zinc	7440-66-6	13.0	U	68.1

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 07/24/24 14:27
SUBMITTED: 07/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-FB01-070424-HM
Matrix: Air
Lab ID: 4071551-05
Sample Volume: 1879.261 m³
Filter ID:
Sampled: 07/04/24 00:00
Received: 07/15/24 16:56
Analysis Date: 07/18/24 23:18

Comments: Q9543370 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	7440-36-0	0.0149	U, SL	0.0334
Arsenic	7440-38-2	0.00442	U	0.00811
Barium	7440-39-3	0.418	U	0.926
Beryllium	7440-41-7	9.86E-4	U	0.00277
Cadmium	7440-43-9	0.00265	U	0.0642
Chromium	7440-47-3	1.29	U	1.91
Cobalt	7440-48-4	0.0293	U	0.0377
Copper	7440-50-8	0.389	U	2.28
Lead	7439-92-1	0.0348	U	0.185
Manganese	7439-96-5	0.217	U	1.64
Molybdenum	7439-98-7	0.174	U	0.311
Nickel	7440-02-0	0.304	U	0.564
Selenium	7782-49-2	ND	LJ, QX, U	0.00776
Thallium	7440-28-0	1.01E-4	U	5.10E-4
Vanadium	7440-62-2	0.0171	U	0.0458
Zinc	7440-66-6	4.44	U	66.5

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 07/24/24 14:27
SUBMITTED: 07/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-070524-HM
Matrix: Air
Lab ID: 4071551-06
Sample Volume: 1890.643 m³
Filter ID:
Sampled: 07/05/24 23:59
Received: 07/15/24 16:56
Analysis Date: 07/18/24 23:28

Comments: Q8507543 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Beryllium	**7440-41-7**	**0.0706**		**0.00275**
Cadmium	7440-43-9	0.0305	LL, QX, U	0.0638
Chromium	**7440-47-3**	**14.9**		**1.90**
Cobalt	**7440-48-4**	**2.93**		**0.0375**
Copper	**7440-50-8**	**236**		**2.26**
Lead	7439-92-1	0.0757	LL, QX, U	0.184
Manganese	**7439-96-5**	**74.1**		**1.63**
Nickel	**7440-02-0**	**5.75**		**0.561**
Thallium	7440-28-0	2.65E-4	LL, QX, U	5.07E-4
Vanadium	**7440-62-2**	**8.55**		**0.0455**
Zinc	7440-66-6	23.0	U	66.1

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: 07/24/24 14:27
SUBMITTED: 07/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-070524-HM
Matrix: Air
Lab ID: 4071551-06RE1
Sample Volume: 1890.643 m³
Filter ID:
Sampled: 07/05/24 23:59
Received: 07/15/24 16:56
Analysis Date: 07/19/24 19:34

Comments: Q8507543 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	7440-36-0	0.155	D	0.0664
Arsenic	7440-38-2	2.26	D	0.0161
Barium	7440-39-3	94.9	D	1.84
Molybdenum	7439-98-7	5.15	D	0.618
Selenium	7782-49-2	0.384	D	0.0154

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: 07/24/24 14:27
SUBMITTED: 07/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-070524-HM
Matrix: Air
Lab ID: 4071551-07
Sample Volume: 2047.508 m³
Filter ID:
Sampled: 07/05/24 23:59
Received: 07/15/24 16:56
Analysis Date: 07/18/24 23:49

Comments: Q8507542 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.144**	SL	**0.0307**
Arsenic	**7440-38-2**	**0.536**		**0.00745**
Barium	**7440-39-3**	**53.2**		**0.850**
Beryllium	**7440-41-7**	**0.0202**		**0.00254**
Cadmium	7440-43-9	0.0475	U	0.0589
Chromium	**7440-47-3**	**5.14**		**1.76**
Cobalt	**7440-48-4**	**0.699**		**0.0346**
Copper	**7440-50-8**	**69.0**		**2.09**
Lead	**7439-92-1**	**0.280**	LL, QX	**0.170**
Manganese	**7439-96-5**	**20.1**		**1.50**
Molybdenum	**7439-98-7**	**2.12**		**0.285**
Nickel	**7440-02-0**	**2.26**		**0.518**
Selenium	**7782-49-2**	**0.209**	LJ, QX	**0.00712**
Thallium	7440-28-0	4.34E-4	U, LL, QX	4.68E-4
Vanadium	**7440-62-2**	**2.46**		**0.0420**
Zinc	7440-66-6	18.6	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: 07/24/24 14:27
SUBMITTED: 07/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-070524-HM
Matrix: Air
Lab ID: 4071551-08
Sample Volume: 2070.675 m³
Filter ID:
Sampled: 07/05/24 23:59
Received: 07/15/24 16:56
Analysis Date: 07/19/24 00:00

Comments: Q8507541 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0509**	SL	**0.0303**
Arsenic	**7440-38-2**	**0.203**		**0.00736**
Barium	**7440-39-3**	**6.02**		**0.841**
Beryllium	**7440-41-7**	**0.0243**		**0.00251**
Cadmium	7440-43-9	0.00970	U	0.0582
Chromium	**7440-47-3**	**3.09**		**1.74**
Cobalt	**7440-48-4**	**0.513**		**0.0343**
Copper	**7440-50-8**	**50.6**		**2.07**
Lead	**7439-92-1**	**0.394**		**0.168**
Manganese	**7439-96-5**	**13.1**		**1.49**
Molybdenum	**7439-98-7**	**2.52**		**0.282**
Nickel	**7440-02-0**	**1.67**		**0.512**
Selenium	**7782-49-2**	**0.150**	LJ, QX	**0.00704**
Thallium	**7440-28-0**	**8.24E-4**		**4.63E-4**
Vanadium	**7440-62-2**	**1.37**		**0.0416**
Zinc	7440-66-6	12.0	U	60.3

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: 07/24/24 14:27
SUBMITTED: 07/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-070524-HM
Matrix: Air
Lab ID: 4071551-09
Sample Volume: 1777.771 m³
Filter ID:
Sampled: 07/05/24 23:59
Received: 07/15/24 16:56
Analysis Date: 07/19/24 00:10

Comments: Q9543369 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0977**	SL	**0.0353**
Arsenic	**7440-38-2**	**0.507**		**0.00858**
Barium	**7440-39-3**	**6.58**		**0.979**
Beryllium	**7440-41-7**	**0.0177**		**0.00293**
Cadmium	7440-43-9	0.0168	U	0.0678
Chromium	**7440-47-3**	**3.32**		**2.02**
Cobalt	**7440-48-4**	**0.538**		**0.0399**
Copper	**7440-50-8**	**39.9**		**2.41**
Lead	**7439-92-1**	**0.905**		**0.196**
Manganese	**7439-96-5**	**17.7**		**1.73**
Molybdenum	**7439-98-7**	**1.97**		**0.329**
Nickel	**7440-02-0**	**1.53**		**0.597**
Selenium	**7782-49-2**	**0.186**	LJ, QX	**0.00820**
Thallium	**7440-28-0**	**0.00101**		**5.39E-4**
Vanadium	**7440-62-2**	**1.53**		**0.0484**
Zinc	7440-66-6	20.9	U	70.3

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: 07/24/24 14:27
SUBMITTED: 07/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-070624-HM
Matrix: Air
Lab ID: 4071551-10
Sample Volume: 1937.099 m³
Filter ID:
Sampled: 07/06/24 23:59
Received: 07/15/24 16:56
Analysis Date: 07/19/24 00:41

Comments: Q9543368 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.126**	SL	**0.0324**
Arsenic	**7440-38-2**	**2.86**		**0.00787**
Barium	**7440-39-3**	**8.89**		**0.899**
Beryllium	**7440-41-7**	**0.0329**		**0.00269**
Cadmium	7440-43-9	0.0355	U	0.0622
Chromium	**7440-47-3**	**8.31**		**1.86**
Cobalt	**7440-48-4**	**1.42**		**0.0366**
Copper	**7440-50-8**	**121**		**2.21**
Lead	**7439-92-1**	**0.780**		**0.180**
Manganese	**7439-96-5**	**36.8**		**1.59**
Molybdenum	**7439-98-7**	**5.29**		**0.302**
Nickel	**7440-02-0**	**3.28**		**0.548**
Selenium	**7782-49-2**	**0.230**	LJ, QX	**0.00753**
Thallium	**7440-28-0**	**0.00209**		**4.95E-4**
Vanadium	**7440-62-2**	**3.91**		**0.0444**
Zinc	7440-66-6	20.1	U	64.5

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 07/24/24 14:27
SUBMITTED: 07/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-070624-HM
Matrix: Air
Lab ID: 4071551-11
Sample Volume: 2011.8 m³
Filter ID:
Sampled: 07/06/24 23:59
Received: 07/15/24 16:56
Analysis Date: 07/19/24 00:51

Comments: Q9543366 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.130**	SL	**0.0312**
Arsenic	**7440-38-2**	**0.344**		**0.00758**
Barium	**7440-39-3**	**4.70**		**0.865**
Beryllium	**7440-41-7**	**0.0142**		**0.00259**
Cadmium	7440-43-9	0.0160	U	0.0599
Chromium	**7440-47-3**	**2.57**		**1.79**
Cobalt	**7440-48-4**	**0.407**		**0.0353**
Copper	**7440-50-8**	**43.9**		**2.13**
Lead	**7439-92-1**	**0.772**		**0.173**
Manganese	**7439-96-5**	**12.6**		**1.53**
Molybdenum	**7439-98-7**	**2.31**		**0.290**
Nickel	**7440-02-0**	**1.27**		**0.527**
Selenium	**7782-49-2**	**0.203**	LJ, QX	**0.00725**
Thallium	**7440-28-0**	**0.00132**		**4.76E-4**
Vanadium	**7440-62-2**	**1.36**		**0.0428**
Zinc	7440-66-6	16.6	U	62.1

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

FILE #: 4205.00.003.001
REPORTED: 07/24/24 14:27
SUBMITTED: 07/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-070624-HM
Matrix: Air
Lab ID: 4071551-12
Sample Volume: 2030.061 m³
Filter ID:
Sampled: 07/06/24 23:59
Received: 07/15/24 16:56
Analysis Date: 07/19/24 01:02

Comments: Q9543364 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0436**	SL	**0.0309**
Arsenic	**7440-38-2**	**0.392**		**0.00751**
Barium	**7440-39-3**	**5.35**		**0.858**
Beryllium	**7440-41-7**	**0.0764**		**0.00256**
Cadmium	7440-43-9	0.0179	U	0.0594
Chromium	**7440-47-3**	**5.16**		**1.77**
Cobalt	**7440-48-4**	**1.15**		**0.0349**
Copper	**7440-50-8**	**49.2**		**2.11**
Lead	**7439-92-1**	**0.714**		**0.172**
Manganese	**7439-96-5**	**30.0**		**1.51**
Molybdenum	**7439-98-7**	**1.92**		**0.288**
Nickel	**7440-02-0**	**2.65**		**0.523**
Selenium	**7782-49-2**	**0.236**	LJ, QX	**0.00718**
Thallium	**7440-28-0**	**0.00201**		**4.72E-4**
Vanadium	**7440-62-2**	**2.94**		**0.0424**
Zinc	7440-66-6	15.5	U	61.6

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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: 07/24/24 14:27
SUBMITTED: 07/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-070624-HM
Matrix: Air
Lab ID: 4071551-13
Sample Volume: 1785.95 m³
Filter ID:
Sampled: 07/06/24 23:59
Received: 07/15/24 16:56
Analysis Date: 07/19/24 01:12

Comments: Q9543361 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0828**	SL	**0.0352**
Arsenic	**7440-38-2**	**0.423**		**0.00854**
Barium	**7440-39-3**	**3.90**		**0.975**
Beryllium	**7440-41-7**	**0.0144**		**0.00292**
Cadmium	7440-43-9	0.0183	U	0.0675
Chromium	**7440-47-3**	**3.12**		**2.01**
Cobalt	**7440-48-4**	**0.429**		**0.0397**
Copper	**7440-50-8**	**41.1**		**2.40**
Lead	**7439-92-1**	**0.834**		**0.195**
Manganese	**7439-96-5**	**14.5**		**1.72**
Molybdenum	**7439-98-7**	**1.98**		**0.327**
Nickel	**7440-02-0**	**1.32**		**0.594**
Selenium	**7782-49-2**	**0.194**	LJ, QX	**0.00816**
Thallium	**7440-28-0**	**0.00133**		**5.37E-4**
Vanadium	**7440-62-2**	**1.30**		**0.0482**
Zinc	7440-66-6	16.1	U	70.0

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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: 07/24/24 14:27
SUBMITTED: 07/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-FB01-070624-HM
Matrix: Air
Lab ID: 4071551-14
Sample Volume: 1937.099 m³
Filter ID:
Sampled: 07/06/24 00:00
Received: 07/15/24 16:56
Analysis Date: 07/19/24 01:23

