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

July 25 through July 31, 2024
[Report Updated: September 5, 2024]

Tetra Tech, Inc. (Tetra Tech) prepared a Community Air Monitoring and Sampling Plan (CAMSP) to address community air monitoring during debris removal operations in response to the 2023 Maui Wildfires. Air monitoring and sampling occurred from July 25 through July 31, 2024, at the four community locations across Lahaina listed below and shown on **Figure 1**:

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

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

Air quality monitoring for particulate matter was collected at all four community locations over a 24-hour period each day in accordance with the CAMSP. Ambient air monitoring was performed to assess the presence of airborne particulates with a particle size diameter of 10 micrometers (µm), which is the size that is recognized as being small enough to be inhaled into a person's lungs. This particle size diameter is recognized for health evaluations and is identified as "PM_{10}". Monitoring for PM_{10} was conducted 24 hours a day, 7 days a week from July 25 through July 31 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 (µg/m^3) screening level.

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

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

Air Monitoring Results

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

Air Sampling Results

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

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

- WW Pump Station #4 on July 30

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

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

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

Meteorological Summary

Overall wind conditions during this weekly event averaged 1.1 miles per hour originating from a generally south-southeast direction. **Table 3** summarizes meteorological data**.**

Quality Control Summary

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

Air monitoring proceeded by use of Met One Instruments, Inc., environmental beta attenuation mass monitors (E-BAM) to allow comparison to NAAQS for particulates. E-BAMs are factory-calibrated annually and do not require daily calibration, except for a leak check and a flow audit, which were performed before monitoring according to the manufacturer's procedures.

Collection of samples to be analyzed for asbestos occurred by use of a Casella Vortex 3 or similar air sampling pump. Sampling flow rates are determined and documented by pre- and post- calibration of each sampling pump according to a primary calibration standard. Calibration and sampling accorded with Tetra Tech SOPs 064-2, "Calibration of Air Sampling Pump," and 073-3, "Air Quality Monitoring"; and EPA Environmental Response Team (ERT) SOPs 2008, "General Air Monitoring and Sampling Guidelines," and 2015 "Asbestos Air Sampling," included in the CAMSP.

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

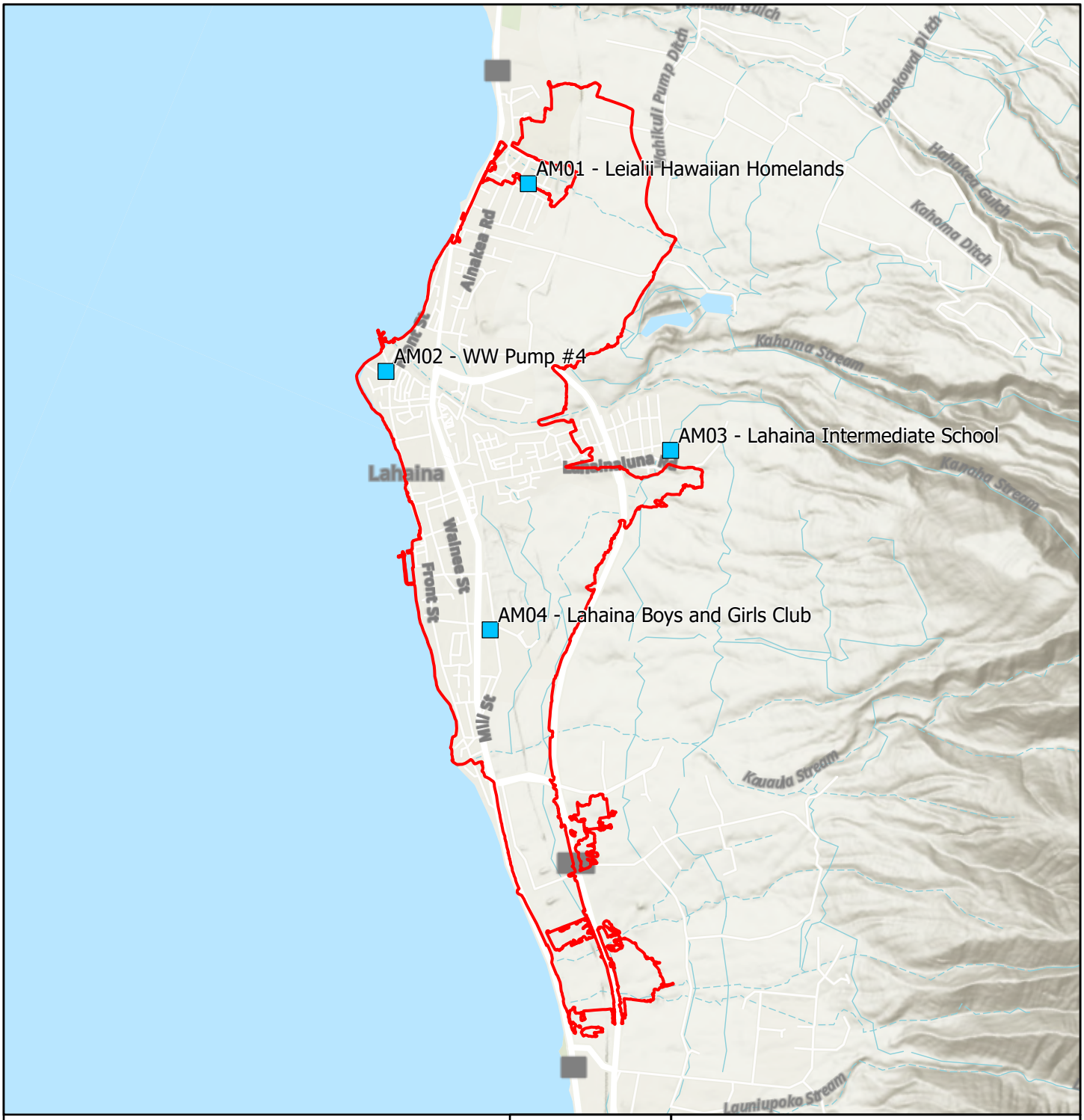
- EPA Compendium Method IO-2.1, Sampling of Ambient Air for Total Suspended Particulate Matter (SPM) and for PM_{10} by Use of a High Volume (HV) Sampler
- EPA Compendium Method IO-3.5: Compendium of Methods for Determination of Inorganic Compounds in Ambient Air: Determination of Metals in Ambient Particulate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

- SOPs for Lead Monitoring by Use of a Total Suspended Particulate (TSP) High Volume Sampler.

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

Following receipt of air sampling results from off-site analytical laboratories, analytical data are maintained in an electronic database and compared to SSALs. Level 1 data verification of all analytical data occurs, and an industrial hygienist reviews results.

Attachments



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 25 through July 31, 2024
[Report Updated: September 5, 2024]

Screening Level		TWA Results 150 ($\mu g/m^3$)
7/25/2024	Leialii Hawaiian Homelands (AM-01)	11
	WW Pump Station #4 (AM-02)	9.5
	Lahaina Intermediate School (AM-03)	15
	Lahaina Boys & Girls Club (AM-04)	14
7/26/2024	Leialii Hawaiian Homelands (AM-01)	15
	WW Pump Station #4 (AM-02)	7.9
	Lahaina Intermediate School (AM-03)	11
	Lahaina Boys & Girls Club (AM-04)	11
7/27/2024	Leialii Hawaiian Homelands (AM-01)	6.5
	WW Pump Station #4 (AM-02)	5.9
	Lahaina Intermediate School (AM-03)	13
	Lahaina Boys & Girls Club (AM-04)	9.0
7/28/2024	Leialii Hawaiian Homelands (AM-01)	7.4
	WW Pump Station #4 (AM-02)	6.0
	Lahaina Intermediate School (AM-03)	12
	Lahaina Boys & Girls Club (AM-04)	8.5
7/29/2024	Leialii Hawaiian Homelands (AM-01)	7.8
	WW Pump Station #4 (AM-02)	6.0
	Lahaina Intermediate School (AM-03)	10
	Lahaina Boys & Girls Club (AM-04)	9.9
7/30/2024	Leialii Hawaiian Homelands (AM-01)	10
	WW Pump Station #4 (AM-02)	5.7
	Lahaina Intermediate School (AM-03)	8.2
	Lahaina Boys & Girls Club (AM-04)	7.3
7/31/2024	Leialii Hawaiian Homelands (AM-01)	6.6
	WW Pump Station #4 (AM-02)	7.9
	Lahaina Intermediate School (AM-03)	11
	Lahaina Boys & Girls Club (AM-04)	17

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 25 through July 31, 2024
[Report Updated: September 5, 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
7/25/2024	Leialii Hawaiian Homelands (AM-01)	<0.0024	0.0000813	0.000547	0.00581	0.0000197	ND	0.00422	0.000750	0.190	0.000527	0.0203	0.0119	0.00235	0.000344	0.00000245	0.00257	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.000172	0.000357	0.00456	0.0000158	ND	0.00253	0.000476	0.0345	0.00112	0.0149	0.00194	0.00136	0.000340	0.00000253	0.00174	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000724	0.000435	0.00395	0.0000266	ND	0.00352	0.000672	0.0631	0.000630	0.0165	0.00373	0.00230	0.000351	0.00000268	0.00156	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0024	0.0000873	0.000341	0.00372	0.0000157	ND	0.00319	0.000459	0.0481	0.000764	0.0155	0.00340	0.00147	0.000343	0.00000225	0.00157	ND
7/26/2024	Leialii Hawaiian Homelands (AM-01)	<0.0024	0.0000656	0.00140	0.00844	0.0000388	ND	0.00720	0.00169	0.157	0.000503	0.0415	0.00845	0.00347	0.000292	0.00000204	0.00482	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.0000948	0.000347	0.00485	0.0000155	ND	0.00334	0.000512	0.0365	0.000883	0.0150	0.00214	0.00150	0.000198	0.00000117	0.00163	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000490	0.000252	0.00342	0.0000391	ND	0.00351	0.000600	0.0354	0.000527	0.0154	0.00283	0.00159	0.000190	0.00000119	0.00145	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0024	0.000108	0.000538	0.00551	0.0000231	ND	0.00404	0.000786	0.0528	0.00118	0.0251	0.00400	0.00194	0.000226	0.00000145	0.00211	ND
7/27/2024	Leialii Hawaiian Homelands (AM-01)	<0.0024	0.0000674	0.00202	0.0136	0.0000735	ND	0.0121	0.00307	0.119	0.000667	0.0726	0.00491	0.00563	0.000395	0.00000283	0.00843	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.0000915	0.000726	0.00892	0.0000278	ND	0.00458	0.00150	0.0356	0.00158	0.0672	0.00183	0.00246	0.000243	0.00000377	0.00313	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000470	0.000266	0.00315	0.0000341	ND	0.00343	0.000557	0.0358	0.000400	0.0138	0.00258	0.00149	0.000138	0.000000906	0.00141	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0024	0.0000704	0.000591	0.00355	0.0000171	ND	0.00314	0.000578	0.0307	0.000978	0.0164	0.00176	0.00141	0.000149	0.000000924	0.00138	ND
7/28/2024	Leialii Hawaiian Homelands (AM-01)	<0.0024	0.0000586	0.000380	0.00323	0.00000996	ND	0.00247	0.000336	0.194	0.000266	0.0100	0.00901	0.00112	0.000142	0.000000667	0.00125	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.0000771	0.000250	0.00308	0.00000902	ND	0.00192	0.000264	0.0317	0.000578	0.00838	0.00179	0.000869	0.000143	0.000000541	0.000999	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000428	0.000175	0.00252	0.0000169	ND	0.00303	0.000336	0.0533	0.000402	0.00936	0.00397	0.00148	0.000148	0.000000714	0.00108	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0024	0.0000695	0.000266	0.00339	0.00000921	ND	0.00288	0.000336	0.0482	0.000672	0.0102	0.00267	0.00143	0.000163	0.000000633	0.00110	ND
7/29/2024	Leialii Hawaiian Homelands (AM-01)	<0.0024	0.0000453	0.000588	0.00429	0.0000139	ND	0.00362	0.000640	0.169	0.000316	0.0159	0.00785	0.00159	0.000160	0.000000876	0.00196	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.000110	0.000306	0.00442	0.00000944	ND	0.00212	0.000316	0.0264	0.000684	0.00947	0.00143	0.000978	0.000151	0.000000691	0.00104	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000418	0.000221	0.00200	0.0000151	ND	0.00238	0.000276	0.0335	0.000438	0.00693	0.00267	0.000925	0.000123	0.000000549	0.000789	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0024	0.0000796	0.000432	0.00336	0.0000103	ND	0.00244	0.000350	0.0377	0.000946	0.0112	0.00211	0.00106	0.000143	0.000000710	0.00101	ND
7/30/2024	Leialii Hawaiian Homelands (AM-01)	<0.0024	0.0000744	0.00115	0.00757	0.0000317	ND	0.00611	0.00132	0.177	0.000795	0.0338	0.00871	0.00311	0.000214	0.00000160	0.00388	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.0000777	0.000293	0.00404	0.0000141	ND	0.00297	0.000517	0.0416	0.000657	0.0153	0.00225	0.00145	0.000152	0.000000917	0.00154	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000664	0.000297	0.00306	0.0000232	ND	0.00473	0.000518	0.0373	0.000480	0.0124	0.00275	0.00216	0.000128	0.000000717	0.00128	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0024	0.0000694	0.000448	0.00369	0.0000168	ND	0.00305	0.000482	0.0388	0.000759	0.0160	0.00188	0.00126	0.000146	0.000000814	0.00126	ND
7/31/2024	Leialii Hawaiian Homelands (AM-01)	<0.0024	0.000169	0.00216	0.00743	0.0000264	0.0000704	0.00654	0.00132	0.159	0.000536	0.0310	0.00751	0.00328	0.000218	0.00000143	0.00369	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.000149	0.000301	0.00602	0.0000152	ND	0.00296	0.000588	0.0373	0.000844	0.0166	0.00180	0.00157	0.000179	0.00000101	0.00173	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000726	0.000270	0.00403	0.0000228	ND	0.00318	0.000577	0.0624	0.000525	0.0133	0.00418	0.00264	0.000213	0.000000976	0.00123	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0024	0.000109	0.000570	0.00517	0.0000209	ND	0.00372	0.000705	0.0416	0.00118	0.0233	0.00191	0.00189	0.000209	0.00000118	0.00181	ND
95% Upper Confidence Limit[2]		NA	0.0000900	0.000710	0.00565	0.0000260	NA	0.00443	0.000900	0.0919	0.000830	0.0251	0.00501	0.00224	0.000240	0.00000170	0.00244	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 25 through July 31, 2024
[Report Updated: September 5, 2024]