Comments: Q9546654 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	7440-36-0	0.00659	U, SL	0.0324
Arsenic	7440-38-2	0.00579	U	0.00787
Barium	7440-39-3	0.609	U	0.899
Beryllium	7440-41-7	0.00113	U	0.00269
Cadmium	7440-43-9	0.00218	U	0.0622
Chromium	7440-47-3	1.55	U	1.86
Cobalt	7440-48-4	0.0248	U	0.0366
Copper	7440-50-8	0.343	U	2.21
Lead	7439-92-1	0.0562	U	0.180
Manganese	7439-96-5	0.170	U	1.59
Molybdenum	7439-98-7	0.245	U	0.302
Nickel	7440-02-0	0.270	U	0.548
Selenium	7782-49-2	0.00250	U, LJ, QX	0.00753
Thallium	7440-28-0	8.51E-5	U	4.95E-4
Vanadium	7440-62-2	0.0220	U	0.0444
Zinc	7440-66-6	4.54	U	64.5

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 07/24/24 14:27
SUBMITTED: 07/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-070724-HM
Matrix: Air
Lab ID: 4071551-15
Sample Volume: 1927.401 m³
Filter ID:
Sampled: 07/07/24 23:59
Received: 07/15/24 16:56
Analysis Date: 07/19/24 01:33

Comments: Q9543360 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0664**	SL	**0.0326**
Arsenic	**7440-38-2**	**0.831**		**0.00791**
Barium	**7440-39-3**	**4.71**		**0.903**
Beryllium	**7440-41-7**	**0.0143**		**0.00270**
Cadmium	7440-43-9	0.0165	U	0.0626
Chromium	**7440-47-3**	**3.16**		**1.87**
Cobalt	**7440-48-4**	**0.533**		**0.0368**
Copper	**7440-50-8**	**135**		**2.22**
Lead	**7439-92-1**	**0.446**		**0.181**
Manganese	**7439-96-5**	**14.6**		**1.60**
Molybdenum	**7439-98-7**	**6.18**		**0.303**
Nickel	**7440-02-0**	**1.49**		**0.550**
Selenium	**7782-49-2**	**0.156**	LJ, QX	**0.00756**
Thallium	**7440-28-0**	**0.00127**		**4.97E-4**
Vanadium	**7440-62-2**	**1.64**		**0.0447**
Zinc	7440-66-6	11.9	U	64.8

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: 07/24/24 14:27
SUBMITTED: 07/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-070724-HM
Matrix: Air
Lab ID: 4071551-16
Sample Volume: 2017.377 m³
Filter ID:
Sampled: 07/07/24 23:59
Received: 07/15/24 16:56
Analysis Date: 07/18/24 19:09

Comments: Q9543359 - MS/MSD - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.137**	SL	**0.0311**
Arsenic	**7440-38-2**	**0.516**		**0.00756**
Barium	**7440-39-3**	**5.90**		**0.863**
Beryllium	**7440-41-7**	**0.0195**		**0.00258**
Cadmium	**7440-43-9**	**0.0624**		**0.0598**
Chromium	**7440-47-3**	**2.55**		**1.78**
Cobalt	**7440-48-4**	**0.464**		**0.0352**
Copper	**7440-50-8**	**45.0**		**2.12**
Lead	**7439-92-1**	**1.45**		**0.173**
Manganese	**7439-96-5**	**15.2**		**1.52**
Molybdenum	**7439-98-7**	**1.81**		**0.290**
Nickel	**7440-02-0**	**1.45**		**0.526**
Selenium	**7782-49-2**	**0.196**	LJ, QX	**0.00723**
Thallium	**7440-28-0**	**0.00156**		**4.75E-4**
Vanadium	**7440-62-2**	**1.64**		**0.0427**
Zinc	7440-66-6	19.1	U	61.9

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: 07/24/24 14:27
SUBMITTED: 07/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-070724-HM
Matrix: Air
Lab ID: 4071551-17
Sample Volume: 2039.692 m³
Filter ID:
Sampled: 07/07/24 23:59
Received: 07/15/24 16:56
Analysis Date: 07/19/24 01:43

Comments: Q9543358 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0386**	SL	**0.0308**
Arsenic	**7440-38-2**	**0.161**		**0.00747**
Barium	**7440-39-3**	**2.47**		**0.854**
Beryllium	**7440-41-7**	**0.0218**		**0.00255**
Cadmium	7440-43-9	0.0151	U	0.0591
Chromium	**7440-47-3**	**3.15**		**1.76**
Cobalt	**7440-48-4**	**0.361**		**0.0348**
Copper	**7440-50-8**	**45.8**		**2.10**
Lead	**7439-92-1**	**0.350**		**0.171**
Manganese	**7439-96-5**	**9.08**		**1.51**
Molybdenum	**7439-98-7**	**2.45**		**0.286**
Nickel	**7440-02-0**	**1.53**		**0.520**
Selenium	**7782-49-2**	**0.156**	LJ, QX	**0.00715**
Thallium	**7440-28-0**	**0.00114**		**4.70E-4**
Vanadium	**7440-62-2**	**1.02**		**0.0422**
Zinc	7440-66-6	18.4	U	61.3

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 07/24/24 14:27
SUBMITTED: 07/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-070724-HM
Matrix: Air
Lab ID: 4071551-18
Sample Volume: 1790.514 m³
Filter ID:
Sampled: 07/07/24 23:59
Received: 07/15/24 16:56
Analysis Date: 07/19/24 01:54

Comments: Q9546655 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0624**	SL	**0.0351**
Arsenic	**7440-38-2**	**0.444**		**0.00851**
Barium	**7440-39-3**	**3.26**		**0.972**
Beryllium	**7440-41-7**	**0.0151**		**0.00291**
Cadmium	**7440-43-9**	**0.382**		**0.0673**
Chromium	**7440-47-3**	**3.21**		**2.01**
Cobalt	**7440-48-4**	**0.395**		**0.0396**
Copper	**7440-50-8**	**35.5**		**2.39**
Lead	**7439-92-1**	**0.784**		**0.194**
Manganese	**7439-96-5**	**13.2**		**1.72**
Molybdenum	**7439-98-7**	**2.10**		**0.326**
Nickel	**7440-02-0**	**1.30**		**0.592**
Selenium	**7782-49-2**	**0.154**	LJ, QX	**0.00814**
Thallium	**7440-28-0**	**0.00126**		**5.35E-4**
Vanadium	**7440-62-2**	**1.10**		**0.0481**
Zinc	7440-66-6	16.3	U	69.8

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: 07/24/24 14:27
SUBMITTED: 07/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-070824-HM
Matrix: Air
Lab ID: 4071551-19
Sample Volume: 1878.478 m³
Filter ID:
Sampled: 07/08/24 23:59
Received: 07/15/24 16:56
Analysis Date: 07/19/24 02:04

Comments: Q9546670 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0608**	SL	**0.0334**
Arsenic	**7440-38-2**	**1.48**		**0.00812**
Barium	**7440-39-3**	**6.60**		**0.927**
Beryllium	**7440-41-7**	**0.0196**		**0.00277**
Cadmium	7440-43-9	0.0237	U	0.0642
Chromium	**7440-47-3**	**4.70**		**1.91**
Cobalt	**7440-48-4**	**0.842**		**0.0378**
Copper	**7440-50-8**	**160**		**2.28**
Lead	**7439-92-1**	**0.520**		**0.185**
Manganese	**7439-96-5**	**23.7**		**1.64**
Molybdenum	**7439-98-7**	**8.87**		**0.311**
Nickel	**7440-02-0**	**2.09**		**0.565**
Selenium	**7782-49-2**	**0.149**	LJ, QX	**0.00776**
Thallium	**7440-28-0**	**0.00161**		**5.10E-4**
Vanadium	**7440-62-2**	**2.32**		**0.0458**
Zinc	7440-66-6	13.4	U	66.5

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 07/24/24 14:27
SUBMITTED: 07/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-070824-HM
Matrix: Air
Lab ID: 4071551-20
Sample Volume: 2048.363 m³
Filter ID:
Sampled: 07/08/24 23:59
Received: 07/15/24 16:56
Analysis Date: 07/19/24 02:14

Comments: Q9546669 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0779**	SL	**0.0307**
Arsenic	**7440-38-2**	**0.624**		**0.00744**
Barium	**7440-39-3**	**3.97**		**0.850**
Beryllium	**7440-41-7**	**0.0159**		**0.00254**
Cadmium	7440-43-9	0.0273	U	0.0589
Chromium	**7440-47-3**	**3.05**		**1.76**
Cobalt	**7440-48-4**	**0.467**		**0.0346**
Copper	**7440-50-8**	**46.3**		**2.09**
Lead	**7439-92-1**	**1.48**		**0.170**
Manganese	**7439-96-5**	**13.8**		**1.50**
Molybdenum	**7439-98-7**	**1.98**		**0.285**
Nickel	**7440-02-0**	**1.48**		**0.518**
Selenium	**7782-49-2**	**0.151**	LJ, QX	**0.00712**
Thallium	**7440-28-0**	**8.85E-4**		**4.68E-4**
Vanadium	**7440-62-2**	**1.46**		**0.0420**
Zinc	7440-66-6	16.1	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: 07/24/24 14:27
SUBMITTED: 07/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-070824-HM
Matrix: Air
Lab ID: 4071551-21
Sample Volume: 1982.637 m³
Filter ID:
Sampled: 07/08/24 23:59
Received: 07/15/24 16:56
Analysis Date: 07/18/24 21:14

Comments: Q9546666 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	7440-36-0	0.0313	SL, U	0.0317
Arsenic	**7440-38-2**	**0.207**		**0.00769**
Barium	**7440-39-3**	**2.60**		**0.878**
Beryllium	**7440-41-7**	**0.0229**		**0.00263**
Cadmium	7440-43-9	0.00935	U	0.0608
Chromium	**7440-47-3**	**2.89**		**1.81**
Cobalt	**7440-48-4**	**0.423**		**0.0358**
Copper	**7440-50-8**	**41.0**		**2.16**
Lead	**7439-92-1**	**0.621**		**0.176**
Manganese	**7439-96-5**	**10.8**		**1.55**
Molybdenum	**7439-98-7**	**2.13**		**0.295**
Nickel	**7440-02-0**	**1.32**		**0.535**
Selenium	**7782-49-2**	**0.119**	LJ, QX	**0.00735**
Thallium	**7440-28-0**	**7.95E-4**		**4.83E-4**
Vanadium	**7440-62-2**	**1.02**		**0.0434**
Zinc	7440-66-6	12.9	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: 07/24/24 14:27
SUBMITTED: 07/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-070824-HM
Matrix: Air
Lab ID: 4071551-22
Sample Volume: 1827.391 m³
Filter ID:
Sampled: 07/08/24 23:59
Received: 07/15/24 16:56
Analysis Date: 07/19/24 02:46

Comments: Q9546663 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0598**	SL	**0.0344**
Arsenic	**7440-38-2**	**0.497**		**0.00834**
Barium	**7440-39-3**	**3.51**		**0.953**
Beryllium	**7440-41-7**	**0.0128**		**0.00285**
Cadmium	7440-43-9	0.0140	U	0.0660
Chromium	**7440-47-3**	**3.23**		**1.97**
Cobalt	**7440-48-4**	**0.462**		**0.0388**
Copper	**7440-50-8**	**29.9**		**2.34**
Lead	**7439-92-1**	**0.822**		**0.191**
Manganese	**7439-96-5**	**13.3**		**1.68**
Molybdenum	**7439-98-7**	**1.50**		**0.320**
Nickel	**7440-02-0**	**1.36**		**0.581**
Selenium	**7782-49-2**	**0.133**	LJ, QX	**0.00798**
Thallium	**7440-28-0**	**8.35E-4**		**5.24E-4**
Vanadium	**7440-62-2**	**1.16**		**0.0471**
Zinc	7440-66-6	15.2	U	68.4

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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: 07/24/24 14:27
SUBMITTED: 07/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-FB01-070824-HM
Matrix: Air
Lab ID: 4071551-23
Sample Volume: 1878.478 m³
Filter ID:
Sampled: 07/08/24 00:00
Received: 07/15/24 16:56
Analysis Date: 07/19/24 02:56

Comments: Q9546659 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	7440-36-0	0.00654	SL, U	0.0334
Arsenic	7440-38-2	0.00493	U	0.00812
Barium	7440-39-3	0.579	U	0.927
Beryllium	7440-41-7	9.88E-4	U	0.00277
Cadmium	7440-43-9	0.00216	U	0.0642
Chromium	7440-47-3	1.49	U	1.91
Cobalt	7440-48-4	0.0248	U	0.0378
Copper	7440-50-8	0.336	U	2.28
Lead	7439-92-1	0.0537	U	0.185
Manganese	7439-96-5	0.210	U	1.64
Molybdenum	7439-98-7	0.242	U	0.311
Nickel	7440-02-0	0.288	U	0.565
Selenium	7782-49-2	8.21E-4	LJ, QX, U	0.00776
Thallium	7440-28-0	1.45E-4	U	5.10E-4
Vanadium	7440-62-2	0.00601	U	0.0458
Zinc	7440-66-6	5.87	U	66.5

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

FILE #: 4205.00.003.001
REPORTED: 07/24/24 14:27
SUBMITTED: 07/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-070924-HM
Matrix: Air
Lab ID: 4071551-24
Sample Volume: 1896.974 m³
Filter ID:
Sampled: 07/09/24 23:59
Received: 07/15/24 16:56
Analysis Date: 07/19/24 03:06

Comments: Q9546657 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.260**	SL	**0.0331**
Arsenic	**7440-38-2**	**8.37**		**0.00804**
Barium	**7440-39-3**	**9.93**		**0.918**
Beryllium	**7440-41-7**	**0.0211**		**0.00274**
Cadmium	**7440-43-9**	**0.116**		**0.0636**
Chromium	**7440-47-3**	**7.50**		**1.90**
Cobalt	**7440-48-4**	**0.899**		**0.0374**
Copper	**7440-50-8**	**162**		**2.26**
Lead	**7439-92-1**	**0.571**		**0.184**
Manganese	**7439-96-5**	**23.8**		**1.62**
Molybdenum	**7439-98-7**	**8.75**		**0.308**
Nickel	**7440-02-0**	**2.53**		**0.559**
Selenium	**7782-49-2**	**0.166**	LJ, QX	**0.00768**
Thallium	**7440-28-0**	**0.00127**		**5.05E-4**
Vanadium	**7440-62-2**	**2.51**		**0.0454**
Zinc	7440-66-6	23.6	U	65.9

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

FILE #: 4205.00.003.001
REPORTED: 07/24/24 14:27
SUBMITTED: 07/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-070924-HM
Matrix: Air
Lab ID: 4071551-25
Sample Volume: 2030.081 m³
Filter ID:
Sampled: 07/09/24 23:59
Received: 07/15/24 16:56
Analysis Date: 07/19/24 03:17

Comments: Q9546656 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0866**	SL	**0.0309**
Arsenic	**7440-38-2**	**0.776**		**0.00751**
Barium	**7440-39-3**	**8.08**		**0.858**
Beryllium	**7440-41-7**	**0.0347**		**0.00256**
Cadmium	7440-43-9	0.0269	U	0.0594
Chromium	**7440-47-3**	**6.00**		**1.77**
Cobalt	**7440-48-4**	**1.23**		**0.0349**
Copper	**7440-50-8**	**58.9**		**2.11**
Lead	**7439-92-1**	**2.32**		**0.172**
Manganese	**7439-96-5**	**34.2**		**1.51**
Molybdenum	**7439-98-7**	**2.02**		**0.288**
Nickel	**7440-02-0**	**3.69**		**0.523**
Selenium	**7782-49-2**	**0.215**	LJ, QX	**0.00718**
Thallium	**7440-28-0**	**0.00169**		**4.72E-4**
Vanadium	**7440-62-2**	**3.72**		**0.0424**
Zinc	7440-66-6	27.7	U	61.6

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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: 07/24/24 14:27
SUBMITTED: 07/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-070924-HM
Matrix: Air
Lab ID: 4071551-26
Sample Volume: 1869.644 m³
Filter ID:
Sampled: 07/09/24 23:59
Received: 07/15/24 16:56
Analysis Date: 07/19/24 03:27

Comments: Q9546638 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0526**	SL	**0.0336**
Arsenic	**7440-38-2**	**0.346**		**0.00815**
Barium	**7440-39-3**	**4.02**		**0.931**
Beryllium	**7440-41-7**	**0.0345**		**0.00278**
Cadmium	7440-43-9	0.0191	U	0.0645
Chromium	**7440-47-3**	**4.09**		**1.92**
Cobalt	**7440-48-4**	**0.742**		**0.0379**
Copper	**7440-50-8**	**67.8**		**2.29**
Lead	**7439-92-1**	**0.934**		**0.186**
Manganese	**7439-96-5**	**18.6**		**1.64**
Molybdenum	**7439-98-7**	**2.75**		**0.312**
Nickel	**7440-02-0**	**2.18**		**0.567**
Selenium	**7782-49-2**	**0.188**	LJ, QX	**0.00780**
Thallium	**7440-28-0**	**0.00126**		**5.13E-4**
Vanadium	**7440-62-2**	**1.90**		**0.0460**
Zinc	7440-66-6	25.8	U	66.8

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: 07/24/24 14:27
SUBMITTED: 07/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-070924-HM
Matrix: Air
Lab ID: 4071551-27
Sample Volume: 1879.422 m³
Filter ID:
Sampled: 07/09/24 23:59
Received: 07/15/24 16:56
Analysis Date: 07/19/24 03:38

Comments: Q9546653 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.134**	SL	**0.0334**
Arsenic	**7440-38-2**	**0.759**		**0.00811**
Barium	**7440-39-3**	**5.93**		**0.926**
Beryllium	**7440-41-7**	**0.0215**		**0.00277**
Cadmium	**7440-43-9**	**0.0862**		**0.0641**
Chromium	**7440-47-3**	**4.25**		**1.91**
Cobalt	**7440-48-4**	**0.768**		**0.0377**
Copper	**7440-50-8**	**32.9**		**2.28**
Lead	**7439-92-1**	**1.42**		**0.185**
Manganese	**7439-96-5**	**24.2**		**1.64**
Molybdenum	**7439-98-7**	**1.32**		**0.311**
Nickel	**7440-02-0**	**2.30**		**0.564**
Selenium	**7782-49-2**	**0.181**	LJ, QX	**0.00776**
Thallium	**7440-28-0**	**0.00124**		**5.10E-4**
Vanadium	**7440-62-2**	**2.04**		**0.0458**
Zinc	7440-66-6	33.3	U	66.5

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 07/24/24 14:27
SUBMITTED: 07/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-071024-HM
Matrix: Air
Lab ID: 4071551-28
Sample Volume: 1892.226 m³
Filter ID:
Sampled: 07/10/24 23:59
Received: 07/15/24 16:56
Analysis Date: 07/19/24 03:48

Comments: Q9546652 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.163**	SL	**0.0332**
Barium	**7440-39-3**	**14.3**		**0.920**
Beryllium	**7440-41-7**	**0.0684**		**0.00275**
Cadmium	**7440-43-9**	**0.0985**	LL, QX	**0.0637**
Chromium	**7440-47-3**	**13.6**		**1.90**
Cobalt	**7440-48-4**	**3.29**		**0.0375**
Copper	**7440-50-8**	**109**		**2.26**
Manganese	**7439-96-5**	**76.4**		**1.63**
Nickel	**7440-02-0**	**6.98**		**0.561**
Vanadium	**7440-62-2**	**8.62**		**0.0455**
Zinc	7440-66-6	21.3	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: 07/24/24 14:27
SUBMITTED: 07/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-071024-HM
Matrix: Air
Lab ID: 4071551-28RE1
Sample Volume: 1892.226 m³
Filter ID:
Sampled: 07/10/24 23:59
Received: 07/15/24 16:56
Analysis Date: 07/19/24 20:05

Comments: Q9546652 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Arsenic	7440-38-2	5.16	D	0.0161
Lead	7439-92-1	0.811	D	0.368
Molybdenum	7439-98-7	5.68	D	0.617
Selenium	7782-49-2	0.341	D	0.0154
Thallium	7440-28-0	0.00321	D	0.00101

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

FILE #: 4205.00.003.001
REPORTED: 07/24/24 14:27
SUBMITTED: 07/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-071024-HM
Matrix: Air
Lab ID: 4071551-29
Sample Volume: 2031.775 m³
Filter ID:
Sampled: 07/10/24 23:59
Received: 07/15/24 16:56
Analysis Date: 07/19/24 03:58

Comments: Q9546651 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0779**	SL	**0.0309**
Barium	**7440-39-3**	**13.8**		**0.857**
Beryllium	**7440-41-7**	**0.0790**		**0.00256**
Chromium	**7440-47-3**	**14.6**		**1.77**
Cobalt	**7440-48-4**	**3.67**		**0.0349**
Copper	**7440-50-8**	**58.6**		**2.11**
Lead	**7439-92-1**	**2.17**		**0.171**
Manganese	**7439-96-5**	**85.3**		**1.51**
Nickel	**7440-02-0**	**9.84**		**0.522**
Thallium	**7440-28-0**	**0.00362**		**4.72E-4**
Zinc	7440-66-6	27.4	U	61.5

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

FILE #: 4205.00.003.001
REPORTED: 07/24/24 14:27
SUBMITTED: 07/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-071024-HM
Matrix: Air
Lab ID: 4071551-29RE1
Sample Volume: 2031.775 m³
Filter ID:
Sampled: 07/10/24 23:59
Received: 07/15/24 16:56
Analysis Date: 07/19/24 20:16

Comments: Q9546651 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Arsenic	**7440-38-2**	**1.09**	D	**0.0150**
Cadmium	7440-43-9	0.115	U, D	0.119
Molybdenum	**7439-98-7**	**2.27**	D	**0.575**
Selenium	**7782-49-2**	**0.363**	D	**0.0143**
Vanadium	**7440-62-2**	**9.78**	D	**0.0847**

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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: 07/24/24 14:27
SUBMITTED: 07/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-071024-HM
Matrix: Air
Lab ID: 4071551-30
Sample Volume: 1939.37 m³
Filter ID:
Sampled: 07/10/24 23:59
Received: 07/15/24 16:56
Analysis Date: 07/19/24 04:09

Comments: Q9546650 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	7440-36-0	0.0322	U, SL	0.0324
Arsenic	**7440-38-2**	**0.232**		**0.00786**
Barium	**7440-39-3**	**4.02**		**0.898**
Beryllium	**7440-41-7**	**0.0426**		**0.00268**
Cadmium	7440-43-9	0.0133	U	0.0622
Chromium	**7440-47-3**	**4.27**		**1.85**
Cobalt	**7440-48-4**	**0.747**		**0.0366**
Copper	**7440-50-8**	**49.4**		**2.21**
Lead	**7439-92-1**	**0.570**		**0.180**
Manganese	**7439-96-5**	**18.7**		**1.59**
Molybdenum	**7439-98-7**	**2.18**		**0.301**
Nickel	**7440-02-0**	**1.95**		**0.547**
Selenium	**7782-49-2**	**0.186**	LJ, QX	**0.00752**
Thallium	**7440-28-0**	**0.00143**		**4.94E-4**
Vanadium	**7440-62-2**	**2.01**		**0.0444**
Zinc	7440-66-6	12.0	U	64.4

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 07/24/24 14:27
SUBMITTED: 07/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-071024-HM
Matrix: Air
Lab ID: 4071551-31
Sample Volume: 1807.092 m³
Filter ID:
Sampled: 07/10/24 23:59
Received: 07/15/24 16:56
Analysis Date: 07/19/24 04:40

Comments: Q9546647 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.105**	SL	**0.0348**
Barium	**7440-39-3**	**10.6**		**0.963**
Beryllium	**7440-41-7**	**0.0606**		**0.00288**
Chromium	**7440-47-3**	**7.59**		**1.99**
Cobalt	**7440-48-4**	**1.73**		**0.0393**
Copper	**7440-50-8**	**36.5**		**2.37**
Lead	**7439-92-1**	**2.44**		**0.193**
Manganese	**7439-96-5**	**61.8**		**1.70**
Nickel	**7440-02-0**	**4.80**		**0.587**
Thallium	**7440-28-0**	**0.00250**		**5.30E-4**
Vanadium	**7440-62-2**	**4.16**		**0.0476**
Zinc	7440-66-6	38.7	U	69.1

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: 07/24/24 14:27
SUBMITTED: 07/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-071024-HM
Matrix: Air
Lab ID: 4071551-31RE1
Sample Volume: 1807.092 m³
Filter ID:
Sampled: 07/10/24 23:59
Received: 07/15/24 16:56
Analysis Date: 07/19/24 20:26

Comments: Q9546647 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Arsenic	**7440-38-2**	**1.21**	D	**0.0169**
Cadmium	7440-43-9	0.0370	U, D	0.133
Molybdenum	**7439-98-7**	**1.24**	D	**0.646**
Selenium	**7782-49-2**	**0.334**	D	**0.0161**

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FILE #: 4205.00.003.001
REPORTED: 07/24/24 14:27
SUBMITTED: 07/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-FB01-071024-HM
Matrix: Air
Lab ID: 4071551-32
Sample Volume: 1892.226 m³
Filter ID:
Sampled: 07/10/24 00:00
Received: 07/15/24 16:56
Analysis Date: 07/19/24 05:01

Comments: Q9546641 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	7440-36-0	0.00860	U, SL	0.0332
Arsenic	**7440-38-2**	**0.0191**	FB-01	**0.00806**
Barium	7440-39-3	0.806	U	0.920
Beryllium	7440-41-7	0.00143	U	0.00275
Cadmium	7440-43-9	0.00254	U	0.0637
Chromium	7440-47-3	1.66	U	1.90
Cobalt	**7440-48-4**	**0.0403**	FB-01	**0.0375**
Copper	7440-50-8	0.979	U	2.26
Lead	7439-92-1	0.0786	U	0.184
Manganese	7439-96-5	0.658	U	1.63
Molybdenum	7439-98-7	0.269	U	0.309
Nickel	7440-02-0	0.352	U	0.561
Selenium	7782-49-2	0.00270	U, LJ, QX	0.00770
Thallium	7440-28-0	1.22E-4	U	5.06E-4
Vanadium	**7440-62-2**	**0.0670**	FB-01	**0.0455**
Zinc	7440-66-6	8.44	U	66.0