Date	Station ID	Weather Station Name	Wind Speed (mph)	Wind Direction (angle)	Temperature (°F)	Rel Humidity (%)	Baro Pressure (mBar)
7/25/2024	AM-01	Leialii Hawaiian Homelands	1.0	SE	86	61	762.4
7/25/2024	AM-02	WW Pump Station #4	0.9	SSE	84	67	764.6
7/25/2024	AM-03	Lahaina Intermediate School	1.1	ESE	80	64	755.1
7/25/2024	AM-04	Lahaina Boys & Girls Club	0.9	S	80	66	764.1
7/26/2024	AM-01	Leialii Hawaiian Homelands	1.9	ESE	85	54	760.9
7/26/2024	AM-02	WW Pump Station #4	1.3	SSE	83	59	763.0
7/26/2024	AM-03	Lahaina Intermediate School	1.4	ESE	80	57	753.5
7/26/2024	AM-04	Lahaina Boys & Girls Club	1.2	SSW	79	59	762.6
7/27/2024	AM-01	Leialii Hawaiian Homelands	1.0	SE	85	57	759.9
7/27/2024	AM-02	WW Pump Station #4	0.9	SSE	83	63	762.0
7/27/2024	AM-03	Lahaina Intermediate School	1.1	SE	79	62	752.5
7/27/2024	AM-04	Lahaina Boys & Girls Club	1.3	SSW	79	64	761.6
7/28/2024	AM-01	Leialii Hawaiian Homelands	1.1	SE	86	60	761.3
7/28/2024	AM-02	WW Pump Station #4	1.1	SSE	83	67	763.4
7/28/2024	AM-03	Lahaina Intermediate School	1.1	ESE	80	64	753.9
7/28/2024	AM-04	Lahaina Boys & Girls Club	1.1	S	78	67	763.0
7/29/2024	AM-01	Leialii Hawaiian Homelands	1.1	SE	85	56	762.1
7/29/2024	AM-02	WW Pump Station #4	1.1	SSE	83	62	764.3
7/29/2024	AM-03	Lahaina Intermediate School	1.2	ESE	79	59	754.7
7/29/2024	AM-04	Lahaina Boys & Girls Club	1.2	S	78	63	763.8
7/30/2024	AM-01	Leialii Hawaiian Homelands	1.0	SE	83	65	761.6
7/30/2024	AM-02	WW Pump Station #4	0.9	S	82	68	763.8
7/30/2024	AM-03	Lahaina Intermediate School	1.0	ESE	79	66	754.3
7/30/2024	AM-04	Lahaina Boys & Girls Club	1.0	S	78	68	763.3
7/31/2024	AM-01	Leialii Hawaiian Homelands	1.0	ESE	85	56	760.8
7/31/2024	AM-02	WW Pump Station #4	1.1	SSE	82	62	763.0
7/31/2024	AM-03	Lahaina Intermediate School	1.2	ESE	79	59	753.4
7/31/2024	AM-04	Lahaina Boys & Girls Club	1.2	SSW	77	64	762.5

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.

**Please note sample data that does not fall within this reporting period have been removed or redacted

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:	042415945
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:	07/31/2024 09:40 AM
Analysis Date:	08/05/2024
Report Date:	08/06/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM01-072524-AB**	**Sample Description:**	**DL247143**
EMSL Sample Number:	042415945-0001	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L) :	7203.4
Aspect ratio for fiber definition:	3:1	Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5	Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A *(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD	Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX		
Estimated Particulate Loading on Filter %:	5		
Target Analytical Sensitivity (Structures/cc):	0.001		
Analytical Sensitivity (Structures/cc):	**0.0008**	**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Approved Signatory

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

EMSL Order ID:	**042415945**
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: 042415945-0001 **Customer Sample:** MFL-AM01-072524-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	B2	None Detected									
B2	D4	None Detected									
B2	G8	None Detected									
B3	H2	None Detected									
B3	B4	None Detected									

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

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EMSL Order:	042415945
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:	07/31/2024 09:40 AM
Analysis Date:	08/05/2024
Report Date:	08/06/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-072524-AB**		**Sample Description:**	**DL247145**
EMSL Sample Number:	042415945-0002		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7143.9
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):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	5			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Robyn Ray
Approved Signatory

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EMSL Order ID:	**042415945**
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: 042415945-0002 **Customer Sample:** MFL-AM02-072524-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	A5	None Detected									
B5	E8	None Detected									
B5	I6	None Detected									
B6	I8	None Detected									
B6	C4	None Detected									

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

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EMSL Order:	042415945
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

Attn: **Chelsea Saber**
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Analysis Date:	08/05/2024
Report Date:	08/06/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-072524-AB**	**Sample Description:**	**DL247179**
EMSL Sample Number:	042415945-0003	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L) :	7219.4
Aspect ratio for fiber definition:	3:1	Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5	Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A *(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD	Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX		
Estimated Particulate Loading on Filter %:	3		
Target Analytical Sensitivity (Structures/cc):	0.001		
Analytical Sensitivity (Structures/cc):	**0.0008**	**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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EMSL Order ID:	**042415945**
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: 042415945-0003 **Customer Sample:** MFL-AM03-072524-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	J1	None Detected									
C2	G5	None Detected									
C2	D6	None Detected									
C3	H4	None Detected									
C3	C1	None Detected									

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

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EMSL Order:	042415945
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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Received Date:	07/31/2024 09:40 AM
Analysis Date:	08/05/2024
Report Date:	08/06/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM04-072524-AB**	**Sample Description:**	**DL247153**
EMSL Sample Number:	042415945-0004	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L) :	7126.9
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):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A *(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD	Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX		
Estimated Particulate Loading on Filter %:	5		
Target Analytical Sensitivity (Structures/cc):	0.001		
Analytical Sensitivity (Structures/cc):	**0.0008**	**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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EMSL Order ID:	**042415945**
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: 042415945-0004 **Customer Sample:** MFL-AM04-072524-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
C5	A5	None Detected									
C5	D2	None Detected									
C5	I6	None Detected									
C6	H4	None Detected									
C6	A5	None Detected									

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

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EMSL Order:	042415945
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

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Fax:	N/A
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Analysis Date:	08/05/2024
Report Date:	08/06/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-FB01-072524-AB**		**Sample Description:**	**DL247159**
EMSL Sample Number:	042415945-0005		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**N/A**		**Limit of Detection (Structures/cc):**	**N/A**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	95 % Confidence Interval (S/cc) Upper
Total Chrysotile	**CD**	**0**	**0**	**< 23.18**			
Total Amphibole	**ADX**	**0**	**0**	**< 23.18**			
Actinolite	ADX	0	0	< 23.18			
Amosite	ADX	0	0	< 23.18			
Anthophyllite	ADX	0	0	< 23.18			
Crocidolite	ADX	0	0	< 23.18			
Tremolite	ADX	0	0	< 23.18			
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.18**			
Other Minerals	-	0	0	< 23.18			
Total All Structures	**-**	**0**	**0**	**< 23.18**			

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

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	95 % Confidence Interval (F/cc) Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 23.18**			
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.18**			
Actinolite	ADX	0	0	< 23.18			
Amosite	ADX	0	0	< 23.18			
Anthophyllite	ADX	0	0	< 23.18			
Crocidolite	ADX	0	0	< 23.18			
Tremolite	ADX	0	0	< 23.18			
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.18**			
Other Minerals	-	0	0	< 23.18			
Total All Structures (PCMe)	**-**	**0**	**0**	**< 23.18**			

Comment

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EMSL Order ID:	**042415945**
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: 042415945-0005 **Customer Sample:** MFL-FB01-072524-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	J2	None Detected									
D2	H4	None Detected									
D2	F8	None Detected									
D2	D4	None Detected									
D2	B2	None Detected									
D3	A10	None Detected									
D3	C7	None Detected									
D3	E9	None Detected									
D3	G10	None Detected									
D3	I8	None Detected									

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

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EMSL Order:	042415945
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	07/31/2024 09:40 AM
Analysis Date:	08/05/2024
Report Date:	08/06/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM01-072624-AB**		**Sample Description:**	**DL247148**
EMSL Sample Number:	042415945-0006		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7226.5
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	5			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Robyn Ray
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EMSL Analytical, Inc.
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http://www.EMSL.com / cinnasblab@EMSL.com

EMSL Order ID:	**042415945**
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: 042415945-0006 **Customer Sample:** MFL-AM01-072624-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	J7	None Detected									
D5	G4	None Detected									
D5	B3	None Detected									
D6	B9	None Detected									
D6	J6	None Detected									

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

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EMSL Order:	042415945
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:	07/31/2024 09:40 AM
Analysis Date:	08/05/2024
Report Date:	08/06/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-072624-AB**	**Sample Description:**	**DL247140**
EMSL Sample Number:	042415945-0007	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L) :	7296.9
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):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A *(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD	Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX		
Estimated Particulate Loading on Filter %:	3		
Target Analytical Sensitivity (Structures/cc):	0.001		
Analytical Sensitivity (Structures/cc):	**0.0008**	**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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EMSL Order ID:	042415945
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: 042415945-0007 **Customer Sample:** MFL-AM02-072624-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					
E3	I4	None Detected									
E3	G6	None Detected									
E3	D4	None Detected									
E4	I3	None Detected									
E4	C6	None Detected									

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

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EMSL Order:	042415945
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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Analysis Date:	08/05/2024
Report Date:	08/06/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-072624-AB**		**Sample Description:**	**DL247163**
EMSL Sample Number:	042415945-0008		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7154.2
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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EMSL Order ID:	**042415945**
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: 042415945-0008 **Customer Sample:** MFL-AM03-072624-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
E6	A8	None Detected									
E6	D10	None Detected									
E6	H9	None Detected									
E7	H3	None Detected									
E7	C4	None Detected									

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

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EMSL Order:	042415945
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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Received Date:	07/31/2024 09:40 AM
Analysis Date:	08/05/2024
Report Date:	08/06/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM04-072624-AB**	**Sample Description:**	**DL247167**
EMSL Sample Number:	042415945-0009	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L) :	7249.8
Aspect ratio for fiber definition:	3:1	Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5	Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A *(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD	Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX		
Estimated Particulate Loading on Filter %:	5		
Target Analytical Sensitivity (Structures/cc):	0.001		
Analytical Sensitivity (Structures/cc):	**0.0008**	**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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EMSL Order ID:	**042415945**
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: 042415945-0009 **Customer Sample:** MFL-AM04-072624-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	A8	None Detected									
F2	D4	None Detected									
F2	G7	None Detected									
F3	H5	None Detected									
F3	E9	None Detected									