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FILE #: 4205.00.003.001
REPORTED: 07/24/24 14:27
SUBMITTED: 07/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-LB01-070424-HM
Matrix: Air
Lab ID: 4071551-33
Sample Volume: 1879.261 m³
Filter ID:
Sampled: 07/04/24 00:00
Received: 07/15/24 16:56
Analysis Date: 07/19/24 05:11

Comments: Q8507555 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	7440-36-0	0.0207	U, SL	0.0334
Arsenic	**7440-38-2**	**0.00838**	FB-01	**0.00811**
Barium	7440-39-3	0.850	U	0.926
Beryllium	7440-41-7	8.26E-4	U	0.00277
Cadmium	7440-43-9	6.54E-4	U	0.0642
Chromium	7440-47-3	0.972	U	1.91
Cobalt	7440-48-4	0.0170	U	0.0377
Copper	7440-50-8	0.544	U	2.28
Lead	7439-92-1	0.0302	U	0.185
Manganese	7439-96-5	0.333	U	1.64
Molybdenum	7439-98-7	0.145	U	0.311
Nickel	7440-02-0	0.489	U	0.564
Selenium	7782-49-2	0.00394	U, LJ, QX	0.00776
Thallium	7440-28-0	1.08E-4	U	5.10E-4
Vanadium	7440-62-2	0.0367	U	0.0458
Zinc	7440-66-6	4.74	U	66.5

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FILE #: 4205.00.003.001
REPORTED: 07/24/24 14:27
SUBMITTED: 07/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-LB01-070524-HM
Matrix: Air
Lab ID: 4071551-34
Sample Volume: 1890.643 m³
Filter ID:
Sampled: 07/05/24 00:00
Received: 07/15/24 16:56
Analysis Date: 07/19/24 05:21

Comments: Q9543355 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	7440-36-0	0.0123	U, SL	0.0332
Arsenic	7440-38-2	0.00801	U	0.00806
Barium	7440-39-3	0.475	U	0.921
Beryllium	7440-41-7	0.00128	U	0.00275
Cadmium	7440-43-9	0.00303	U	0.0638
Chromium	7440-47-3	1.30	U	1.90
Cobalt	7440-48-4	0.0272	U	0.0375
Copper	7440-50-8	0.368	U	2.26
Lead	7439-92-1	0.0384	U	0.184
Manganese	7439-96-5	0.300	U	1.63
Molybdenum	7439-98-7	0.179	U	0.309
Nickel	7440-02-0	0.309	U	0.561
Selenium	7782-49-2	0.00191	U, LJ, QX	0.00771
Thallium	7440-28-0	7.80E-5	U	5.07E-4
Vanadium	7440-62-2	0.0301	U	0.0455
Zinc	7440-66-6	4.92	U	66.1

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FILE #: 4205.00.003.001
REPORTED: 07/24/24 14:27
SUBMITTED: 07/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-LB01-070624-HM
Matrix: Air
Lab ID: 4071551-35
Sample Volume: 1937.099 m³
Filter ID:
Sampled: 07/06/24 00:00
Received: 07/15/24 16:56
Analysis Date: 07/19/24 05:32

Comments: Q9546671 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	7440-36-0	0.00710	U, SL	0.0324
Arsenic	7440-38-2	0.00663	U	0.00787
Barium	7440-39-3	0.568	U	0.899
Beryllium	7440-41-7	0.00102	U	0.00269
Cadmium	7440-43-9	0.00153	U	0.0622
Chromium	7440-47-3	1.52	U	1.86
Cobalt	7440-48-4	0.0258	U	0.0366
Copper	7440-50-8	0.312	U	2.21
Lead	7439-92-1	0.0559	U	0.180
Manganese	7439-96-5	0.202	U	1.59
Molybdenum	7439-98-7	0.237	U	0.302
Nickel	7440-02-0	0.288	U	0.548
Selenium	7782-49-2	0.00168	LJ, QX, U	0.00753
Thallium	7440-28-0	7.26E-5	U	4.95E-4
Vanadium	7440-62-2	0.0223	U	0.0444
Zinc	7440-66-6	4.62	U	64.5

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Blue Bell, PA 19422
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FILE #: 4205.00.003.001
REPORTED: 07/24/24 14:27
SUBMITTED: 07/15/24
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 2407069 - B4G1802										
Calibration Blank (2407069-CCB1)				Prepared & Analyzed: 07/18/24						
Antimony	1.06		ng/l							
Arsenic	1.89		ng/l							
Barium	0.150		ng/l							
Beryllium	-0.0595		ng/l							U
Cadmium	0.288		ng/l							
Chromium	-0.184		ng/l							U
Cobalt	-0.114		ng/l							U
Copper	90.4		ng/l							
Lead	31.2		ng/l							
Manganese	12.8		ng/l							
Molybdenum	3.37		ng/l							
Nickel	0.551		ng/l							
Selenium	-1.84		ng/l							LJ, QX, U
Thallium	1.25		ng/l							
Vanadium	-37.3		ng/l							U
Zinc	10.4		ng/l							
Calibration Blank (2407069-CCB2)				Prepared & Analyzed: 07/18/24						
Antimony	0.597		ng/l							
Arsenic	1.76		ng/l							
Barium	-0.135		ng/l							U
Beryllium	0.0447		ng/l							
Cadmium	0.252		ng/l							
Chromium	0.492		ng/l							
Cobalt	-0.0581		ng/l							U
Copper	37.8		ng/l							
Lead	18.4		ng/l							
Manganese	13.8		ng/l							
Molybdenum	1.44		ng/l							
Nickel	0.605		ng/l							
Selenium	-0.987		ng/l							LJ, QX, U
Thallium	1.07		ng/l							
Vanadium	-38.4		ng/l							U
Zinc	8.58		ng/l							
Calibration Blank (2407069-CCB3)				Prepared & Analyzed: 07/18/24						
Antimony	0.529		ng/l							
Arsenic	0.0693		ng/l							
Barium	0.0263		ng/l							
Beryllium	-0.0315		ng/l							U

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REPORTED: 07/24/24 14:27
SUBMITTED: 07/15/24
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 2407069 - B4G1802										
Calibration Blank (2407069-CCB3) Contin				Prepared & Analyzed: 07/18/24						
Cadmium	0.168		ng/l							
Chromium	0.122		ng/l							
Cobalt	-0.157		ng/l							U
Copper	34.9		ng/l							
Lead	17.1		ng/l							
Manganese	13.3		ng/l							
Molybdenum	1.13		ng/l							
Nickel	-0.237		ng/l							U
Selenium	2.69		ng/l							LJ, QX
Thallium	1.10		ng/l							
Vanadium	-42.7		ng/l							U
Zinc	-1.78		ng/l							U
Calibration Blank (2407069-CCB4)				Prepared: 07/18/24 Analyzed: 07/19/24						
Antimony	0.506		ng/l							
Arsenic	-0.0728		ng/l							U
Barium	0.614		ng/l							
Beryllium	-0.0834		ng/l							U
Cadmium	0.148		ng/l							
Chromium	1.45		ng/l							
Cobalt	-0.0364		ng/l							U
Copper	33.2		ng/l							
Lead	13.7		ng/l							
Manganese	13.4		ng/l							
Molybdenum	1.44		ng/l							
Nickel	-0.0254		ng/l							U
Selenium	-1.63		ng/l							LJ, QX, U
Thallium	0.860		ng/l							
Vanadium	-42.6		ng/l							U
Zinc	-2.73		ng/l							U
Calibration Blank (2407069-CCB5)				Prepared: 07/18/24 Analyzed: 07/19/24						
Antimony	0.458		ng/l							
Arsenic	2.16		ng/l							
Barium	0.337		ng/l							
Beryllium	-0.111		ng/l							U
Cadmium	0.0846		ng/l							
Chromium	1.40		ng/l							
Cobalt	-0.180		ng/l							U
Copper	27.1		ng/l							

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REPORTED: 07/24/24 14:27
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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 2407069 - B4G1802										
Calibration Blank (2407069-CCB5) Contin				Prepared: 07/18/24 Analyzed: 07/19/24						
Lead	12.4		ng/l							
Manganese	12.1		ng/l							
Molybdenum	2.40		ng/l							
Nickel	-0.109		ng/l							U
Selenium	-0.413		ng/l							LJ, QX, U
Thallium	1.16		ng/l							
Vanadium	-43.7		ng/l							U
Zinc	1.66		ng/l							
Calibration Blank (2407069-CCB6)				Prepared: 07/18/24 Analyzed: 07/19/24						
Antimony	0.358		ng/l							
Arsenic	0.781		ng/l							
Barium	0.0569		ng/l							
Beryllium	-0.0883		ng/l							U
Cadmium	0.0181		ng/l							
Chromium	0.793		ng/l							
Cobalt	-0.0246		ng/l							U
Copper	30.3		ng/l							
Lead	11.5		ng/l							
Manganese	12.6		ng/l							
Molybdenum	1.98		ng/l							
Nickel	0.445		ng/l							
Selenium	6.12		ng/l							LJ, QX
Thallium	1.02		ng/l							
Vanadium	-40.6		ng/l							U
Zinc	-5.05		ng/l							U
Calibration Blank (2407069-CCB7)				Prepared: 07/18/24 Analyzed: 07/19/24						
Antimony	0.673		ng/l							
Arsenic	2.43		ng/l							
Barium	0.200		ng/l							
Beryllium	-0.0828		ng/l							U
Cadmium	0.123		ng/l							
Chromium	1.16		ng/l							
Cobalt	-0.142		ng/l							U
Copper	25.9		ng/l							
Lead	11.1		ng/l							
Manganese	11.6		ng/l							
Molybdenum	2.33		ng/l							
Nickel	0.356		ng/l							

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FILE #: 4205.00.003.001
REPORTED: 07/24/24 14:27
SUBMITTED: 07/15/24
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 2407069 - B4G1802										
Calibration Blank (2407069-CCB7) Contin				Prepared: 07/18/24 Analyzed: 07/19/24						
Selenium	-0.154		ng/l							LJ, QX, U
Thallium	1.18		ng/l							
Vanadium	-42.9		ng/l							U
Zinc	3.26		ng/l							
Calibration Check (2407069-CCV1)				Prepared & Analyzed: 07/18/24						
Antimony	20000		ng/l	20000		100	90-110			
Arsenic	20000		ng/l	20000		100	90-110			
Barium	199000		ng/l	200000		99.3	90-110			
Beryllium	5040		ng/l	5000.0		101	90-110			
Cadmium	20300		ng/l	20000		101	90-110			
Chromium	244000		ng/l	240000		102	90-110			
Cobalt	50900		ng/l	50000		102	90-110			
Copper	2.06E6		ng/l	2.0000E6		103	90-110			
Lead	196000		ng/l	200000		98.1	90-110			
Manganese	512000		ng/l	500000		102	90-110			
Molybdenum	47000		ng/l	50000		94.0	90-110			
Nickel	122000		ng/l	120000		102	90-110			
Selenium	20200		ng/l	20000		101	90-110			LJ, QX
Thallium	501		ng/l	500.00		100	90-110			
Vanadium	20300		ng/l	20000		102	90-110			
Zinc	512000		ng/l	500000		102	90-110			
Calibration Check (2407069-CCV2)				Prepared & Analyzed: 07/18/24						
Antimony	20000		ng/l	20000		99.9	90-110			
Arsenic	19900		ng/l	20000		99.5	90-110			
Barium	199000		ng/l	200000		99.6	90-110			
Beryllium	5050		ng/l	5000.0		101	90-110			
Cadmium	20200		ng/l	20000		101	90-110			
Chromium	243000		ng/l	240000		101	90-110			
Cobalt	51000		ng/l	50000		102	90-110			
Copper	2.06E6		ng/l	2.0000E6		103	90-110			
Lead	199000		ng/l	200000		99.5	90-110			
Manganese	507000		ng/l	500000		101	90-110			
Molybdenum	47600		ng/l	50000		95.1	90-110			
Nickel	122000		ng/l	120000		102	90-110			
Selenium	20100		ng/l	20000		101	90-110			LJ, QX
Thallium	490		ng/l	500.00		98.0	90-110			
Vanadium	20200		ng/l	20000		101	90-110			
Zinc	516000		ng/l	500000		103	90-110			

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FILE #: 4205.00.003.001
REPORTED: 07/24/24 14:27
SUBMITTED: 07/15/24
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 2407069 - B4G1802										
Calibration Check (2407069-CCV3)				Prepared & Analyzed: 07/18/24						
Antimony	20300		ng/l	20000		101	90-110			
Arsenic	19800		ng/l	20000		98.8	90-110			
Barium	199000		ng/l	200000		99.7	90-110			
Beryllium	5030		ng/l	5000.0		101	90-110			
Cadmium	20400		ng/l	20000		102	90-110			
Chromium	242000		ng/l	240000		101	90-110			
Cobalt	50700		ng/l	50000		101	90-110			
Copper	2.07E6		ng/l	2.0000E6		103	90-110			
Lead	198000		ng/l	200000		99.1	90-110			
Manganese	506000		ng/l	500000		101	90-110			
Molybdenum	48400		ng/l	50000		96.9	90-110			
Nickel	122000		ng/l	120000		101	90-110			
Selenium	20000		ng/l	20000		100	90-110			LJ, QX
Thallium	485		ng/l	500.00		97.1	90-110			
Vanadium	20000		ng/l	20000		99.9	90-110			
Zinc	511000		ng/l	500000		102	90-110			
Calibration Check (2407069-CCV4)				Prepared: 07/18/24 Analyzed: 07/19/24						
Antimony	20400		ng/l	20000		102	90-110			
Arsenic	19900		ng/l	20000		99.3	90-110			
Barium	201000		ng/l	200000		101	90-110			
Beryllium	5030		ng/l	5000.0		101	90-110			
Cadmium	20300		ng/l	20000		101	90-110			
Chromium	244000		ng/l	240000		101	90-110			
Cobalt	50900		ng/l	50000		102	90-110			
Copper	2.07E6		ng/l	2.0000E6		103	90-110			
Lead	199000		ng/l	200000		99.4	90-110			
Manganese	510000		ng/l	500000		102	90-110			
Molybdenum	48700		ng/l	50000		97.5	90-110			
Nickel	122000		ng/l	120000		102	90-110			
Selenium	19900		ng/l	20000		99.5	90-110			LJ, QX
Thallium	493		ng/l	500.00		98.5	90-110			
Vanadium	20300		ng/l	20000		101	90-110			
Zinc	512000		ng/l	500000		102	90-110			
Calibration Check (2407069-CCV5)				Prepared: 07/18/24 Analyzed: 07/19/24						
Antimony	20300		ng/l	20000		101	90-110			
Arsenic	19900		ng/l	20000		99.3	90-110			
Barium	200000		ng/l	200000		99.9	90-110			
Beryllium	5000		ng/l	5000.0		100	90-110			

Tetra Tech, Inc.
1777 Sentry Pkwy, Bldg 12
Blue Bell, PA 19422
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REPORTED: 07/24/24 14:27
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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 2407069 - B4G1802										
Calibration Check (2407069-CCV5) Contin				Prepared: 07/18/24 Analyzed: 07/19/24						
Cadmium	20200		ng/l	20000		101	90-110			
Chromium	245000		ng/l	240000		102	90-110			
Cobalt	51600		ng/l	50000		103	90-110			
Copper	2.09E6		ng/l	2.0000E6		104	90-110			
Lead	198000		ng/l	200000		98.9	90-110			
Manganese	510000		ng/l	500000		102	90-110			
Molybdenum	48200		ng/l	50000		96.3	90-110			
Nickel	124000		ng/l	120000		103	90-110			
Selenium	19800		ng/l	20000		99.2	90-110			LJ, QX
Thallium	481		ng/l	500.00		96.3	90-110			
Vanadium	20300		ng/l	20000		102	90-110			
Zinc	512000		ng/l	500000		102	90-110			
Calibration Check (2407069-CCV6)				Prepared: 07/18/24 Analyzed: 07/19/24						
Antimony	20300		ng/l	20000		101	90-110			
Arsenic	20100		ng/l	20000		100	90-110			
Barium	199000		ng/l	200000		99.6	90-110			
Beryllium	4990		ng/l	5000.0		99.7	90-110			
Cadmium	20300		ng/l	20000		102	90-110			
Chromium	250000		ng/l	240000		104	90-110			
Cobalt	52100		ng/l	50000		104	90-110			
Copper	2.11E6		ng/l	2.0000E6		106	90-110			
Lead	199000		ng/l	200000		99.5	90-110			
Manganese	520000		ng/l	500000		104	90-110			
Molybdenum	48900		ng/l	50000		97.8	90-110			
Nickel	125000		ng/l	120000		104	90-110			
Selenium	19900		ng/l	20000		99.4	90-110			LJ, QX
Thallium	491		ng/l	500.00		98.1	90-110			
Vanadium	20500		ng/l	20000		103	90-110			
Zinc	518000		ng/l	500000		104	90-110			
Calibration Check (2407069-CCV7)				Prepared: 07/18/24 Analyzed: 07/19/24						
Antimony	20400		ng/l	20000		102	90-110			
Arsenic	19900		ng/l	20000		99.5	90-110			
Barium	201000		ng/l	200000		100	90-110			
Beryllium	4990		ng/l	5000.0		99.9	90-110			
Cadmium	20700		ng/l	20000		103	90-110			
Chromium	244000		ng/l	240000		102	90-110			
Cobalt	51400		ng/l	50000		103	90-110			
Copper	2.11E6		ng/l	2.0000E6		105	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 2407069 - B4G1802										
Calibration Check (2407069-CCV7) Contin				Prepared: 07/18/24 Analyzed: 07/19/24						
Lead	197000		ng/l	200000		98.7	90-110			
Manganese	508000		ng/l	500000		102	90-110			
Molybdenum	49000		ng/l	50000		97.9	90-110			
Nickel	124000		ng/l	120000		103	90-110			
Selenium	19800		ng/l	20000		98.8	90-110			LJ, QX
Thallium	493		ng/l	500.00		98.6	90-110			
Vanadium	20100		ng/l	20000		100	90-110			
Zinc	519000		ng/l	500000		104	90-110			
High Cal Check (2407069-HCV1)				Prepared & Analyzed: 07/18/24						
Antimony	40200		ng/l	40000		101	95-105			
Arsenic	39600		ng/l	40000		99.0	95-105			
Barium	397000		ng/l	400000		99.1	95-105			
Beryllium	10000		ng/l	10000		100	95-105			
Cadmium	39600		ng/l	40000		99.1	95-105			
Chromium	466000		ng/l	480000		97.1	95-105			
Cobalt	98200		ng/l	100000		98.2	95-105			
Copper	3.91E6		ng/l	4.0000E6		97.8	95-105			
Lead	400000		ng/l	400000		100	95-105			
Manganese	983000		ng/l	1.0000E6		98.3	95-105			
Molybdenum	99700		ng/l	100000		99.7	95-105			
Nickel	234000		ng/l	240000		97.5	95-105			
Selenium	40400		ng/l	40000		101	95-105			LJ, QX
Thallium	1020		ng/l	1000.0		102	95-105			
Vanadium	39500		ng/l	40000		98.7	95-105			
Zinc	991000		ng/l	1.0000E6		99.1	95-105			
Initial Cal Blank (2407069-ICB1)				Prepared & Analyzed: 07/18/24						
Antimony	0.910		ng/l							
Arsenic	0.517		ng/l							
Barium	-0.0387		ng/l							U
Beryllium	0.151		ng/l							
Cadmium	0.00851		ng/l							
Chromium	0.498		ng/l							
Cobalt	-0.197		ng/l							U
Copper	54.6		ng/l							
Lead	21.8		ng/l							
Manganese	12.3		ng/l							
Molybdenum	0.860		ng/l							
Nickel	-0.593		ng/l							U

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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2407069 - B4G1802										
Initial Cal Blank (2407069-ICB1) Continu				Prepared & Analyzed: 07/18/24						
Selenium	-2.41		ng/l							LJ, QX, U
Thallium	0.512		ng/l							
Vanadium	-9.83		ng/l							U
Zinc	1.97		ng/l							
Initial Cal Check (2407069-ICV1)				Prepared & Analyzed: 07/18/24						
Antimony	20000		ng/l	20000		100	90-110			
Arsenic	19200		ng/l	20000		96.1	90-110			
Barium	196000		ng/l	200000		98.1	90-110			
Beryllium	5080		ng/l	5000.0		102	90-110			
Cadmium	20800		ng/l	20000		104	90-110			
Chromium	239000		ng/l	240000		99.5	90-110			
Cobalt	47800		ng/l	50000		95.5	90-110			
Copper	2.04E6		ng/l	2.0000E6		102	90-110			
Lead	197000		ng/l	200000		98.5	90-110			
Manganese	499000		ng/l	500000		99.8	90-110			
Molybdenum	46300		ng/l	50000		92.6	90-110			
Nickel	119000		ng/l	120000		98.8	90-110			
Selenium	20200		ng/l	20000		101	90-110			LJ, QX
Thallium	500		ng/l	500.00		99.9	90-110			
Vanadium	19700		ng/l	20000		98.7	90-110			
Zinc	513000		ng/l	500000		103	90-110			
Interference Check A (2407069-IFA1)				Prepared & Analyzed: 07/18/24						
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	307000		ng/l	300000		102	80-120			
Nickel	0.00		ng/l				80-120			U
Selenium	0.00		ng/l				80-120			LJ, QX, U
Thallium	0.00		ng/l				80-120			U
Vanadium	0.00		ng/l				80-120			U
Zinc	0.00		ng/l				80-120			U

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2407069 - B4G1802										
Interference Check B (2407069-IFB1)				Prepared & Analyzed: 07/18/24						
Antimony	20400		ng/l	20000		102	80-120			
Arsenic	20200		ng/l	20000		101	80-120			
Barium	205000		ng/l	200000		102	80-120			
Beryllium	4810		ng/l	5000.0		96.2	80-120			
Cadmium	19600		ng/l	20000		98.0	80-120			
Chromium	249000		ng/l	240000		104	80-120			
Cobalt	48700		ng/l	50000		97.4	80-120			
Copper	1.90E6		ng/l	2.0000E6		94.9	80-120			
Lead	205000		ng/l	200000		102	80-120			
Manganese	512000		ng/l	500000		102	80-120			
Molybdenum	353000		ng/l	350000		101	80-120			
Nickel	114000		ng/l	120000		94.7	80-120			
Selenium	18800		ng/l	20000		93.8	80-120			LJ, QX
Thallium	527		ng/l	500.00		105	80-120			
Vanadium	21200		ng/l	20000		106	80-120			
Zinc	452000		ng/l	500000		90.4	80-120			
Batch 2407074 - B4G1802										
Calibration Blank (2407074-CCB1)				Prepared & Analyzed: 07/19/24						
Antimony	0.712		ng/l							
Arsenic	-0.837		ng/l							U
Barium	0.153		ng/l							
Beryllium	-0.112		ng/l							U
Cadmium	0.0360		ng/l							
Chromium	-0.00974		ng/l							U
Cobalt	0.0452		ng/l							
Copper	41.2		ng/l							
Lead	17.7		ng/l							
Manganese	0.811		ng/l							
Molybdenum	2.18		ng/l							
Nickel	0.0431		ng/l							
Selenium	7.66		ng/l							
Thallium	0.619		ng/l							
Vanadium	-19.5		ng/l							U
Zinc	8.50		ng/l							
Calibration Blank (2407074-CCB2)				Prepared & Analyzed: 07/19/24						
Antimony	0.592		ng/l							
Arsenic	-0.268		ng/l							U
Barium	0.346		ng/l							

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2407074 - B4G1802										
Calibration Blank (2407074-CCB2) Contin				Prepared & Analyzed: 07/19/24						
Beryllium	-0.111		ng/l							U
Cadmium	0.0903		ng/l							
Chromium	0.186		ng/l							
Cobalt	-0.0385		ng/l							U
Copper	17.6		ng/l							
Lead	9.87		ng/l							
Manganese	-0.280		ng/l							U
Molybdenum	0.956		ng/l							
Nickel	-0.0832		ng/l							U
Selenium	-3.17		ng/l							U
Thallium	0.526		ng/l							
Vanadium	-18.3		ng/l							U
Zinc	5.66		ng/l							
Calibration Blank (2407074-CCB3)				Prepared & Analyzed: 07/19/24						
Antimony	0.951		ng/l							
Arsenic	-0.709		ng/l							U
Barium	0.546		ng/l							
Beryllium	-0.110		ng/l							U
Cadmium	0.214		ng/l							
Chromium	0.894		ng/l							
Cobalt	0.115		ng/l							
Copper	37.2		ng/l							
Lead	14.4		ng/l							
Manganese	1.50		ng/l							
Molybdenum	1.83		ng/l							
Nickel	-0.0138		ng/l							U
Selenium	-7.80		ng/l							U
Thallium	1.15		ng/l							
Vanadium	-39.8		ng/l							U
Zinc	0.255		ng/l							
Calibration Blank (2407074-CCB4)				Prepared & Analyzed: 07/19/24						
Antimony	0.978		ng/l							
Arsenic	-0.785		ng/l							U
Barium	0.252		ng/l							
Beryllium	-0.0373		ng/l							U
Cadmium	0.197		ng/l							
Chromium	1.73		ng/l							
Cobalt	0.0560		ng/l							