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

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EMSL Order:	042415945
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

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ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-FB01-072624-AB**		**Sample Description:**	**DL247158**
EMSL Sample Number:	042415945-0010		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**N/A**		**Limit of Detection (Structures/cc):**	**N/A**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	95 % Confidence Interval (S/cc) Upper
Total Chrysotile	**CD**	**0**	**0**	**< 23.18**			
Total Amphibole	**ADX**	**0**	**0**	**< 23.18**			
Actinolite	ADX	0	0	< 23.18			
Amosite	ADX	0	0	< 23.18			
Anthophyllite	ADX	0	0	< 23.18			
Crocidolite	ADX	0	0	< 23.18			
Tremolite	ADX	0	0	< 23.18			
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.18**			
Other Minerals	-	0	0	< 23.18			
Total All Structures	**-**	**0**	**0**	**< 23.18**			

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

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	95 % Confidence Interval (F/cc) Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 23.18**			
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.18**			
Actinolite	ADX	0	0	< 23.18			
Amosite	ADX	0	0	< 23.18			
Anthophyllite	ADX	0	0	< 23.18			
Crocidolite	ADX	0	0	< 23.18			
Tremolite	ADX	0	0	< 23.18			
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.18**			
Other Minerals	-	0	0	< 23.18			
Total All Structures (PCMe)	**-**	**0**	**0**	**< 23.18**			

Comment

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EMSL Order ID:	**042415945**
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: 042415945-0010 **Customer Sample:** MFL-FB01-072624-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	J7	None Detected									
F5	H3	None Detected									
F5	F1	None Detected									
F5	D6	None Detected									
F5	B8	None Detected									
F6	J7	None Detected									
F6	H8	None Detected									
F6	F7	None Detected									
F6	D6	None Detected									
F6	B4	None Detected									

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

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EMSL Order:	042415945
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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Received Date:	07/31/2024 09:40 AM
Analysis Date:	08/05/2024
Report Date:	08/06/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM01-072724-AB**		**Sample Description:**	**DL247160**
EMSL Sample Number:	042415945-0011		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7159.5
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	5			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Robyn Ray
Approved Signatory

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

EMSL Order ID:	**042415945**
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: 042415945-0011 **Customer Sample:** MFL-AM01-072724-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	J6	None Detected									
G2	G2	None Detected									
G2	D4	None Detected									
G3	H5	None Detected									
G3	D3	None Detected									

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

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EMSL Order:	042415945
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:	07/31/2024 09:40 AM
Analysis Date:	08/05/2024
Report Date:	08/06/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-072724-AB**		**Sample Description:**	**DL247149**
EMSL Sample Number:	042415945-0012		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7147.7
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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EMSL Order ID:	**042415945**
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: 042415945-0012 **Customer Sample:** MFL-AM02-072724-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	E7	None Detected									
G5	I7	None Detected									
G6	G2	None Detected									
G6	B2	None Detected									

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

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EMSL Order:	042415945
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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Project: **Maui Fires Lahaina**

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Received Date:	07/31/2024 09:40 AM
Analysis Date:	08/05/2024
Report Date:	08/06/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-072724-AB**		**Sample Description:**	**DL247168**
EMSL Sample Number:	042415945-0013		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7147.1
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	2			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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EMSL Order ID:	**042415945**
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: 042415945-0013 **Customer Sample:** MFL-AM03-072724-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	B4	None Detected									
H2	E8	None Detected									
H2	G4	None Detected									
H3	C4	None Detected									
H3	H2	None Detected									

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

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EMSL Order:	042415945
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Fires Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	07/31/2024 09:40 AM
Analysis Date:	08/05/2024
Report Date:	08/06/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM04-072724-AB**		**Sample Description:**	**DL247147**
EMSL Sample Number:	042415945-0014		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7294.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	5			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Robyn Ray
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EMSL Order ID:	**042415945**
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: 042415945-0014 **Customer Sample:** MFL-AM04-072724-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	A4	None Detected									
H5	D7	None Detected									
H5	I4	None Detected									
H6	B4	None Detected									
H6	G5	None Detected									

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

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EMSL Order:	042415945
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Fires Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	07/31/2024 09:40 AM
Analysis Date:	08/05/2024
Report Date:	08/06/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-FB01-072724-AB**		**Sample Description:**	**DL247150**
EMSL Sample Number:	042415945-0015		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**N/A**		**Limit of Detection (Structures/cc):**	**N/A**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	95 % Confidence Interval (S/cc) Upper
Total Chrysotile	**CD**	**0**	**0**	**< 23.18**			
Total Amphibole	**ADX**	**0**	**0**	**< 23.18**			
Actinolite	ADX	0	0	< 23.18			
Amosite	ADX	0	0	< 23.18			
Anthophyllite	ADX	0	0	< 23.18			
Crocidolite	ADX	0	0	< 23.18			
Tremolite	ADX	0	0	< 23.18			
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.18**			
Other Minerals	-	0	0	< 23.18			
Total All Structures	**-**	**0**	**0**	**< 23.18**			

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

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	95 % Confidence Interval (F/cc) Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 23.18**			
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.18**			
Actinolite	ADX	0	0	< 23.18			
Amosite	ADX	0	0	< 23.18			
Anthophyllite	ADX	0	0	< 23.18			
Crocidolite	ADX	0	0	< 23.18			
Tremolite	ADX	0	0	< 23.18			
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.18**			
Other Minerals	-	0	0	< 23.18			
Total All Structures (PCMe)	**-**	**0**	**0**	**< 23.18**			

Comment


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EMSL Order ID:	**042415945**
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: 042415945-0015 **Customer Sample:** MFL-FB01-072724-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
I2	J2	None Detected									
I2	H3	None Detected									
I2	F7	None Detected									
I2	D8	None Detected									
I2	B4	None Detected									
I3	A7	None Detected									
I3	C6	None Detected									
I3	E8	None Detected									
I3	G9	None Detected									
I3	I3	None Detected									

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

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EMSL Order:	042415945
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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Received Date:	07/31/2024 09:40 AM
Analysis Date:	08/05/2024
Report Date:	08/06/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM01-072824-AB**		**Sample Description:**	**DL247171**
EMSL Sample Number:	042415945-0016		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7224.8
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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

EMSL Order ID:	**042415945**
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: 042415945-0016 **Customer Sample:** MFL-AM01-072824-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	A4	None Detected									
I5	D8	None Detected									
I5	G10	None Detected									
I6	B6	None Detected									
I6	J5	None Detected									

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

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EMSL Order:	042415945
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:	07/31/2024 09:40 AM
Analysis Date:	08/05/2024
Report Date:	08/06/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-072824-AB**	**Sample Description:**	**DL247165**
EMSL Sample Number:	042415945-0017	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L) :	7181.4
Aspect ratio for fiber definition:	3:1	Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5	Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A *(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD	Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX		
Estimated Particulate Loading on Filter %:	3		
Target Analytical Sensitivity (Structures/cc):	0.001		
Analytical Sensitivity (Structures/cc):	**0.0008**	**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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EMSL Order ID:	**042415945**
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: 042415945-0017 **Customer Sample:** MFL-AM02-072824-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	H6	None Detected									
J2	E3	None Detected									
J2	A3	None Detected									
J3	C8	None Detected									
J3	H6	None Detected									

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

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EMSL Order:	042415945
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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Received Date:	07/31/2024 09:40 AM
Analysis Date:	08/05/2024
Report Date:	08/06/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-072824-AB**	**Sample Description:**	**DL247169**
EMSL Sample Number:	042415945-0018	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L) :	7153.1
Aspect ratio for fiber definition:	3:1	Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5	Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A *(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD	Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX		
Estimated Particulate Loading on Filter %:	3		
Target Analytical Sensitivity (Structures/cc):	0.001		
Analytical Sensitivity (Structures/cc):	**0.0008**	**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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EMSL Order ID:	**042415945**
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: 042415945-0018 **Customer Sample:** MFL-AM03-072824-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	I5	None Detected									
J5	E8	None Detected									
J5	A7	None Detected									
J6	B4	None Detected									
J6	I6	None Detected									

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

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Customer PO:	1207085
Project ID:	N/A

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Project: **Maui Fires Lahaina**

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Received Date:	07/31/2024 09:40 AM
Analysis Date:	08/05/2024
Report Date:	08/06/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM04-072824-AB**	**Sample Description:**	**DL247154**
EMSL Sample Number:	042415945-0019	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L) :	7178.5
Aspect ratio for fiber definition:	3:1	Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5	Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A *(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD	Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX		
Estimated Particulate Loading on Filter %:	3		
Target Analytical Sensitivity (Structures/cc):	0.001		
Analytical Sensitivity (Structures/cc):	**0.0008**	**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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EMSL Order ID:	042415945
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: 042415945-0019 **Customer Sample:** MFL-AM04-072824-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
K2	I5	None Detected									
K2	G4	None Detected									
K2	C4	None Detected									
K3	D8	None Detected									
K3	J5	None Detected									

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

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EMSL Order:	042415945
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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Report Date:	08/06/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-FB01-072824-AB**		**Sample Description:**	**DL246247**
EMSL Sample Number:	042415945-0020		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**N/A**		**Limit of Detection (Structures/cc):**	**N/A**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	95 % Confidence Interval (S/cc) Upper
Total Chrysotile	**CD**	**0**	**0**	**< 23.18**			
Total Amphibole	**ADX**	**0**	**0**	**< 23.18**			
Actinolite	ADX	0	0	< 23.18			
Amosite	ADX	0	0	< 23.18			
Anthophyllite	ADX	0	0	< 23.18			
Crocidolite	ADX	0	0	< 23.18			
Tremolite	ADX	0	0	< 23.18			
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.18**			
Other Minerals	-	0	0	< 23.18			
Total All Structures	**-**	**0**	**0**	**< 23.18**			

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

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	95 % Confidence Interval (F/cc) Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 23.18**			
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.18**			
Actinolite	ADX	0	0	< 23.18			
Amosite	ADX	0	0	< 23.18			
Anthophyllite	ADX	0	0	< 23.18			
Crocidolite	ADX	0	0	< 23.18			
Tremolite	ADX	0	0	< 23.18			
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.18**			
Other Minerals	-	0	0	< 23.18			
Total All Structures (PCMe)	**-**	**0**	**0**	**< 23.18**			

Comment

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EMSL Order ID:	**042415945**
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: 042415945-0020 **Customer Sample:** MFL-FB01-072824-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	A6	None Detected									
K5	C8	None Detected									
K5	E4	None Detected									
K5	G2	None Detected									
K5	I4	None Detected									
K6	J8	None Detected									
K6	H7	None Detected									
K6	F4	None Detected									
K6	D2	None Detected									
K6	B6	None Detected									

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

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EMSL Order:	042415945
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Denver, CO, 80202

Project: **Maui Fires Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	07/31/2024 09:40 AM
Analysis Date:	08/05/2024
Report Date:	08/06/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**Lab Blank**		**Sample Description:**	**Lab Blank**
EMSL Sample Number:	042415945-0021		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**N/A**		**Limit of Detection (Structures/cc):**	**N/A**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	95 % Confidence Interval (S/cc) Upper
Total Chrysotile	**CD**	**0**	**0**	**< 23.18**			
Total Amphibole	**ADX**	**0**	**0**	**< 23.18**			
Actinolite	ADX	0	0	< 23.18			
Amosite	ADX	0	0	< 23.18			
Anthophyllite	ADX	0	0	< 23.18			
Crocidolite	ADX	0	0	< 23.18			
Tremolite	ADX	0	0	< 23.18			
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.18**			
Other Minerals	-	0	0	< 23.18			
Total All Structures	**-**	**0**	**0**	**< 23.18**			

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

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	95 % Confidence Interval (F/cc) Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 23.18**			
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.18**			
Actinolite	ADX	0	0	< 23.18			
Amosite	ADX	0	0	< 23.18			
Anthophyllite	ADX	0	0	< 23.18			
Crocidolite	ADX	0	0	< 23.18			
Tremolite	ADX	0	0	< 23.18			
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.18**			
Other Minerals	-	0	0	< 23.18			
Total All Structures (PCMe)	**-**	**0**	**0**	**< 23.18**			

Comment

Approved Signatory

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

EMSL Order ID:	**042415945**
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: 042415945-0021 **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	A5	None Detected									
A1	C2	None Detected									
A1	E1	None Detected									
A1	G4	None Detected									
A1	I3	None Detected									
A2	J7	None Detected									
A2	H5	None Detected									
A2	F4	None Detected									
A2	D8	None Detected									
A2	B5	None Detected									

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

OrderID: 042415945

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

EMSL Order Number / Lab Use Only

#042415945

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

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

Customer Information

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

Billing Information

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

Project Information

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

Turn-Around-Time (TAT)

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

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

Test Selection

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

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

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

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

Other Test (please specify)

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

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

RECEIVED BY EMSL CINNAMINSON, NJ 2024 JUL 31 AM 9:07

*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-AM01-072524-AB	DL247143	7,203.404	07/25/24 1059
MFL-AM02-072524-AB	DL247145	7,143.861	07/25/24 1117
MFL-AM03-072524-AB	DL247179	7,219.428	07/25/24 1258
MFL-AM04-072524-AB	(SE) ~~DL247156~~ DL247153	7,126.882	07/25/24 1320
MFL-FB01-072524-AB	DL247159	0	07/25/24 1200
MFL-AM01-072624-AB	DL247148	7,226.529	07/26/24 1059
MFL-AM02-072624-AB	DL247140	7,296.942	07/26/24 1117
MFL-AM03-072624-AB	DL247163	7,154.194	07/26/24 1300

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

All samples received acceptable for analysis.