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2407074 - B4G1802										
Calibration Blank (2407074-CCB4) Contin				Prepared & Analyzed: 07/19/24						
Copper	35.0		ng/l							
Lead	14.8		ng/l							
Manganese	-0.677		ng/l							U
Molybdenum	1.78		ng/l							
Nickel	-0.421		ng/l							U
Selenium	-4.72		ng/l							U
Thallium	1.25		ng/l							
Vanadium	-38.7		ng/l							U
Zinc	20.4		ng/l							
Calibration Blank (2407074-CCB5)				Prepared & Analyzed: 07/19/24						
Antimony	0.825		ng/l							
Arsenic	0.948		ng/l							
Barium	0.204		ng/l							
Beryllium	-0.0877		ng/l							U
Cadmium	0.328		ng/l							
Chromium	1.17		ng/l							
Cobalt	0.0404		ng/l							
Copper	17.6		ng/l							
Lead	14.4		ng/l							
Manganese	-0.279		ng/l							U
Molybdenum	2.04		ng/l							
Nickel	0.0930		ng/l							
Selenium	1.95		ng/l							
Thallium	1.26		ng/l							
Vanadium	-43.2		ng/l							U
Zinc	2.29		ng/l							
Calibration Check (2407074-CCV1)				Prepared & Analyzed: 07/19/24						
Antimony	20000		ng/l	20000		100	90-110			
Arsenic	20100		ng/l	20000		100	90-110			
Barium	200000		ng/l	200000		99.8	90-110			
Beryllium	5050		ng/l	5000.0		101	90-110			
Cadmium	19900		ng/l	20000		99.6	90-110			
Chromium	247000		ng/l	240000		103	90-110			
Cobalt	51200		ng/l	50000		102	90-110			
Copper	2.06E6		ng/l	2.0000E6		103	90-110			
Lead	200000		ng/l	200000		99.8	90-110			
Manganese	519000		ng/l	500000		104	90-110			
Molybdenum	49000		ng/l	50000		97.9	90-110			

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2407074 - B4G1802										
Calibration Check (2407074-CCV1) Contin					Prepared & Analyzed: 07/19/24					
Nickel	124000		ng/l	120000		103	90-110			
Selenium	20400		ng/l	20000		102	90-110			
Thallium	492		ng/l	500.00		98.5	90-110			
Vanadium	20400		ng/l	20000		102	90-110			
Zinc	514000		ng/l	500000		103	90-110			
Calibration Check (2407074-CCV2)					Prepared & Analyzed: 07/19/24					
Antimony	20100		ng/l	20000		101	90-110			
Arsenic	20100		ng/l	20000		100	90-110			
Barium	199000		ng/l	200000		99.3	90-110			
Beryllium	5010		ng/l	5000.0		100	90-110			
Cadmium	20100		ng/l	20000		101	90-110			
Chromium	242000		ng/l	240000		101	90-110			
Cobalt	50800		ng/l	50000		102	90-110			
Copper	2.06E6		ng/l	2.0000E6		103	90-110			
Lead	199000		ng/l	200000		99.3	90-110			
Manganese	508000		ng/l	500000		102	90-110			
Molybdenum	47800		ng/l	50000		95.6	90-110			
Nickel	123000		ng/l	120000		102	90-110			
Selenium	20100		ng/l	20000		101	90-110			
Thallium	488		ng/l	500.00		97.5	90-110			
Vanadium	20200		ng/l	20000		101	90-110			
Zinc	513000		ng/l	500000		103	90-110			
Calibration Check (2407074-CCV3)					Prepared & Analyzed: 07/19/24					
Antimony	20100		ng/l	20000		101	90-110			
Arsenic	19900		ng/l	20000		99.5	90-110			
Barium	197000		ng/l	200000		98.5	90-110			
Beryllium	4980		ng/l	5000.0		99.5	90-110			
Cadmium	20300		ng/l	20000		101	90-110			
Chromium	244000		ng/l	240000		102	90-110			
Cobalt	50800		ng/l	50000		102	90-110			
Copper	2.05E6		ng/l	2.0000E6		102	90-110			
Lead	198000		ng/l	200000		99.1	90-110			
Manganese	509000		ng/l	500000		102	90-110			
Molybdenum	47200		ng/l	50000		94.4	90-110			
Nickel	123000		ng/l	120000		103	90-110			
Selenium	19900		ng/l	20000		99.7	90-110			
Thallium	489		ng/l	500.00		97.9	90-110			
Vanadium	20200		ng/l	20000		101	90-110			

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2407074 - B4G1802										
Calibration Check (2407074-CCV3) Contin					Prepared & Analyzed: 07/19/24					
Zinc	515000		ng/l	500000		103	90-110			
Calibration Check (2407074-CCV4)					Prepared & Analyzed: 07/19/24					
Antimony	20000		ng/l	20000		100	90-110			
Arsenic	20000		ng/l	20000		99.9	90-110			
Barium	197000		ng/l	200000		98.3	90-110			
Beryllium	4990		ng/l	5000.0		99.9	90-110			
Cadmium	20200		ng/l	20000		101	90-110			
Chromium	246000		ng/l	240000		103	90-110			
Cobalt	51500		ng/l	50000		103	90-110			
Copper	2.07E6		ng/l	2.0000E6		104	90-110			
Lead	198000		ng/l	200000		99.1	90-110			
Manganese	512000		ng/l	500000		102	90-110			
Molybdenum	48000		ng/l	50000		96.0	90-110			
Nickel	123000		ng/l	120000		103	90-110			
Selenium	19900		ng/l	20000		99.3	90-110			
Thallium	492		ng/l	500.00		98.5	90-110			
Vanadium	20300		ng/l	20000		101	90-110			
Zinc	524000		ng/l	500000		105	90-110			
Calibration Check (2407074-CCV5)					Prepared & Analyzed: 07/19/24					
Antimony	20200		ng/l	20000		101	90-110			
Arsenic	20000		ng/l	20000		99.9	90-110			
Barium	200000		ng/l	200000		100	90-110			
Beryllium	5050		ng/l	5000.0		101	90-110			
Cadmium	20200		ng/l	20000		101	90-110			
Chromium	244000		ng/l	240000		102	90-110			
Cobalt	51400		ng/l	50000		103	90-110			
Copper	2.07E6		ng/l	2.0000E6		104	90-110			
Lead	198000		ng/l	200000		99.2	90-110			
Manganese	512000		ng/l	500000		102	90-110			
Molybdenum	48200		ng/l	50000		96.3	90-110			
Nickel	123000		ng/l	120000		103	90-110			
Selenium	20100		ng/l	20000		101	90-110			
Thallium	477		ng/l	500.00		95.5	90-110			
Vanadium	20100		ng/l	20000		101	90-110			
Zinc	517000		ng/l	500000		103	90-110			
High Cal Check (2407074-HCV1)					Prepared & Analyzed: 07/19/24					
Antimony	40000		ng/l	40000		100	95-105			
Arsenic	39700		ng/l	40000		99.2	95-105			

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REPORTED: 07/24/24 14:27
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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 2407074 - B4G1802										
High Cal Check (2407074-HCV1) Continue					Prepared & Analyzed: 07/19/24					
Barium	397000		ng/l	400000		99.2	95-105			
Beryllium	9940		ng/l	10000		99.4	95-105			
Cadmium	39300		ng/l	40000		98.3	95-105			
Chromium	471000		ng/l	480000		98.2	95-105			
Cobalt	98000		ng/l	100000		98.0	95-105			
Copper	3.91E6		ng/l	4.0000E6		97.8	95-105			
Lead	400000		ng/l	400000		100	95-105			
Manganese	984000		ng/l	1.0000E6		98.4	95-105			
Molybdenum	99300		ng/l	100000		99.3	95-105			
Nickel	236000		ng/l	240000		98.4	95-105			
Selenium	40000		ng/l	40000		100	95-105			
Thallium	994		ng/l	1000.0		99.4	95-105			
Vanadium	39700		ng/l	40000		99.2	95-105			
Zinc	985000		ng/l	1.0000E6		98.5	95-105			
Initial Cal Blank (2407074-ICB1)					Prepared & Analyzed: 07/19/24					
Antimony	1.44		ng/l							
Arsenic	0.851		ng/l							
Barium	0.226		ng/l							
Beryllium	0.0261		ng/l							
Cadmium	0.434		ng/l							
Chromium	0.489		ng/l							
Cobalt	-0.0549		ng/l							U
Copper	28.7		ng/l							
Lead	37.7		ng/l							
Manganese	0.430		ng/l							
Molybdenum	2.31		ng/l							
Nickel	0.204		ng/l							
Selenium	-7.85		ng/l							U
Thallium	1.34		ng/l							
Vanadium	-36.9		ng/l							U
Zinc	13.2		ng/l							
Initial Cal Check (2407074-ICV1)					Prepared & Analyzed: 07/19/24					
Antimony	19600		ng/l	20000		97.8	90-110			
Arsenic	19400		ng/l	20000		96.8	90-110			
Barium	196000		ng/l	200000		98.1	90-110			
Beryllium	5080		ng/l	5000.0		102	90-110			
Cadmium	20500		ng/l	20000		102	90-110			
Chromium	238000		ng/l	240000		99.1	90-110			

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2407074 - B4G1802										
Initial Cal Check (2407074-ICV1) Continu				Prepared & Analyzed: 07/19/24						
Cobalt	48000		ng/l	50000		96.0	90-110			
Copper	2.04E6		ng/l	2.0000E6		102	90-110			
Lead	197000		ng/l	200000		98.7	90-110			
Manganese	499000		ng/l	500000		99.7	90-110			
Molybdenum	46800		ng/l	50000		93.6	90-110			
Nickel	119000		ng/l	120000		98.8	90-110			
Selenium	20200		ng/l	20000		101	90-110			
Thallium	500		ng/l	500.00		100	90-110			
Vanadium	19800		ng/l	20000		98.9	90-110			
Zinc	513000		ng/l	500000		103	90-110			
Interference Check A (2407074-IFA1)				Prepared & Analyzed: 07/19/24						
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	308000		ng/l	300000		103	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
Interference Check B (2407074-IFB1)				Prepared & Analyzed: 07/19/24						
Antimony	20100		ng/l	20000		101	80-120			
Arsenic	20200		ng/l	20000		101	80-120			
Barium	202000		ng/l	200000		101	80-120			
Beryllium	4820		ng/l	5000.0		96.3	80-120			
Cadmium	19100		ng/l	20000		95.4	80-120			
Chromium	253000		ng/l	240000		105	80-120			
Cobalt	49400		ng/l	50000		98.7	80-120			
Copper	1.88E6		ng/l	2.0000E6		94.1	80-120			
Lead	204000		ng/l	200000		102	80-120			
Manganese	521000		ng/l	500000		104	80-120			

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2407074 - B4G1802										
Interference Check B (2407074-IFB1) Co					Prepared & Analyzed: 07/19/24					
Molybdenum	349000		ng/l	350000		99.6	80-120			
Nickel	116000		ng/l	120000		96.5	80-120			
Selenium	18600		ng/l	20000		92.9	80-120			
Thallium	520		ng/l	500.00		104	80-120			
Vanadium	21700		ng/l	20000		108	80-120			
Zinc	450000		ng/l	500000		90.0	80-120			
Batch B4G1802 - ICP-MS Extraction										
Blank (B4G1802-BLK1)					Prepared & Analyzed: 07/18/24					
Antimony	ND	0.0386	ng/m³ Air							SL, U
Arsenic	ND	0.00937	ng/m³ Air							U
Barium	ND	1.07	ng/m³ Air							U
Beryllium	ND	0.00320	ng/m³ Air							U
Cadmium	ND	0.0741	ng/m³ Air							U
Chromium	ND	2.21	ng/m³ Air							U
Cobalt	ND	0.0436	ng/m³ Air							U
Copper	ND	2.63	ng/m³ Air							U
Lead	ND	0.214	ng/m³ Air							U
Manganese	ND	1.89	ng/m³ Air							U
Molybdenum	ND	0.359	ng/m³ Air							U
Nickel	ND	0.652	ng/m³ Air							U
Selenium	ND	0.00896	ng/m³ Air							LJ, QX, U
Thallium	ND	5.89E-4	ng/m³ Air							U
Vanadium	ND	0.0529	ng/m³ Air							U
Zinc	ND	76.8	ng/m³ Air							U
LCS (B4G1802-BS1)					Prepared & Analyzed: 07/18/24					
Antimony	0.491	0.0386	ng/m³ Air	1.3829		35.5	80-120			SL
Arsenic	2.66	0.00937	ng/m³ Air	2.7658		96.3	80-120			
Barium	27.7	1.07	ng/m³ Air	27.658		100	80-120			
Beryllium	1.35	0.00320	ng/m³ Air	1.3829		97.3	80-120			
Cadmium	1.40	0.0741	ng/m³ Air	1.3829		101	80-120			
Chromium	15.1	2.21	ng/m³ Air	13.829		109	80-120			
Cobalt	1.39	0.0436	ng/m³ Air	1.3829		100	80-120			
Copper	29.1	2.63	ng/m³ Air	27.658		105	80-120			
Lead	13.5	0.214	ng/m³ Air	13.829		97.6	80-120			
Manganese	8.39	1.89	ng/m³ Air	8.2975		101	80-120			
Molybdenum	1.54	0.359	ng/m³ Air	1.3829		111	80-120			
Nickel	3.05	0.652	ng/m³ Air	2.7658		110	80-120			
Selenium	2.72	0.00896	ng/m³ Air	2.7658		98.5	80-120			LJ, QX

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4G1802 - ICP-MS Extraction										
LCS (B4G1802-BS1) Continued					Prepared & Analyzed: 07/18/24					
Thallium	0.135	5.89E-4	ng/m³ Air	0.13829		97.3	80-120			
Vanadium	2.69	0.0529	ng/m³ Air	2.7658		97.3	80-120			
Zinc	91.8	76.8	ng/m³ Air	82.975		111	80-120			
LCS (B4G1802-BS2)					Prepared & Analyzed: 07/18/24					
Antimony	0.513	0.0386	ng/m³ Air	1.3829		37.1	80-120			SL
Arsenic	2.68	0.00937	ng/m³ Air	2.7658		96.8	80-120			
Barium	28.1	1.07	ng/m³ Air	27.658		102	80-120			
Beryllium	1.35	0.00320	ng/m³ Air	1.3829		97.8	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	1.41	0.0436	ng/m³ Air	1.3829		102	80-120			
Copper	29.7	2.63	ng/m³ Air	27.658		107	80-120			
Lead	13.5	0.214	ng/m³ Air	13.829		97.5	80-120			
Manganese	8.50	1.89	ng/m³ Air	8.2975		102	80-120			
Molybdenum	1.59	0.359	ng/m³ Air	1.3829		115	80-120			
Nickel	3.15	0.652	ng/m³ Air	2.7658		114	80-120			
Selenium	2.77	0.00896	ng/m³ Air	2.7658		100	80-120			LJ, QX
Thallium	0.137	5.89E-4	ng/m³ Air	0.13829		99.4	80-120			
Vanadium	2.71	0.0529	ng/m³ Air	2.7658		98.1	80-120			
Zinc	93.0	76.8	ng/m³ Air	82.975		112	80-120			
Duplicate (B4G1802-DUP1)		**Source: 4071551-16**			Prepared & Analyzed: 07/18/24					
Antimony	0.137	0.0311	ng/m³ Air		0.137			0.642	10	SL
Arsenic	0.516	0.00756	ng/m³ Air		0.516			0.0145	10	
Barium	6.78	0.863	ng/m³ Air		5.90			13.8	10	
Beryllium	0.0203	0.00258	ng/m³ Air		0.0195			3.72	10	
Cadmium	ND	0.0598	ng/m³ Air		0.0624				10	U
Chromium	2.76	1.78	ng/m³ Air		2.55			7.85	10	
Cobalt	0.482	0.0352	ng/m³ Air		0.464			3.89	10	
Copper	45.9	2.12	ng/m³ Air		45.0			1.95	10	
Lead	1.49	0.173	ng/m³ Air		1.45			3.15	10	
Manganese	15.9	1.52	ng/m³ Air		15.2			4.21	10	
Molybdenum	1.83	0.290	ng/m³ Air		1.81			0.891	10	
Nickel	1.54	0.526	ng/m³ Air		1.45			6.11	10	
Selenium	0.191	0.00723	ng/m³ Air		0.196			3.03	10	LJ, QX
Thallium	0.00155	4.75E-4	ng/m³ Air		0.00156			0.905	10	
Vanadium	1.74	0.0427	ng/m³ Air		1.64			6.08	10	
Zinc	ND	61.9	ng/m³ Air		ND				10	U
Duplicate (B4G1802-DUP2)		**Source: 4071551-21**			Prepared & Analyzed: 07/18/24					

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4G1802 - ICP-MS Extraction										
Duplicate (B4G1802-DUP2) Continued			**Source: 4071551-21**		Prepared & Analyzed: 07/18/24					
Antimony	ND	0.0317	ng/m³ Air		ND				10	SL, U
Arsenic	0.220	0.00769	ng/m³ Air		0.207			6.25	10	
Barium	2.63	0.878	ng/m³ Air		2.60			1.43	10	
Beryllium	0.0225	0.00263	ng/m³ Air		0.0229			2.09	10	
Cadmium	ND	0.0608	ng/m³ Air		ND				10	U
Chromium	2.80	1.81	ng/m³ Air		2.89			3.28	10	
Cobalt	0.443	0.0358	ng/m³ Air		0.423			4.60	10	
Copper	41.3	2.16	ng/m³ Air		41.0			0.756	10	
Lead	0.464	0.176	ng/m³ Air		0.621			28.9	10	
Manganese	11.2	1.55	ng/m³ Air		10.8			3.18	10	
Molybdenum	2.09	0.295	ng/m³ Air		2.13			1.66	10	
Nickel	1.20	0.535	ng/m³ Air		1.32			9.39	10	
Selenium	0.126	0.00735	ng/m³ Air		0.119			5.82	10	LJ, QX
Thallium	6.82E-4	4.83E-4	ng/m³ Air		7.95E-4			15.3	10	
Vanadium	1.04	0.0434	ng/m³ Air		1.02			1.97	10	
Zinc	ND	63.0	ng/m³ Air		ND				10	U
Duplicate (B4G1802-DUP3)			**Source: 4071551-06**		Prepared & Analyzed: 07/18/24					
Antimony	0.152	0.0332	ng/m³ Air		0.152			0.286	10	SL
Arsenic	2.16	0.00806	ng/m³ Air		2.17			0.307	10	
Barium	88.0	0.921	ng/m³ Air		87.9			0.127	10	
Beryllium	0.0717	0.00275	ng/m³ Air		0.0706			1.61	10	
Cadmium	ND	0.0638	ng/m³ Air		ND				10	U, LL, QX
Chromium	15.2	1.90	ng/m³ Air		14.9			2.06	10	
Cobalt	2.99	0.0375	ng/m³ Air		2.93			1.73	10	
Copper	240	2.26	ng/m³ Air		236			1.42	10	
Lead	ND	0.184	ng/m³ Air		ND				10	U, LL, QX
Manganese	75.0	1.63	ng/m³ Air		74.1			1.26	10	
Molybdenum	4.36	0.309	ng/m³ Air		4.37			0.176	10	
Nickel	5.83	0.561	ng/m³ Air		5.75			1.41	10	
Selenium	0.356	0.00771	ng/m³ Air		0.342			3.87	10	LJ, QX
Thallium	ND	5.07E-4	ng/m³ Air		ND				10	U, LL, QX
Vanadium	8.71	0.0455	ng/m³ Air		8.55			1.84	10	
Zinc	ND	66.1	ng/m³ Air		ND				10	U
Duplicate (B4G1802-DUP4)			**Source: 4071551-31**		Prepared: 07/18/24 Analyzed: 07/19/24					
Antimony	0.106	0.0348	ng/m³ Air		0.105			0.631	10	SL
Arsenic	1.20	0.00844	ng/m³ Air		1.17			2.36	10	
Barium	10.6	0.963	ng/m³ Air		10.6			0.854	10	
Beryllium	0.0594	0.00288	ng/m³ Air		0.0606			1.96	10	

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4G1802 - ICP-MS Extraction										
Duplicate (B4G1802-DUP4) Continued			**Source: 4071551-31**		Prepared: 07/18/24 Analyzed: 07/19/24					
Cadmium	ND	0.0667	ng/m³ Air		ND				10	U, LL, QX
Chromium	7.80	1.99	ng/m³ Air		7.59			2.79	10	
Cobalt	1.75	0.0393	ng/m³ Air		1.73			1.60	10	
Copper	37.0	2.37	ng/m³ Air		36.5			1.37	10	
Lead	2.42	0.193	ng/m³ Air		2.44			0.487	10	
Manganese	63.1	1.70	ng/m³ Air		61.8			2.17	10	
Molybdenum	1.10	0.323	ng/m³ Air		1.10			0.413	10	
Nickel	4.89	0.587	ng/m³ Air		4.80			1.90	10	
Selenium	0.320	0.00807	ng/m³ Air		0.297			7.63	10	LJ, QX
Thallium	0.00253	5.30E-4	ng/m³ Air		0.00250			1.34	10	
Vanadium	4.26	0.0476	ng/m³ Air		4.16			2.36	10	
Zinc	ND	69.1	ng/m³ Air		ND				10	U
Duplicate (B4G1802-DUP5)			**Source: 4071551-06R**		Prepared: 07/18/24 Analyzed: 07/19/24					
Antimony	0.156	0.0664	ng/m³ Air		0.155			0.582	10	D
Arsenic	2.27	0.0161	ng/m³ Air		2.26			0.278	10	D
Barium	95.7	1.84	ng/m³ Air		94.9			0.865	10	D
Beryllium	0.0723	0.00551	ng/m³ Air		0.0701			3.09	10	D
Cadmium	ND	0.128	ng/m³ Air		ND				10	U, D
Chromium	15.8	3.80	ng/m³ Air		15.7			0.242	10	D
Cobalt	3.10	0.0750	ng/m³ Air		3.10			0.186	10	D
Copper	251	4.53	ng/m³ Air		248			1.18	10	D
Lead	ND	0.368	ng/m³ Air		ND				10	U, D
Manganese	78.3	3.25	ng/m³ Air		78.1			0.339	10	D
Molybdenum	5.21	0.618	ng/m³ Air		5.15			1.31	10	D
Nickel	6.11	1.12	ng/m³ Air		6.11			0.0109	10	D
Selenium	0.396	0.0154	ng/m³ Air		0.384			2.99	10	D
Thallium	ND	0.00101	ng/m³ Air		ND				10	U, D
Vanadium	8.95	0.0910	ng/m³ Air		8.97			0.186	10	D
Zinc	ND	132	ng/m³ Air		ND				10	U, D
Duplicate (B4G1802-DUP6)			**Source: 4071551-31R**		Prepared: 07/18/24 Analyzed: 07/19/24					
Antimony	0.106	0.0695	ng/m³ Air		0.108			1.42	10	D
Arsenic	1.21	0.0169	ng/m³ Air		1.21			0.619	10	D
Barium	11.1	1.93	ng/m³ Air		11.0			0.507	10	D
Beryllium	0.0591	0.00576	ng/m³ Air		0.0612			3.42	10	D
Cadmium	ND	0.133	ng/m³ Air		ND				10	U, D
Chromium	7.62	3.98	ng/m³ Air		7.62			0.0178	10	D
Cobalt	1.72	0.0785	ng/m³ Air		1.73			0.722	10	D
Copper	36.5	4.74	ng/m³ Air		36.9			1.01	10	D

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

FILE #: 4205.00.003.001
REPORTED: 07/24/24 14:27
SUBMITTED: 07/15/24
AQS SITE CODE:
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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4G1802 - ICP-MS Extraction										
Duplicate (B4G1802-DUP6) Continued		**Source: 4071551-31R**		Prepared: 07/18/24 Analyzed: 07/19/24						
Lead	2.41	0.385	ng/m³ Air		2.42			0.657	10	D
Manganese	61.8	3.40	ng/m³ Air		62.3			0.679	10	D
Molybdenum	1.22	0.646	ng/m³ Air		1.24			1.00	10	D
Nickel	4.86	1.17	ng/m³ Air		4.90			0.649	10	D
Selenium	0.336	0.0161	ng/m³ Air		0.334			0.429	10	D
Thallium	0.00240	0.00106	ng/m³ Air		0.00244			1.87	10	D
Vanadium	4.18	0.0953	ng/m³ Air		4.13			1.15	10	D
Zinc	ND	138	ng/m³ Air		ND				10	U, D
Matrix Spike (B4G1802-MS1)		**Source: 4071551-16**		Prepared & Analyzed: 07/18/24						
Antimony	0.722	0.0311	ng/m³ Air	1.1153	0.137	52.5	80-120			SL
Arsenic	2.59	0.00756	ng/m³ Air	2.2306	0.516	93.0	80-120			
Barium	27.2	0.863	ng/m³ Air	22.306	5.90	95.4	80-120			
Beryllium	1.11	0.00258	ng/m³ Air	1.1153	0.0195	97.6	80-120			
Cadmium	1.11	0.0598	ng/m³ Air	1.1153	0.0624	93.6	80-120			
Chromium	13.8	1.78	ng/m³ Air	11.153	2.55	101	80-120			
Cobalt	1.57	0.0352	ng/m³ Air	1.1153	0.464	98.9	80-120			
Copper	70.4	2.12	ng/m³ Air	22.306	45.0	114	80-120			
Lead	12.2	0.173	ng/m³ Air	11.153	1.45	96.7	80-120			
Manganese	21.9	1.52	ng/m³ Air	6.6919	15.2	99.9	80-120			
Molybdenum	2.86	0.290	ng/m³ Air	1.1153	1.81	93.8	80-120			
Nickel	3.69	0.526	ng/m³ Air	2.2306	1.45	101	80-120			
Selenium	2.29	0.00723	ng/m³ Air	2.2306	0.196	93.7	80-120			LJ, QX
Thallium	0.108	4.75E-4	ng/m³ Air	0.11153	0.00156	95.8	80-120			
Vanadium	3.86	0.0427	ng/m³ Air	2.2306	1.64	99.6	80-120			
Zinc	88.9	61.9	ng/m³ Air	66.919	ND	133	80-120			
Matrix Spike (B4G1802-MS2)		**Source: 4071551-21**		Prepared & Analyzed: 07/18/24						
Antimony	0.485	0.0317	ng/m³ Air	1.1349	ND	42.8	80-120			SL
Arsenic	2.32	0.00769	ng/m³ Air	2.2697	0.207	93.3	80-120			
Barium	24.2	0.878	ng/m³ Air	22.697	2.60	95.3	80-120			
Beryllium	1.13	0.00263	ng/m³ Air	1.1349	0.0229	97.5	80-120			
Cadmium	1.13	0.0608	ng/m³ Air	1.1349	ND	99.9	80-120			
Chromium	13.8	1.81	ng/m³ Air	11.349	2.89	96.1	80-120			
Cobalt	1.53	0.0358	ng/m³ Air	1.1349	0.423	97.8	80-120			
Copper	64.3	2.16	ng/m³ Air	22.697	41.0	103	80-120			
Lead	11.7	0.176	ng/m³ Air	11.349	0.621	97.4	80-120			
Manganese	17.3	1.55	ng/m³ Air	6.8091	10.8	95.3	80-120			
Molybdenum	3.05	0.295	ng/m³ Air	1.1349	2.13	80.9	80-120			
Nickel	3.47	0.535	ng/m³ Air	2.2697	1.32	94.8	80-120			