Method of Shipment:	Fedex	Sample Condition Upon Receipt:	
Relinquished by:		Date/Time: 07/29/24 1100	Received by: FT Date/Time 7/31/24 940
Relinquished by:		Date/Time:	Received by: Date/Time

Controlled Document - COC-06 Asbestos R16 10/26/2021

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

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

DO AH

OrderID: 042415945

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL Order Number / Lab Use Only

#042415945

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-AM04-072624-AB	(36) ~~DL247164~~ DL247167	7,249.752	07/26/24 1320
MFL-FB01-072624-AB	DL247158	0	07/26/24 1200
MFL-AM01-072724-AB	DL247160	7,159.532	07/27/24 1057
MFL-AM02-072724-AB	DL247199	7,147.661	07/27/24 1113
MFL-AM03-072724-AB	DL247168	7,147.088	07/27/24 1256
MFL-AM09-072724-AB	DL247147	7,293967	07/27/24 1321
MFL-FB01-072724-AB	DL247150	0	07/27/24 1200
MFL-AM01-072824-AB	DL247171	7,224.840	07/28/24 1100
MFL-AM02-072824-AB	DL247165	7,181.368	07/28/24 1118
MFL-AM03-072824-AB	DL247169	7,153.056	07/28/24 1300
MFL-AM04-072824-AB	DL247154	7,178.461	07/28/24 1323
MFL-FB01-072824-AB	DL246247	0	07/28/24 1200

RECEIVED
EMSL
CINNAMINSON, NJ
2024 JUL 32 A 12:07

Method of Shipment: Fedex		Sample Condition Upon Receipt:	
Relinquished by:	Date/Time: 07/29/24 1100	Received by:	Date/Time 7/31/24
Relinquished by:	Date/Time:	Received by:	Date/Time

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

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

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

Stage 1 Data Verification Checklist – Asbestos

HDOH CAB – Ambient Community Air Sampling – Lahaina

Task Order No. 23141

Reviewed by:
Kierra Johnson 08/07/2024 and Shanna Vasser 08/08/2024
Laboratory: EMSL Analytical, Inc. – North Cinnaminson, NJ
Collection date(s): 07/25/2024 – 07/28/2024
Report No: 42415945

√	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:	042416247
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Fires Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	08/05/2024 09:00 AM
Analysis Date:	08/08/2024
Report Date:	08/12/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM01-072924-AB**		**Sample Description:**	**DL246230**
EMSL Sample Number:	042416247-0001		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7227.4
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	6			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Robyn Ray
Approved Signatory

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

EMSL Order ID:	**042416247**
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: 042416247-0001 **Customer Sample:** MFL-AM01-072924-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	A3	None Detected									
A5	E8	None Detected									
A5	J5	None Detected									
A7	C4	None Detected									
A7	H3	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:	042416247
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Fires Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	08/05/2024 09:00 AM
Analysis Date:	08/08/2024
Report Date:	08/12/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-072924-AB**		**Sample Description:**	**DL246201**
EMSL Sample Number:	042416247-0002		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7143.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	5			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Robyn Ray
Approved Signatory

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

EMSL Order ID:	**042416247**
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: 042416247-0002 **Customer Sample:** MFL-AM02-072924-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	A5	None Detected									
B2	E4	None Detected									
B2	I7	None Detected									
B3	H7	None Detected									
B3	C5	None Detected									

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

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

EMSL Order:	042416247
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Fires Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	08/05/2024 09:00 AM
Analysis Date:	08/08/2024
Report Date:	08/12/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-072924-AB**		**Sample Description:**	**DL246552**
EMSL Sample Number:	042416247-0003		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7206.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	6			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Robyn Ray
Approved Signatory

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

EMSL Order ID:	**042416247**
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: 042416247-0003 **Customer Sample:** MFL-AM03-072924-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
B5	J4	None Detected									
B5	H7	None Detected									
B5	B5	None Detected									
B7	G6	None Detected									
B7	A7	None Detected									

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

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EMSL Order:	042416247
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

Attn: **Chelsea Saber**
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Received Date:	08/05/2024 09:00 AM
Analysis Date:	08/08/2024
Report Date:	08/12/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM04-072924-AB**	**Sample Description:**	**DL246964**
EMSL Sample Number:	042416247-0004	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L) :	7181.8
Aspect ratio for fiber definition:	3:1	Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5	Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A *(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD	Analyst:	G.Barry
Minimum Level of analysis (amphibole):	ADX		
Estimated Particulate Loading on Filter %:	5		
Target Analytical Sensitivity (Structures/cc):	0.001		
Analytical Sensitivity (Structures/cc):	**0.0008**	**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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EMSL Order ID:	**042416247**
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: 042416247-0004 **Customer Sample:** MFL-AM04-072924-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	I9	None Detected									
C1	F3	None Detected									
C1	B4	None Detected									
C2	J3	None Detected									
C2	D3	None Detected									

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

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EMSL Order:	042416247
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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Received Date:	08/05/2024 09:00 AM
Analysis Date:	08/08/2024
Report Date:	08/12/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-FB01-072924-AB**		**Sample Description:**	**DL246214**
EMSL Sample Number:	042416247-0005		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**N/A**		**Limit of Detection (Structures/cc):**	**N/A**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	95 % Confidence Interval (S/cc) Upper
Total Chrysotile	**CD**	**0**	**0**	**< 23.18**			
Total Amphibole	**ADX**	**0**	**0**	**< 23.18**			
Actinolite	ADX	0	0	< 23.18			
Amosite	ADX	0	0	< 23.18			
Anthophyllite	ADX	0	0	< 23.18			
Crocidolite	ADX	0	0	< 23.18			
Tremolite	ADX	0	0	< 23.18			
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.18**			
Other Minerals	-	0	0	< 23.18			
Total All Structures	**-**	**0**	**0**	**< 23.18**			

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

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	95 % Confidence Interval (F/cc) Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 23.18**			
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.18**			
Actinolite	ADX	0	0	< 23.18			
Amosite	ADX	0	0	< 23.18			
Anthophyllite	ADX	0	0	< 23.18			
Crocidolite	ADX	0	0	< 23.18			
Tremolite	ADX	0	0	< 23.18			
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.18**			
Other Minerals	-	0	0	< 23.18			
Total All Structures (PCMe)	**-**	**0**	**0**	**< 23.18**			

Comment

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EMSL Order ID:	**042416247**
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: 042416247-0005 **Customer Sample:** MFL-FB01-072924-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	A3	None Detected									
C5	C7	None Detected									
C5	G4	None Detected									
C5	I7	None Detected									
C6	B9	None Detected									
C6	B5	None Detected									
C6	F4	None Detected									
C6	H8	None Detected									
C7	A9	None Detected									
C7	C5	None Detected									

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

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EMSL Order:	042416247
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Customer PO:	1207085
Project ID:	N/A

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Analysis Date:	08/08/2024
Report Date:	08/12/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM01-073024-AB**		**Sample Description:**	**DL246607**
EMSL Sample Number:	042416247-0006		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7131.2
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	6			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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EMSL Order ID:	**042416247**
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: 042416247-0006 **Customer Sample:** MFL-AM01-073024-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	H4	None Detected									
D1	F7	None Detected									
D1	A8	None Detected									
D2	A3	None Detected									
D2	D7	None Detected									

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

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EMSL Order:	042416247
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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Received Date:	08/05/2024 09:00 AM
Analysis Date:	08/08/2024
Report Date:	08/12/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-073024-AB**		**Sample Description:**	**DL246207**
EMSL Sample Number:	042416247-0007		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7228.8
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	7			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Numerous gypsum fibers present.

Approved Signatory

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EMSL Order ID:	**042416247**
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: 042416247-0007 **Customer Sample:** MFL-AM02-073024-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					
D6	B8	None Detected									
D6	E3	None Detected									
D6	J5	None Detected									
D7	C3	None Detected									
D7	G7	None Detected									

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

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EMSL Order:	042416247
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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Received Date:	08/05/2024 09:00 AM
Analysis Date:	08/09/2024
Report Date:	08/12/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-073024-AB**		**Sample Description:**	**DL246434**
EMSL Sample Number:	042416247-0008		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7278.6
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	6			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Robyn Ray
Approved Signatory

EMSL Analytical, Inc.
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http://www.EMSL.com / cinnasblab@EMSL.com

EMSL Order ID:	**042416247**
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: 042416247-0008 **Customer Sample:** MFL-AM03-073024-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	J5	None Detected									
E1	F7	None Detected									
E1	B4	None Detected									
E2	I3	None Detected									
E2	D6	None Detected									

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

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EMSL Order:	042416247
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Fires Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	08/05/2024 09:00 AM
Analysis Date:	08/09/2024
Report Date:	08/12/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM04-073024-AB**		**Sample Description:**	**DL246217**
EMSL Sample Number:	042416247-0009		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7269.4
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	7			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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EMSL Order ID:	**042416247**
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: 042416247-0009 **Customer Sample:** MFL-AM04-073024-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	H8	None Detected									
E5	H4	None Detected									
E5	C6	None Detected									
E6	G5	None Detected									
E6	B5	None Detected									

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

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EMSL Order:	042416247
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

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Fax:	N/A
Received Date:	08/05/2024 09:00 AM
Analysis Date:	08/09/2024
Report Date:	08/12/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-073024-AB** **Sample Description:** **DL246488**

EMSL Sample Number:	042416247-0010		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**N/A**		**Limit of Detection (Structures/cc):**	**N/A**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	95 % Confidence Interval (S/cc) Upper
Total Chrysotile	**CD**	**0**	**0**	**< 23.18**			
Total Amphibole	**ADX**	**0**	**0**	**< 23.18**			
Actinolite	ADX	0	0	< 23.18			
Amosite	ADX	0	0	< 23.18			
Anthophyllite	ADX	0	0	< 23.18			
Crocidolite	ADX	0	0	< 23.18			
Tremolite	ADX	0	0	< 23.18			
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.18**			
Other Minerals	-	0	0	< 23.18			
Total All Structures	**-**	**0**	**0**	**< 23.18**			

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

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	95 % Confidence Interval (F/cc) Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 23.18**			
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.18**			
Actinolite	ADX	0	0	< 23.18			
Amosite	ADX	0	0	< 23.18			
Anthophyllite	ADX	0	0	< 23.18			
Crocidolite	ADX	0	0	< 23.18			
Tremolite	ADX	0	0	< 23.18			
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.18**			
Other Minerals	-	0	0	< 23.18			
Total All Structures (PCMe)	**-**	**0**	**0**	**< 23.18**			

Comment

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EMSL Order ID:	**042416247**
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: 042416247-0010 **Customer Sample:** MFL-FB01-073024-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
F1	C7	None Detected									
F1	E4	None Detected									
F1	J7	None Detected									
F2	J9	None Detected									
F2	I4	None Detected									
F2	F2	None Detected									
F2	A6	None Detected									
F3	B8	None Detected									
F3	D6	None Detected									
F3	H7	None Detected									