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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4G1802 - ICP-MS Extraction										
Matrix Spike (B4G1802-MS2) Continued Source: 4071551-21 Prepared & Analyzed: 07/18/24										
Selenium	2.29	0.00735	ng/m³ Air	2.2697	0.119	95.6	80-120			LJ, QX
Thallium	0.110	4.83E-4	ng/m³ Air	0.11349	7.95E-4	96.1	80-120			
Vanadium	3.22	0.0434	ng/m³ Air	2.2697	1.02	97.1	80-120			
Zinc	83.5	63.0	ng/m³ Air	68.091	ND	123	80-120			
Matrix Spike Dup (B4G1802-MSD1) Source: 4071551-16 Prepared & Analyzed: 07/18/24										
Antimony	0.681	0.0311	ng/m³ Air	1.1153	0.137	48.9	80-120	5.77	20	SL
Arsenic	2.56	0.00756	ng/m³ Air	2.2306	0.516	91.8	80-120	1.03	20	
Barium	27.0	0.863	ng/m³ Air	22.306	5.90	94.5	80-120	0.699	20	
Beryllium	1.11	0.00258	ng/m³ Air	1.1153	0.0195	97.9	80-120	0.239	20	
Cadmium	1.10	0.0598	ng/m³ Air	1.1153	0.0624	93.0	80-120	0.588	20	
Chromium	13.7	1.78	ng/m³ Air	11.153	2.55	100	80-120	0.928	20	
Cobalt	1.55	0.0352	ng/m³ Air	1.1153	0.464	97.5	80-120	1.00	20	
Copper	70.5	2.12	ng/m³ Air	22.306	45.0	114	80-120	0.113	20	
Lead	12.2	0.173	ng/m³ Air	11.153	1.45	96.1	80-120	0.586	20	
Manganese	21.4	1.52	ng/m³ Air	6.6919	15.2	92.6	80-120	2.28	20	
Molybdenum	2.85	0.290	ng/m³ Air	1.1153	1.81	92.9	80-120	0.343	20	
Nickel	3.66	0.526	ng/m³ Air	2.2306	1.45	99.1	80-120	0.950	20	
Selenium	2.29	0.00723	ng/m³ Air	2.2306	0.196	93.9	80-120	0.140	20	LJ, QX
Thallium	0.106	4.75E-4	ng/m³ Air	0.11153	0.00156	93.8	80-120	2.01	20	
Vanadium	3.79	0.0427	ng/m³ Air	2.2306	1.64	96.6	80-120	1.73	20	
Zinc	84.2	61.9	ng/m³ Air	66.919	ND	126	80-120	5.39	20	
Matrix Spike Dup (B4G1802-MSD2) Source: 4071551-21 Prepared & Analyzed: 07/18/24										
Antimony	0.488	0.0317	ng/m³ Air	1.1349	ND	43.0	80-120	0.520	20	SL
Arsenic	2.33	0.00769	ng/m³ Air	2.2697	0.207	93.7	80-120	0.401	20	
Barium	24.5	0.878	ng/m³ Air	22.697	2.60	96.5	80-120	1.07	20	
Beryllium	1.13	0.00263	ng/m³ Air	1.1349	0.0229	97.6	80-120	0.0671	20	
Cadmium	1.14	0.0608	ng/m³ Air	1.1349	ND	100	80-120	0.326	20	
Chromium	13.9	1.81	ng/m³ Air	11.349	2.89	97.4	80-120	1.02	20	
Cobalt	1.55	0.0358	ng/m³ Air	1.1349	0.423	99.4	80-120	1.16	20	
Copper	63.7	2.16	ng/m³ Air	22.697	41.0	100	80-120	0.986	20	
Lead	11.7	0.176	ng/m³ Air	11.349	0.621	98.0	80-120	0.631	20	
Manganese	17.6	1.55	ng/m³ Air	6.8091	10.8	100	80-120	1.88	20	
Molybdenum	3.05	0.295	ng/m³ Air	1.1349	2.13	81.7	80-120	0.283	20	
Nickel	3.46	0.535	ng/m³ Air	2.2697	1.32	94.3	80-120	0.295	20	
Selenium	2.28	0.00735	ng/m³ Air	2.2697	0.119	95.2	80-120	0.351	20	LJ, QX
Thallium	0.112	4.83E-4	ng/m³ Air	0.11349	7.95E-4	97.7	80-120	1.68	20	
Vanadium	3.23	0.0434	ng/m³ Air	2.2697	1.02	97.4	80-120	0.221	20	
Zinc	82.3	63.0	ng/m³ Air	68.091	ND	121	80-120	1.38	20	

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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 B4G1802 - ICP-MS Extraction										
Post Spike (B4G1802-PS1)		**Source: 4071551-16**		Prepared & Analyzed: 07/18/24						
Antimony	0.358	0.0311	ng/m³ Air	0.22306	0.137	99.3	75-125			SL
Arsenic	1.55	0.00756	ng/m³ Air	1.1153	0.516	93.2	75-125			
Barium	8.00	0.863	ng/m³ Air	2.2306	5.90	94.0	75-125			
Beryllium	0.240	0.00258	ng/m³ Air	0.22306	0.0195	99.0	75-125			
Cadmium	0.170	0.0598	ng/m³ Air	0.11153	0.0624	96.3	75-125			
Chromium	3.71	1.78	ng/m³ Air	1.1153	2.55	105	75-125			
Cobalt	0.682	0.0352	ng/m³ Air	0.22306	0.464	97.8	75-125			
Copper	57.3	2.12	ng/m³ Air	11.153	45.0	110	75-125			
Lead	23.3	0.173	ng/m³ Air	22.306	1.45	97.9	75-125			
Manganese	17.7	1.52	ng/m³ Air	2.2306	15.2	111	75-125			
Molybdenum	2.79	0.290	ng/m³ Air	1.1153	1.81	87.7	75-125			
Nickel	3.71	0.526	ng/m³ Air	2.2306	1.45	101	75-125			
Selenium	1.22	0.00723	ng/m³ Air	1.1153	0.196	91.8	75-125			LJ, QX
Thallium	0.0545	4.75E-4	ng/m³ Air	5.5765E-2	0.00156	94.9	75-125			
Vanadium	2.76	0.0427	ng/m³ Air	1.1153	1.64	101	75-125			
Zinc	ND	61.9	ng/m³ Air	22.306	ND		75-125			U
Post Spike (B4G1802-PS2)		**Source: 4071551-21**		Prepared & Analyzed: 07/18/24						
Antimony	0.260	0.0317	ng/m³ Air	0.22697	ND	115	75-125			SL
Arsenic	1.27	0.00769	ng/m³ Air	1.1349	0.207	93.6	75-125			
Barium	4.74	0.878	ng/m³ Air	2.2697	2.60	94.3	75-125			
Beryllium	0.246	0.00263	ng/m³ Air	0.22697	0.0229	98.3	75-125			
Cadmium	0.124	0.0608	ng/m³ Air	0.11349	ND	109	75-125			
Chromium	4.04	1.81	ng/m³ Air	1.1349	2.89	101	75-125			
Cobalt	0.643	0.0358	ng/m³ Air	0.22697	0.423	96.9	75-125			
Copper	52.9	2.16	ng/m³ Air	11.349	41.0	105	75-125			
Lead	23.3	0.176	ng/m³ Air	22.697	0.621	99.7	75-125			
Manganese	13.1	1.55	ng/m³ Air	2.2697	10.8	101	75-125			
Molybdenum	3.06	0.295	ng/m³ Air	1.1349	2.13	82.0	75-125			
Nickel	3.61	0.535	ng/m³ Air	2.2697	1.32	101	75-125			
Selenium	1.19	0.00735	ng/m³ Air	1.1349	0.119	94.6	75-125			LJ, QX
Thallium	0.0582	4.83E-4	ng/m³ Air	5.6743E-2	7.95E-4	101	75-125			
Vanadium	2.13	0.0434	ng/m³ Air	1.1349	1.02	98.1	75-125			
Zinc	ND	63.0	ng/m³ Air	22.697	ND		75-125			U
Dilution Check (B4G1802-SRL1)		**Source: 4071551-16**		Prepared & Analyzed: 07/18/24						
Antimony	ND	0.156	ng/m³ Air		ND				10	U, SL
Arsenic	0.535	0.0378	ng/m³ Air		0.516			3.61	10	
Barium	6.11	4.31	ng/m³ Air		5.90			3.49	10	
Beryllium	0.0193	0.0129	ng/m³ Air		0.0195			1.11	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 B4G1802 - ICP-MS Extraction										
Dilution Check (B4G1802-SRL1) ContinueSource: 4071551-16 Prepared & Analyzed: 07/18/24										
Cadmium	ND	0.299	ng/m³ Air		ND				10	U
Chromium	ND	8.91	ng/m³ Air		ND				10	U
Cobalt	0.484	0.176	ng/m³ Air		0.464			4.20	10	
Copper	47.6	10.6	ng/m³ Air		45.0			5.56	10	
Lead	1.46	0.863	ng/m³ Air		1.45			1.07	10	
Manganese	15.8	7.62	ng/m³ Air		15.2			3.67	10	
Molybdenum	1.95	1.45	ng/m³ Air		1.81			7.43	10	
Nickel	ND	2.63	ng/m³ Air		ND				10	U
Selenium	0.196	0.0361	ng/m³ Air		0.196			0.0356	10	LJ, QX
Thallium	ND	0.00238	ng/m³ Air		ND				10	U
Vanadium	1.67	0.213	ng/m³ Air		1.64			1.94	10	
Zinc	ND	310	ng/m³ Air		ND				10	U
Dilution Check (B4G1802-SRL2) Source: 4071551-21 Prepared & Analyzed: 07/18/24										
Antimony	ND	0.158	ng/m³ Air		ND				10	SL, U
Arsenic	0.211	0.0384	ng/m³ Air		0.207			1.97	10	
Barium	ND	4.39	ng/m³ Air		ND				10	U
Beryllium	0.0213	0.0131	ng/m³ Air		0.0229			7.43	10	
Cadmium	ND	0.304	ng/m³ Air		ND				10	U
Chromium	ND	9.07	ng/m³ Air		ND				10	U
Cobalt	0.439	0.179	ng/m³ Air		0.423			3.60	10	
Copper	42.1	10.8	ng/m³ Air		41.0			2.75	10	
Lead	ND	0.878	ng/m³ Air		ND				10	U
Manganese	11.1	7.75	ng/m³ Air		10.8			2.14	10	
Molybdenum	2.19	1.47	ng/m³ Air		2.13			3.03	10	
Nickel	ND	2.68	ng/m³ Air		ND				10	U
Selenium	0.128	0.0368	ng/m³ Air		0.119			7.26	10	LJ, QX
Thallium	ND	0.00242	ng/m³ Air		ND				10	U
Vanadium	1.01	0.217	ng/m³ Air		1.02			0.650	10	
Zinc	ND	315	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.
LL	Analyte identified; Reported value may be biased low.
LJ	Identification of analyte is acceptable; reported value is an estimate.
FB-01	Analyte exceeds Field Blank criteria.
D	This result obtained by dilution.
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 07/24/2024 and Shanna Vasser 7/24/2024
Laboratory: Eastern Research Group – Morrisville, NC
Collection date(s): 07/04/2024 – 07/10/2024
Report No: 4071551

√	1.	Chain of custody (CoC) documentation is present.
√	2.	Sample receipt condition information is present and acceptable.
√	3.	Laboratory conducting the analysis is identified.
X	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, and vanadium in MFL-FB01-071024-HM and for arsenic in MFL-LB01-070424-HM.

Notes:

7. MFL-AM01-070524-HM was analyzed at a two-fold dilution for antimony, arsenic, barium, molybdenum, and selenium. MFL-AM01-071024-HM was analyzed at a two-fold dilution for arsenic, lead, molybdenum, selenium, and thallium. MFL-AM02-071024-HM was analyzed at a two-fold dilution for arsenic, cadmium, molybdenum, selenium, and vanadium. MFL-AM04-071024-HM was analyzed at a two-fold dilution for arsenic, cadmium, molybdenum, and selenium.