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

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EMSL Order:	042416247
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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Received Date:	08/05/2024 09:00 AM
Analysis Date:	08/09/2024
Report Date:	08/12/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM01-073124-AB**		**Sample Description:**	**DL246239**
EMSL Sample Number:	042416247-0011		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7212.1
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	7			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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EMSL Order ID:	**042416247**
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: 042416247-0011 **Customer Sample:** MFL-AM01-073124-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	G4	None Detected									
F5	C7	None Detected									
F6	J4	None Detected									
F6	E8	None Detected									
F6	A4	None Detected									

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

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EMSL Order:	042416247
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	08/05/2024 09:00 AM
Analysis Date:	08/09/2024
Report Date:	08/12/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-073124-AB**		**Sample Description:**	**DL246545**
EMSL Sample Number:	042416247-0012		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7093.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	7			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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EMSL Order ID:	**042416247**
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: 042416247-0012 **Customer Sample:** MFL-AM02-073124-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	B3	None Detected									
G1	D7	None Detected									
G1	I9	None Detected									
G2	J6	None Detected									
G2	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:	042416247
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Fires Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	08/05/2024 09:00 AM
Analysis Date:	08/09/2024
Report Date:	08/12/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-073124-AB**		**Sample Description:**	**DL246216**
EMSL Sample Number:	042416247-0013		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7085.8
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	8			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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:	**042416247**
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: 042416247-0013 **Customer Sample:** MFL-AM03-073124-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	I9	None Detected									
G5	E4	None Detected									
G5	A7	None Detected									
G6	H7	None Detected									
G6	C5	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:	042416247
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Fires Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	08/05/2024 09:00 AM
Analysis Date:	08/09/2024
Report Date:	08/12/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM04-073124-AB**		**Sample Description:**	**DL246189**
EMSL Sample Number:	042416247-0014		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7181.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	8			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Robyn Ray
Approved Signatory

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

EMSL Order ID:	042416247
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: 042416247-0014 **Customer Sample:** MFL-AM04-073124-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	I6	None Detected									
H1	E9	None Detected									
H1	C5	None Detected									
H2	J5	None Detected									
H2	D4	None Detected									

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

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EMSL Order:	042416247
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Fires Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	08/05/2024 09:00 AM
Analysis Date:	08/09/2024
Report Date:	08/12/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-073124-AB** **Sample Description: DL246203**

EMSL Sample Number:	042416247-0015		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.001			

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

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	95 % Confidence Interval (S/cc) Upper
Total Chrysotile	**CD**	**0**	**0**	**< 23.18**			
Total Amphibole	**ADX**	**0**	**0**	**< 23.18**			
Actinolite	ADX	0	0	< 23.18			
Amosite	ADX	0	0	< 23.18			
Anthophyllite	ADX	0	0	< 23.18			
Crocidolite	ADX	0	0	< 23.18			
Tremolite	ADX	0	0	< 23.18			
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.18**			
Other Minerals	-	0	0	< 23.18			
Total All Structures	**-**	**0**	**0**	**< 23.18**			

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

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	95 % Confidence Interval (F/cc) Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 23.18**			
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.18**			
Actinolite	ADX	0	0	< 23.18			
Amosite	ADX	0	0	< 23.18			
Anthophyllite	ADX	0	0	< 23.18			
Crocidolite	ADX	0	0	< 23.18			
Tremolite	ADX	0	0	< 23.18			
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.18**			
Other Minerals	-	0	0	< 23.18			
Total All Structures (PCMe)	**-**	**0**	**0**	**< 23.18**			

Comment

Robyn Ray
Approved Signatory

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

EMSL Order ID:	**042416247**
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: 042416247-0015 **Customer Sample:** MFL-FB01-073124-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	J7	None Detected									
H5	G9	None Detected									
H5	D6	None Detected									
H5	A4	None Detected									
H6	I3	None Detected									
H6	G6	None Detected									
H6	D3	None Detected									
H7	B9	None Detected									
H7	B4	None Detected									
H7	D3	None Detected									

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

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EMSL Order:	042416247
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Fires Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	08/05/2024 09:00 AM
Analysis Date:	08/08/2024
Report Date:	08/12/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**Lab Blank**		**Sample Description:**	**Lab Blank**
EMSL Sample Number:	042416247-0016		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**N/A**		**Limit of Detection (Structures/cc):**	**N/A**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	95 % Confidence Interval (S/cc) Upper
Total Chrysotile	**CD**	**0**	**0**	**< 23.18**			
Total Amphibole	**ADX**	**0**	**0**	**< 23.18**			
Actinolite	ADX	0	0	< 23.18			
Amosite	ADX	0	0	< 23.18			
Anthophyllite	ADX	0	0	< 23.18			
Crocidolite	ADX	0	0	< 23.18			
Tremolite	ADX	0	0	< 23.18			
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.18**			
Other Minerals	-	0	0	< 23.18			
Total All Structures	**-**	**0**	**0**	**< 23.18**			

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

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	95 % Confidence Interval (F/cc) Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 23.18**			
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.18**			
Actinolite	ADX	0	0	< 23.18			
Amosite	ADX	0	0	< 23.18			
Anthophyllite	ADX	0	0	< 23.18			
Crocidolite	ADX	0	0	< 23.18			
Tremolite	ADX	0	0	< 23.18			
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.18**			
Other Minerals	-	0	0	< 23.18			
Total All Structures (PCMe)	**-**	**0**	**0**	**< 23.18**			

Comment

Approved Signatory

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

EMSL Order ID:	**042416247**
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: 042416247-0016 **Customer Sample:** Lab Blank

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
A1	J4	None Detected									
A1	G7	None Detected									
A1	D5	None Detected									
A1	A2	None Detected									
A2	I5	None Detected									
A2	F9	None Detected									
A2	E3	None Detected									
A3	B7	None Detected									
A3	D5	None Detected									
A3	H3	None Detected									

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

OrderID: 042416247

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

EMSL Order Number / Lab Use Only

#042416247

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

RECEIVED EMSL CINNAMINSON, NJ 2024 AUG -5 AM 9:31

Customer Information

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

Billing Information

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

Project Information

Project Name/No: Maui Fires Lahaina
Purchase Order: 1207085
EMSL LIMS Project ID: (If applicable, EMSL will provide)
US State where samples collected: HI
State of Connecticut (CT) must select project location: ☐ Commercial (Taxable) ☐ Residential (Non-Taxable)
Sampled By Name: Lena Diaz
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-AM01-072924-AB	DL246230	7,227.392	07/29/24 1101
MFL-AM02-072924-AB	DL246201	7,142.951	07/29/24 1116
MFL-AM03-072924-AB	DL246552	7,205.962	07/29/24 1300
MFL-AM04-072924-AB	DL246964	7,181.803	07/29/24 1323
MFL-FB01-072924-AB	DL246214	0	07/29/24 1200
MFL-AM01-073024-AB	DL246607	7,131.168	07/30/24 1103
MFL-AM02-073024-AB	DL246207	7,228.880	07/30/24 1129
MFL-AM03-073024-AB	DL246434	7,278.624	07/30/24 1303

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

All samples received acceptable for analysis.

15

Method of Shipment: Fed Ex

Relinquished by: Date/Time: 08/01/24 1100
Relinquished by: Date/Time:

Sample Condition Upon Receipt:

Received by: Fedex Date/Time 8/5/24 9AM
Received by: Date/Time

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

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

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

OrderID: 042416247

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL Order Number / Lab Use Only

#042416247

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-AM04-073024-AB	DL246217	7,269.408	07/30/24 1326
MFL-FB01-073024-AB	DL246488	0	07/30/24 1200
MFL-AM01-073124-AB	DL246239	7,212.134	07/31/24 1104
MFL-AM02-073124-AB	DL246545	7,093.038	07/31/24 1122
MFL-AM03-073124-AB	DL246216	7,085.794	07/31/24 1259
MFL-AM04-073124-AB	DL246189	7,181.003	07/31/24 1321
MFL-FB01-073124-AB	DL246203	0	07/31/24 1200

RECEIVED
EMSL
CINNAMINSON, NJ
24 AUG -5 AM 9:31

Method of Shipment: Fed Ex		Sample Condition Upon Receipt:	
Relinquished by:	Date/Time: 08/01/24 1100	Received by: FedEx	Date/Time 8/5/24 9AM
Relinquished by:	Date/Time:	Received by:	Date/Time

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

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

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

Stage 1 Data Verification Checklist – Asbestos

HDOH CAB – Ambient Community Air Sampling – Lahaina

Task Order No. 23141

Reviewed by:
Kierra Johnson 08/12/2024 and Shanna Vasser 8/13/2024
Laboratory: EMSL Analytical, Inc. – North Cinnaminson, NJ
Collection date(s): 07/29/2024 – 07/31/2024
Report No: 42416247

√	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.

[redacted]

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

August 13, 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 03/11/24 11:48 through 08/05/24 10:30.

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

[redacted]

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/13/24 09:56
SUBMITTED: 03/11/24 to 08/05/24
AQS SITE CODE:
SITE CODE: Lahaina fires

ANALYTICAL REPORT FOR SAMPLES

SampleName	LabNumber	Matrix	Sampled	Received
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
MFL-AM01-072524-HM	4080550-01	Air	07/25/24 23:59	08/05/24 10:30
MFL-AM02-072524-HM	4080550-02	Air	07/25/24 23:59	08/05/24 10:30
MFL-AM03-072524-HM	4080550-03	Air	07/25/24 23:59	08/05/24 10:30
MFL-AM04-072524-HM	4080550-04	Air	07/25/24 23:59	08/05/24 10:30
MFL-AM01-072624-HM	4080550-05	Air	07/26/24 23:59	08/05/24 10:30
MFL-AM02-072624-HM	4080550-06	Air	07/26/24 23:59	08/05/24 10:30
MFL-AM03-072624-HM	4080550-07	Air	07/26/24 23:59	08/05/24 10:30
MFL-AM04-072624-HM	4080550-08	Air	07/26/24 23:59	08/05/24 10:30
MFL-FB01-072624-HM	4080550-09	Air	07/26/24 00:05	08/05/24 10:30
MFL-AM01-072724-HM	4080550-10	Air	07/27/24 23:59	08/05/24 10:30
MFL-AM02-072724-HM	4080550-11	Air	07/27/24 23:59	08/05/24 10:30
MFL-AM03-072724-HM	4080550-12	Air	07/27/24 23:59	08/05/24 10:30
MFL-AM04-072724-HM	4080550-13	Air	07/27/24 23:59	08/05/24 10:30
MFL-AM01-072824-HM	4080550-14	Air	07/28/24 23:59	08/05/24 10:30
MFL-AM02-072824-HM	4080550-15	Air	07/28/24 23:59	08/05/24 10:30
MFL-AM03-072824-HM	4080550-16	Air	07/28/24 23:59	08/05/24 10:30
MFL-AM04-072824-HM	4080550-17	Air	07/28/24 23:59	08/05/24 10:30
MFL-FB01-072824-HM	4080550-18	Air	07/28/24 00:05	08/05/24 10:30
MFL-AM01-072924-HM	4080550-19	Air	07/29/24 23:59	08/05/24 10:30
MFL-AM02-072924-HM	4080550-20	Air	07/29/24 23:59	08/05/24 10:30

[redacted]

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/13/24 09:56
SUBMITTED: 03/11/24 to 08/05/24
AQS SITE CODE:
SITE CODE: Lahaina fires

MFL-AM03-072924-HM	4080550-21	Air	07/29/24 23:59	08/05/24 10:30
MFL-AM04-072924-HM	4080550-22	Air	07/29/24 23:59	08/05/24 10:30
MFL-AM01-073024-HM	4080550-23	Air	07/30/24 23:59	08/05/24 10:30
MFL-AM02-073024-HM	4080550-24	Air	07/30/24 23:59	08/05/24 10:30
MFL-AM03-073024-HM	4080550-25	Air	07/30/24 23:59	08/05/24 10:30
MFL-AM04-073024-HM	4080550-26	Air	07/30/24 23:59	08/05/24 10:30
MFL-FB01-073024-HM	4080550-27	Air	07/30/24 00:05	08/05/24 10:30
MFL-LB01-073024-HM	4080550-28	Air	07/30/24 00:05	08/05/24 10:30
MFL-AM01-073124-HM	4080550-29	Air	07/31/24 23:59	08/05/24 10:30
MFL-AM02-073124-HM	4080550-30	Air	07/31/24 23:59	08/05/24 10:30
MFL-AM03-073124-HM	4080550-31	Air	07/31/24 23:59	08/05/24 10:30
MFL-AM04-073124-HM	4080550-32	Air	07/31/24 23:59	08/05/24 10:30

[redacted]

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/13/24 09:56
SUBMITTED: 03/11/24 to 08/05/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-072524-HM
Matrix: Air
Lab ID: 4080550-01
Sample Volume: 1893.534 m³
Filter ID:
Sampled: 07/25/24 23:59
Received: 08/05/24 10:30
Analysis Date: 08/07/24 01:21

Comments: Q9539050 - 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**	**0.0813**	SL	**0.0332**
Arsenic	**7440-38-2**	**0.547**		**0.00805**
Barium	**7440-39-3**	**5.81**		**0.919**
Beryllium	**7440-41-7**	**0.0197**		**0.00275**
Cadmium	7440-43-9	0.0310	U	0.0637
Chromium	**7440-47-3**	**4.22**		**1.90**
Cobalt	**7440-48-4**	**0.750**		**0.0375**
Copper	**7440-50-8**	**190**		**2.26**
Lead	**7439-92-1**	**0.527**		**0.184**
Manganese	**7439-96-5**	**20.3**		**1.62**
Molybdenum	**7439-98-7**	**11.9**		**0.308**
Nickel	**7440-02-0**	**2.35**		**0.560**
Selenium	**7782-49-2**	**0.344**		**0.00770**
Thallium	**7440-28-0**	**0.00245**		**5.06E-4**
Vanadium	**7440-62-2**	**2.57**		**0.0455**
Zinc	7440-66-6	13.2	U	66.0

[redacted]

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/13/24 09:56
SUBMITTED: 03/11/24 to 08/05/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-072524-HM
Matrix: Air
Lab ID: 4080550-02
Sample Volume: 2126.896 m³
Filter ID:
Sampled: 07/25/24 23:59
Received: 08/05/24 10:30
Analysis Date: 08/06/24 18:43

Comments: Q9539047 - Received in good condition MS/MSD

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.172**	SL	**0.0295**
Arsenic	**7440-38-2**	**0.357**		**0.00717**
Barium	**7440-39-3**	**4.56**		**0.819**
Beryllium	**7440-41-7**	**0.0158**		**0.00245**
Cadmium	7440-43-9	0.0181	U	0.0567
Chromium	**7440-47-3**	**2.53**		**1.69**
Cobalt	**7440-48-4**	**0.476**		**0.0334**
Copper	**7440-50-8**	**34.5**		**2.01**
Lead	**7439-92-1**	**1.12**		**0.164**
Manganese	**7439-96-5**	**14.9**		**1.45**
Molybdenum	**7439-98-7**	**1.94**		**0.275**
Nickel	**7440-02-0**	**1.36**		**0.499**
Selenium	**7782-49-2**	**0.340**		**0.00685**
Thallium	**7440-28-0**	**0.00253**		**4.51E-4**
Vanadium	**7440-62-2**	**1.74**		**0.0405**
Zinc	7440-66-6	14.3	U	58.7

[redacted]

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/13/24 09:56
SUBMITTED: 03/11/24 to 08/05/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-072524-HM
Matrix: Air
Lab ID: 4080550-03
Sample Volume: 1873.796 m³
Filter ID:
Sampled: 07/25/24 23:59
Received: 08/05/24 10:30
Analysis Date: 08/07/24 01:39

Comments: Q9539046 - 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**	**0.0724**	SL	**0.0335**
Arsenic	**7440-38-2**	**0.435**		**0.00814**
Barium	**7440-39-3**	**3.95**		**0.929**
Beryllium	**7440-41-7**	**0.0266**		**0.00278**
Cadmium	7440-43-9	0.0210	U	0.0643
Chromium	**7440-47-3**	**3.52**		**1.92**
Cobalt	**7440-48-4**	**0.672**		**0.0379**
Copper	**7440-50-8**	**63.1**		**2.28**
Lead	**7439-92-1**	**0.630**		**0.186**
Manganese	**7439-96-5**	**16.5**		**1.64**
Molybdenum	**7439-98-7**	**3.73**		**0.312**
Nickel	**7440-02-0**	**2.30**		**0.566**
Selenium	**7782-49-2**	**0.351**		**0.00778**
Thallium	**7440-28-0**	**0.00268**		**5.11E-4**
Vanadium	**7440-62-2**	**1.56**		**0.0459**
Zinc	7440-66-6	22.6	U	66.7

[redacted]

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/13/24 09:56
SUBMITTED: 03/11/24 to 08/05/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-072524-HM
Matrix: Air
Lab ID: 4080550-04
Sample Volume: 1880.139 m³
Filter ID:
Sampled: 07/25/24 23:59
Received: 08/05/24 10:30
Analysis Date: 08/07/24 01:54

Comments: Q9539044 - 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**	**0.0873**	SL	**0.0334**
Arsenic	**7440-38-2**	**0.341**		**0.00811**
Barium	**7440-39-3**	**3.72**		**0.926**
Beryllium	**7440-41-7**	**0.0157**		**0.00277**
Cadmium	7440-43-9	0.0149	U	0.0641
Chromium	**7440-47-3**	**3.19**		**1.91**
Cobalt	**7440-48-4**	**0.459**		**0.0377**
Copper	**7440-50-8**	**48.1**		**2.28**
Lead	**7439-92-1**	**0.764**		**0.185**
Manganese	**7439-96-5**	**15.5**		**1.64**
Molybdenum	**7439-98-7**	**3.40**		**0.311**
Nickel	**7440-02-0**	**1.47**		**0.564**
Selenium	**7782-49-2**	**0.343**		**0.00775**
Thallium	**7440-28-0**	**0.00225**		**5.10E-4**
Vanadium	**7440-62-2**	**1.57**		**0.0458**
Zinc	7440-66-6	14.8	U	66.5

[redacted]

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/13/24 09:56
SUBMITTED: 03/11/24 to 08/05/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-072624-HM
Matrix: Air
Lab ID: 4080550-05
Sample Volume: 1932.215 m³
Filter ID:
Sampled: 07/26/24 23:59
Received: 08/05/24 10:30
Analysis Date: 08/07/24 02:09

Comments: Q9539043 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0656**	SL	**0.0325**
Arsenic	**7440-38-2**	**1.40**		**0.00789**
Barium	**7440-39-3**	**8.44**		**0.901**
Beryllium	**7440-41-7**	**0.0388**		**0.00269**
Cadmium	7440-43-9	0.0222	U	0.0624
Chromium	**7440-47-3**	**7.20**		**1.86**
Cobalt	**7440-48-4**	**1.69**		**0.0367**
Copper	**7440-50-8**	**157**		**2.21**
Lead	**7439-92-1**	**0.503**		**0.180**
Manganese	**7439-96-5**	**41.5**		**1.59**
Molybdenum	**7439-98-7**	**8.45**		**0.302**
Nickel	**7440-02-0**	**3.47**		**0.549**
Selenium	**7782-49-2**	**0.292**		**0.00754**
Thallium	**7440-28-0**	**0.00204**		**4.96E-4**
Vanadium	**7440-62-2**	**4.82**		**0.0445**
Zinc	7440-66-6	12.7	U	64.7

[redacted]

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/13/24 09:56
SUBMITTED: 03/11/24 to 08/05/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-072624-HM
Matrix: Air
Lab ID: 4080550-06
Sample Volume: 2141.539 m³
Filter ID:
Sampled: 07/26/24 23:59
Received: 08/05/24 10:30
Analysis Date: 08/07/24 02:26

Comments: Q9539042 - 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**	**0.0948**	SL	**0.0293**
Arsenic	**7440-38-2**	**0.347**		**0.00712**
Barium	**7440-39-3**	**4.85**		**0.813**
Beryllium	**7440-41-7**	**0.0155**		**0.00243**
Cadmium	7440-43-9	0.0172	U	0.0563
Chromium	**7440-47-3**	**3.34**		**1.68**
Cobalt	**7440-48-4**	**0.512**		**0.0331**
Copper	**7440-50-8**	**36.5**		**2.00**
Lead	**7439-92-1**	**0.883**		**0.163**
Manganese	**7439-96-5**	**15.0**		**1.44**
Molybdenum	**7439-98-7**	**2.14**		**0.273**
Nickel	**7440-02-0**	**1.50**		**0.495**
Selenium	**7782-49-2**	**0.198**		**0.00681**
Thallium	**7440-28-0**	**0.00117**		**4.47E-4**
Vanadium	**7440-62-2**	**1.63**		**0.0402**
Zinc	7440-66-6	11.0	U	58.3

[redacted]

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/13/24 09:56
SUBMITTED: 03/11/24 to 08/05/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-072624-HM
Matrix: Air
Lab ID: 4080550-07
Sample Volume: 1836.226 m³
Filter ID:
Sampled: 07/26/24 23:59
Received: 08/05/24 10:30
Analysis Date: 08/07/24 02:41

Comments: Q9539041 - 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**	**0.0490**	SL	**0.0342**
Arsenic	**7440-38-2**	**0.252**		**0.00830**
Barium	**7440-39-3**	**3.42**		**0.948**
Beryllium	**7440-41-7**	**0.0391**		**0.00284**
Cadmium	7440-43-9	0.0110	U	0.0657
Chromium	**7440-47-3**	**3.51**		**1.96**
Cobalt	**7440-48-4**	**0.600**		**0.0386**
Copper	**7440-50-8**	**35.4**		**2.33**
Lead	**7439-92-1**	**0.527**		**0.190**
Manganese	**7439-96-5**	**15.4**		**1.67**
Molybdenum	**7439-98-7**	**2.83**		**0.318**
Nickel	**7440-02-0**	**1.59**		**0.578**
Selenium	**7782-49-2**	**0.190**		**0.00794**
Thallium	**7440-28-0**	**0.00119**		**5.22E-4**
Vanadium	**7440-62-2**	**1.45**		**0.0469**
Zinc	7440-66-6	10.3	U	68.0

[redacted]

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/13/24 09:56
SUBMITTED: 03/11/24 to 08/05/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-072624-HM
Matrix: Air
Lab ID: 4080550-08
Sample Volume: 1825.34 m³
Filter ID:
Sampled: 07/26/24 23:59
Received: 08/05/24 10:30
Analysis Date: 08/07/24 02:55

Comments: Q9539040 - 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**	**0.108**	SL	**0.0344**
Arsenic	**7440-38-2**	**0.538**		**0.00835**
Barium	**7440-39-3**	**5.51**		**0.954**
Beryllium	**7440-41-7**	**0.0231**		**0.00285**
Cadmium	7440-43-9	0.0222	U	0.0660
Chromium	**7440-47-3**	**4.04**		**1.97**
Cobalt	**7440-48-4**	**0.786**		**0.0389**
Copper	**7440-50-8**	**52.8**		**2.34**
Lead	**7439-92-1**	**1.18**		**0.191**
Manganese	**7439-96-5**	**25.1**		**1.68**
Molybdenum	**7439-98-7**	**4.00**		**0.320**
Nickel	**7440-02-0**	**1.94**		**0.581**
Selenium	**7782-49-2**	**0.226**		**0.00799**
Thallium	**7440-28-0**	**0.00145**		**5.25E-4**
Vanadium	**7440-62-2**	**2.11**		**0.0472**
Zinc	7440-66-6	18.8	U	68.5

[redacted]

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/13/24 09:56
SUBMITTED: 03/11/24 to 08/05/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-FB01-072624-HM
Matrix: Air
Lab ID: 4080550-09
Sample Volume: 1932.215 m³
Filter ID:
Sampled: 07/26/24 00:05
Received: 08/05/24 10:30
Analysis Date: 08/07/24 03:09

Comments: Q9539037 - 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	0.0255	U, SL	0.0325
Arsenic	7440-38-2	0.00593	U	0.00789
Barium	7440-39-3	0.528	U	0.901
Beryllium	7440-41-7	7.22E-4	U	0.00269
Cadmium	7440-43-9	0.00161	U	0.0624
Chromium	7440-47-3	1.24	U	1.86
Cobalt	7440-48-4	0.0237	U	0.0367
Copper	7440-50-8	1.21	U	2.21
Lead	7439-92-1	0.0625	U	0.180
Manganese	7439-96-5	0.204	U	1.59
Molybdenum	7439-98-7	0.218	U	0.302
Nickel	7440-02-0	0.358	U	0.549
Selenium	7782-49-2	9.93E-4	U	0.00754
Thallium	7440-28-0	6.92E-5	U	4.96E-4
Vanadium	7440-62-2	0.00870	U	0.0445
Zinc	7440-66-6	5.38	U	64.7

[redacted]

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/13/24 09:56
SUBMITTED: 03/11/24 to 08/05/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-072724-HM
Matrix: Air
Lab ID: 4080550-10
Sample Volume: 1947.501 m³
Filter ID:
Sampled: 07/27/24 23:59
Received: 08/05/24 10:30
Analysis Date: 08/07/24 03:23

Comments: Q9539039 - 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**	**0.0674**	SL	**0.0322**
Arsenic	**7440-38-2**	**2.02**		**0.00783**
Barium	**7440-39-3**	**13.6**		**0.894**
Beryllium	**7440-41-7**	**0.0735**		**0.00267**
Cadmium	7440-43-9	0.0587	U	0.0619
Chromium	**7440-47-3**	**12.1**		**1.85**
Cobalt	**7440-48-4**	**3.07**		**0.0364**
Copper	**7440-50-8**	**119**		**2.20**
Lead	**7439-92-1**	**0.667**		**0.179**
Manganese	**7439-96-5**	**72.6**		**1.58**
Molybdenum	**7439-98-7**	**4.91**		**0.300**
Nickel	**7440-02-0**	**5.63**		**0.545**
Selenium	**7782-49-2**	**0.395**		**0.00749**
Thallium	**7440-28-0**	**0.00283**		**4.92E-4**
Vanadium	**7440-62-2**	**8.43**		**0.0442**
Zinc	7440-66-6	12.9	U	64.2

[redacted]

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/13/24 09:56
SUBMITTED: 03/11/24 to 08/05/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-072724-HM
Matrix: Air
Lab ID: 4080550-11
Sample Volume: 2164.269 m³
Filter ID:
Sampled: 07/27/24 23:59
Received: 08/05/24 10:30
Analysis Date: 08/07/24 04:34

Comments: Q9539038 - 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**	**0.0915**	SL	**0.0290**
Arsenic	**7440-38-2**	**0.726**		**0.00704**
Barium	**7440-39-3**	**8.92**		**0.804**
Beryllium	**7440-41-7**	**0.0278**		**0.00241**
Cadmium	7440-43-9	0.0270	U	0.0557
Chromium	**7440-47-3**	**4.58**		**1.66**
Cobalt	**7440-48-4**	**1.50**		**0.0328**
Copper	**7440-50-8**	**35.6**		**1.98**
Lead	**7439-92-1**	**1.58**		**0.161**
Manganese	**7439-96-5**	**67.2**		**1.42**
Molybdenum	**7439-98-7**	**1.83**		**0.270**
Nickel	**7440-02-0**	**2.46**		**0.490**
Selenium	**7782-49-2**	**0.243**		**0.00674**
Thallium	**7440-28-0**	**0.00377**		**4.43E-4**
Vanadium	**7440-62-2**	**3.13**		**0.0398**
Zinc	7440-66-6	16.1	U	57.7

[redacted]

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/13/24 09:56
SUBMITTED: 03/11/24 to 08/05/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-072724-HM
Matrix: Air
Lab ID: 4080550-12
Sample Volume: 1855.037 m³
Filter ID:
Sampled: 07/27/24 23:59
Received: 08/05/24 10:30
Analysis Date: 08/07/24 04:51

Comments: Q9539036 - 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**	**0.0470**	SL	**0.0339**
Arsenic	**7440-38-2**	**0.266**		**0.00822**
Barium	**7440-39-3**	**3.15**		**0.938**
Beryllium	**7440-41-7**	**0.0341**		**0.00281**
Cadmium	7440-43-9	0.00829	U	0.0650
Chromium	**7440-47-3**	**3.43**		**1.94**
Cobalt	**7440-48-4**	**0.557**		**0.0382**
Copper	**7440-50-8**	**35.8**		**2.31**
Lead	**7439-92-1**	**0.400**		**0.188**
Manganese	**7439-96-5**	**13.8**		**1.66**
Molybdenum	**7439-98-7**	**2.58**		**0.315**
Nickel	**7440-02-0**	**1.49**		**0.572**
Selenium	**7782-49-2**	**0.138**		**0.00786**
Thallium	**7440-28-0**	**9.06E-4**		**5.17E-4**
Vanadium	**7440-62-2**	**1.41**		**0.0464**
Zinc	7440-66-6	10.8	U	67.4

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CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/13/24 09:56
SUBMITTED: 03/11/24 to 08/05/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-072724-HM
Matrix: Air
Lab ID: 4080550-13
Sample Volume: 1912.412 m³
Filter ID:
Sampled: 07/27/24 23:59
Received: 08/05/24 10:30
Analysis Date: 08/07/24 05:05

Comments: Q9539034 - 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**	**0.0704**	SL	**0.0328**
Arsenic	**7440-38-2**	**0.591**		**0.00797**
Barium	**7440-39-3**	**3.55**		**0.910**
Beryllium	**7440-41-7**	**0.0171**		**0.00272**
Cadmium	7440-43-9	0.0135	U	0.0630
Chromium	**7440-47-3**	**3.14**		**1.88**
Cobalt	**7440-48-4**	**0.578**		**0.0371**
Copper	**7440-50-8**	**30.7**		**2.24**
Lead	**7439-92-1**	**0.978**		**0.182**
Manganese	**7439-96-5**	**16.4**		**1.61**
Molybdenum	**7439-98-7**	**1.76**		**0.305**
Nickel	**7440-02-0**	**1.41**		**0.555**
Selenium	**7782-49-2**	**0.149**		**0.00762**
Thallium	**7440-28-0**	**9.24E-4**		**5.01E-4**
Vanadium	**7440-62-2**	**1.38**		**0.0450**
Zinc	7440-66-6	11.5	U	65.3

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

FILE #: 4205.00.003.001
REPORTED: 08/13/24 09:56
SUBMITTED: 03/11/24 to 08/05/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-072824-HM
Matrix: Air
Lab ID: 4080550-14
Sample Volume: 1933.83 m³
Filter ID:
Sampled: 07/28/24 23:59
Received: 08/05/24 10:30
Analysis Date: 08/07/24 05:20

Comments: Q9539032 - 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**	**0.0586**	SL	**0.0325**
Arsenic	**7440-38-2**	**0.380**		**0.00788**
Barium	**7440-39-3**	**3.23**		**0.900**
Beryllium	**7440-41-7**	**0.00996**		**0.00269**
Cadmium	7440-43-9	0.0163	U	0.0623
Chromium	**7440-47-3**	**2.47**		**1.86**
Cobalt	**7440-48-4**	**0.336**		**0.0367**
Copper	**7440-50-8**	**194**		**2.21**
Lead	**7439-92-1**	**0.266**		**0.180**
Manganese	**7439-96-5**	**10.0**		**1.59**
Molybdenum	**7439-98-7**	**9.01**		**0.302**
Nickel	**7440-02-0**	**1.12**		**0.549**
Selenium	**7782-49-2**	**0.142**		**0.00754**
Thallium	**7440-28-0**	**6.67E-4**		**4.96E-4**
Vanadium	**7440-62-2**	**1.25**		**0.0445**
Zinc	7440-66-6	7.31	U	64.6

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CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/13/24 09:56
SUBMITTED: 03/11/24 to 08/05/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-072824-HM
Matrix: Air
Lab ID: 4080550-15
Sample Volume: 2148.721 m³
Filter ID:
Sampled: 07/28/24 23:59
Received: 08/05/24 10:30
Analysis Date: 08/07/24 05:47

Comments: Q9539031 - 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**	**0.0771**	SL	**0.0292**
Arsenic	**7440-38-2**	**0.250**		**0.00709**
Barium	**7440-39-3**	**3.08**		**0.810**
Beryllium	**7440-41-7**	**0.00902**		**0.00242**
Cadmium	7440-43-9	0.00782	U	0.0561
Chromium	**7440-47-3**	**1.92**		**1.67**
Cobalt	**7440-48-4**	**0.264**		**0.0330**
Copper	**7440-50-8**	**31.7**		**1.99**
Lead	**7439-92-1**	**0.578**		**0.162**
Manganese	**7439-96-5**	**8.38**		**1.43**
Molybdenum	**7439-98-7**	**1.79**		**0.272**
Nickel	**7440-02-0**	**0.869**		**0.494**
Selenium	**7782-49-2**	**0.143**		**0.00678**
Thallium	**7440-28-0**	**5.41E-4**		**4.46E-4**
Vanadium	**7440-62-2**	**0.999**		**0.0401**
Zinc	7440-66-6	8.02	U	58.2

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CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/13/24 09:56
SUBMITTED: 03/11/24 to 08/05/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-072824-HM
Matrix: Air
Lab ID: 4080550-16
Sample Volume: 1879.294 m³
Filter ID:
Sampled: 07/28/24 23:59
Received: 08/05/24 10:30
Analysis Date: 08/07/24 06:02

Comments: Q9539029 - 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**	**0.0428**	SL	**0.0334**
Arsenic	**7440-38-2**	**0.175**		**0.00811**
Barium	**7440-39-3**	**2.52**		**0.926**
Beryllium	**7440-41-7**	**0.0169**		**0.00277**
Cadmium	7440-43-9	0.0120	U	0.0642
Chromium	**7440-47-3**	**3.03**		**1.91**
Cobalt	**7440-48-4**	**0.336**		**0.0377**
Copper	**7440-50-8**	**53.3**		**2.28**
Lead	**7439-92-1**	**0.402**		**0.185**
Manganese	**7439-96-5**	**9.36**		**1.64**
Molybdenum	**7439-98-7**	**3.97**		**0.311**
Nickel	**7440-02-0**	**1.48**		**0.564**
Selenium	**7782-49-2**	**0.148**		**0.00776**
Thallium	**7440-28-0**	**7.14E-4**		**5.10E-4**
Vanadium	**7440-62-2**	**1.08**		**0.0458**
Zinc	7440-66-6	12.0	U	66.5

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CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/13/24 09:56
SUBMITTED: 03/11/24 to 08/05/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-072824-HM
Matrix: Air
Lab ID: 4080550-17
Sample Volume: 1826.87 m³
Filter ID:
Sampled: 07/28/24 23:59
Received: 08/05/24 10:30
Analysis Date: 08/07/24 06:15

Comments: Q9539028 - 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**	**0.0695**	SL	**0.0344**
Arsenic	**7440-38-2**	**0.266**		**0.00834**
Barium	**7440-39-3**	**3.39**		**0.953**
Beryllium	**7440-41-7**	**0.00921**		**0.00285**
Cadmium	7440-43-9	0.0110	U	0.0660
Chromium	**7440-47-3**	**2.88**		**1.97**
Cobalt	**7440-48-4**	**0.336**		**0.0388**
Copper	**7440-50-8**	**48.2**		**2.34**
Lead	**7439-92-1**	**0.672**		**0.191**
Manganese	**7439-96-5**	**10.2**		**1.68**
Molybdenum	**7439-98-7**	**2.67**		**0.320**
Nickel	**7440-02-0**	**1.43**		**0.581**
Selenium	**7782-49-2**	**0.163**		**0.00798**
Thallium	**7440-28-0**	**6.33E-4**		**5.25E-4**
Vanadium	**7440-62-2**	**1.10**		**0.0471**
Zinc	7440-66-6	10.4	U	68.4

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CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/13/24 09:56
SUBMITTED: 03/11/24 to 08/05/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-FB01-072824-HM
Matrix: Air
Lab ID: 4080550-18
Sample Volume: 1933.83 m³
Filter ID:
Sampled: 07/28/24 00:05
Received: 08/05/24 10:30
Analysis Date: 08/07/24 06:30

Comments: Q9539022 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	7440-36-0	0.0104	SL, U	0.0325
Arsenic	7440-38-2	0.00575	U	0.00788
Barium	7440-39-3	0.524	U	0.900
Beryllium	7440-41-7	7.27E-4	U	0.00269
Cadmium	7440-43-9	0.00157	U	0.0623
Chromium	7440-47-3	1.20	U	1.86
Cobalt	7440-48-4	0.0240	U	0.0367
Copper	7440-50-8	0.778	U	2.21
Lead	7439-92-1	0.0414	U	0.180
Manganese	7439-96-5	0.162	U	1.59
Molybdenum	**7439-98-7**	**0.315**	FB-01	**0.302**
Nickel	7440-02-0	0.289	U	0.549
Selenium	7782-49-2	0.00383	U	0.00754
Thallium	7440-28-0	5.01E-5	U	4.96E-4
Vanadium	7440-62-2	0.0119	U	0.0445
Zinc	7440-66-6	2.81	U	64.6

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CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/13/24 09:56
SUBMITTED: 03/11/24 to 08/05/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-072924-HM
Matrix: Air
Lab ID: 4080550-19
Sample Volume: 1947.501 m³
Filter ID:
Sampled: 07/29/24 23:59
Received: 08/05/24 10:30
Analysis Date: 08/07/24 06:44

Comments: Q9539027 - 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**	**0.0453**	SL	**0.0322**
Arsenic	**7440-38-2**	**0.588**		**0.00783**
Barium	**7440-39-3**	**4.29**		**0.894**
Beryllium	**7440-41-7**	**0.0139**		**0.00267**
Cadmium	7440-43-9	0.0116	U	0.0619
Chromium	**7440-47-3**	**3.62**		**1.85**
Cobalt	**7440-48-4**	**0.640**		**0.0364**
Copper	**7440-50-8**	**169**		**2.20**
Lead	**7439-92-1**	**0.316**		**0.179**
Manganese	**7439-96-5**	**15.9**		**1.58**
Molybdenum	**7439-98-7**	**7.85**		**0.300**
Nickel	**7440-02-0**	**1.59**		**0.545**
Selenium	**7782-49-2**	**0.160**		**0.00749**
Thallium	**7440-28-0**	**8.76E-4**		**4.92E-4**
Vanadium	**7440-62-2**	**1.96**		**0.0442**
Zinc	7440-66-6	7.58	U	64.2

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CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/13/24 09:56
SUBMITTED: 03/11/24 to 08/05/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-072924-HM
Matrix: Air
Lab ID: 4080550-20
Sample Volume: 2126.896 m³
Filter ID:
Sampled: 07/29/24 23:59
Received: 08/05/24 10:30
Analysis Date: 08/07/24 07:53

Comments: Q9539025 - 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**	**0.110**	SL	**0.0295**
Arsenic	**7440-38-2**	**0.306**		**0.00717**
Barium	**7440-39-3**	**4.42**		**0.819**
Beryllium	**7440-41-7**	**0.00944**		**0.00245**
Cadmium	7440-43-9	0.00733	U	0.0567
Chromium	**7440-47-3**	**2.12**		**1.69**
Cobalt	**7440-48-4**	**0.316**		**0.0334**
Copper	**7440-50-8**	**26.4**		**2.01**
Lead	**7439-92-1**	**0.684**		**0.164**
Manganese	**7439-96-5**	**9.47**		**1.45**
Molybdenum	**7439-98-7**	**1.43**		**0.275**
Nickel	**7440-02-0**	**0.978**		**0.499**
Selenium	**7782-49-2**	**0.151**		**0.00685**
Thallium	**7440-28-0**	**6.91E-4**		**4.51E-4**
Vanadium	**7440-62-2**	**1.04**		**0.0405**
Zinc	7440-66-6	11.8	U	58.7

[redacted]

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/13/24 09:56
SUBMITTED: 03/11/24 to 08/05/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-072924-HM
Matrix: Air
Lab ID: 4080550-21
Sample Volume: 1836.993 m³
Filter ID:
Sampled: 07/29/24 23:59
Received: 08/05/24 10:30
Analysis Date: 08/07/24 08:07

Comments: Q9539024 - 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**	**0.0418**	SL	**0.0342**
Arsenic	**7440-38-2**	**0.221**		**0.00830**
Barium	**7440-39-3**	**2.00**		**0.948**
Beryllium	**7440-41-7**	**0.0151**		**0.00283**
Cadmium	7440-43-9	0.00624	U	0.0656
Chromium	**7440-47-3**	**2.38**		**1.96**
Cobalt	**7440-48-4**	**0.276**		**0.0386**
Copper	**7440-50-8**	**33.5**		**2.33**
Lead	**7439-92-1**	**0.438**		**0.190**
Manganese	**7439-96-5**	**6.93**		**1.67**
Molybdenum	**7439-98-7**	**2.67**		**0.318**
Nickel	**7440-02-0**	**0.925**		**0.577**
Selenium	**7782-49-2**	**0.123**		**0.00794**
Thallium	**7440-28-0**	**5.49E-4**		**5.22E-4**
Vanadium	**7440-62-2**	**0.789**		**0.0469**
Zinc	7440-66-6	8.31	U	68.0

[redacted]

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

FILE #: 4205.00.003.001
REPORTED: 08/13/24 09:56
SUBMITTED: 03/11/24 to 08/05/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-072924-HM
Matrix: Air
Lab ID: 4080550-22
Sample Volume: 1907.633 m³
Filter ID:
Sampled: 07/29/24 23:59
Received: 08/05/24 10:30
Analysis Date: 08/06/24 22:28

Comments: Q9539021 - Received in good condition MS/MSD

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0796**	SL	**0.0329**
Arsenic	**7440-38-2**	**0.432**		**0.00799**
Barium	**7440-39-3**	**3.36**		**0.913**
Beryllium	**7440-41-7**	**0.0103**		**0.00273**
Cadmium	7440-43-9	0.0114	U	0.0632
Chromium	**7440-47-3**	**2.44**		**1.88**
Cobalt	**7440-48-4**	**0.350**		**0.0372**
Copper	**7440-50-8**	**37.7**		**2.24**
Lead	**7439-92-1**	**0.946**		**0.183**
Manganese	**7439-96-5**	**11.2**		**1.61**
Molybdenum	**7439-98-7**	**2.11**		**0.306**
Nickel	**7440-02-0**	**1.06**		**0.556**
Selenium	**7782-49-2**	**0.143**		**0.00764**
Thallium	**7440-28-0**	**7.10E-4**		**5.02E-4**
Vanadium	**7440-62-2**	**1.01**		**0.0451**
Zinc	7440-66-6	10.5	U	65.5

[redacted]

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/13/24 09:56
SUBMITTED: 03/11/24 to 08/05/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-073024-HM
Matrix: Air
Lab ID: 4080550-23
Sample Volume: 1936.254 m³
Filter ID:
Sampled: 07/30/24 23:59
Received: 08/05/24 10:30
Analysis Date: 08/07/24 08:21

Comments: Q9539020 - 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**	**0.0744**	SL	**0.0324**
Arsenic	**7440-38-2**	**1.15**		**0.00787**
Barium	**7440-39-3**	**7.57**		**0.899**
Beryllium	**7440-41-7**	**0.0317**		**0.00269**
Cadmium	7440-43-9	0.0191	U	0.0623
Chromium	**7440-47-3**	**6.11**		**1.86**
Cobalt	**7440-48-4**	**1.32**		**0.0366**
Copper	**7440-50-8**	**177**		**2.21**
Lead	**7439-92-1**	**0.795**		**0.180**
Manganese	**7439-96-5**	**33.8**		**1.59**
Molybdenum	**7439-98-7**	**8.71**		**0.302**
Nickel	**7440-02-0**	**3.11**		**0.548**
Selenium	**7782-49-2**	**0.214**		**0.00753**
Thallium	**7440-28-0**	**0.00160**		**4.95E-4**
Vanadium	**7440-62-2**	**3.88**		**0.0445**
Zinc	7440-66-6	15.3	U	64.5

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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: 08/13/24 09:56
SUBMITTED: 03/11/24 to 08/05/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-073024-HM
Matrix: Air
Lab ID: 4080550-24
Sample Volume: 2163.08 m³
Filter ID:
Sampled: 07/30/24 23:59
Received: 08/05/24 10:30
Analysis Date: 08/07/24 08:40

Comments: Q9539019 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0777**	SL	**0.0290**
Arsenic	**7440-38-2**	**0.293**		**0.00705**
Barium	**7440-39-3**	**4.04**		**0.805**
Beryllium	**7440-41-7**	**0.0141**		**0.00241**
Cadmium	7440-43-9	0.0355	U	0.0557
Chromium	**7440-47-3**	**2.97**		**1.66**
Cobalt	**7440-48-4**	**0.517**		**0.0328**
Copper	**7440-50-8**	**41.6**		**1.98**
Lead	**7439-92-1**	**0.657**		**0.161**
Manganese	**7439-96-5**	**15.3**		**1.42**
Molybdenum	**7439-98-7**	**2.25**		**0.270**
Nickel	**7440-02-0**	**1.45**		**0.490**
Selenium	**7782-49-2**	**0.152**		**0.00674**
Thallium	**7440-28-0**	**9.17E-4**		**4.43E-4**
Vanadium	**7440-62-2**	**1.54**		**0.0398**
Zinc	7440-66-6	9.45	U	57.8

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Tetra Tech, Inc.
1777 Sentry Pkwy, Bldg 12
Blue Bell, PA 19422
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FILE #: 4205.00.003.001
REPORTED: 08/13/24 09:56
SUBMITTED: 03/11/24 to 08/05/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-073024-HM
Matrix: Air
Lab ID: 4080550-25
Sample Volume: 1774.284 m³
Filter ID:
Sampled: 07/30/24 23:59
Received: 08/05/24 10:30
Analysis Date: 08/07/24 08:54

Comments: Q9539018 - 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	**0.0354**
Arsenic	**7440-38-2**	**0.297**		**0.00859**
Barium	**7440-39-3**	**3.06**		**0.981**
Beryllium	**7440-41-7**	**0.0232**		**0.00293**
Cadmium	7440-43-9	0.00809	U	0.0679
Chromium	**7440-47-3**	**4.73**		**2.03**
Cobalt	**7440-48-4**	**0.518**		**0.0400**
Copper	**7440-50-8**	**37.3**		**2.41**
Lead	**7439-92-1**	**0.480**		**0.196**
Manganese	**7439-96-5**	**12.4**		**1.73**
Molybdenum	**7439-98-7**	**2.75**		**0.329**
Nickel	**7440-02-0**	**2.16**		**0.598**
Selenium	**7782-49-2**	**0.128**		**0.00822**
Thallium	**7440-28-0**	**7.17E-4**		**5.40E-4**
Vanadium	**7440-62-2**	**1.28**		**0.0485**
Zinc	7440-66-6	13.9	U	70.4

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

FILE #: 4205.00.003.001
REPORTED: 08/13/24 09:56
SUBMITTED: 03/11/24 to 08/05/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-073024-HM
Matrix: Air
Lab ID: 4080550-26
Sample Volume: 1991.321 m³
Filter ID:
Sampled: 07/30/24 23:59
Received: 08/05/24 10:30
Analysis Date: 08/07/24 09:07

Comments: Q9539017 - 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**	**0.0694**	SL	**0.0315**
Arsenic	**7440-38-2**	**0.448**		**0.00766**
Barium	**7440-39-3**	**3.69**		**0.874**
Beryllium	**7440-41-7**	**0.0168**		**0.00261**
Cadmium	7440-43-9	0.0112	U	0.0605
Chromium	**7440-47-3**	**3.05**		**1.81**
Cobalt	**7440-48-4**	**0.482**		**0.0356**
Copper	**7440-50-8**	**38.8**		**2.15**
Lead	**7439-92-1**	**0.759**		**0.175**
Manganese	**7439-96-5**	**16.0**		**1.54**
Molybdenum	**7439-98-7**	**1.88**		**0.293**
Nickel	**7440-02-0**	**1.26**		**0.533**
Selenium	**7782-49-2**	**0.146**		**0.00732**
Thallium	**7440-28-0**	**8.14E-4**		**4.81E-4**
Vanadium	**7440-62-2**	**1.26**		**0.0432**
Zinc	7440-66-6	11.1	U	62.7

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Tetra Tech, Inc.
1777 Sentry Pkwy, Bldg 12
Blue Bell, PA 19422
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FILE #: 4205.00.003.001
REPORTED: 08/13/24 09:56
SUBMITTED: 03/11/24 to 08/05/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-FB01-073024-HM
Matrix: Air
Lab ID: 4080550-27
Sample Volume: 1936.254 m³
Filter ID:
Sampled: 07/30/24 00:05
Received: 08/05/24 10:30
Analysis Date: 08/07/24 09:35

Comments: Q9547523 - 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	0.0122	SL, U	0.0324
Arsenic	7440-38-2	0.00785	U	0.00787
Barium	7440-39-3	0.421	U	0.899
Beryllium	7440-41-7	6.81E-4	U	0.00269
Cadmium	7440-43-9	0.00286	U	0.0623
Chromium	7440-47-3	1.14	U	1.86
Cobalt	7440-48-4	0.0257	U	0.0366
Copper	7440-50-8	1.11	U	2.21
Lead	7439-92-1	0.0452	U	0.180
Manganese	7439-96-5	0.232	U	1.59
Molybdenum	7439-98-7	0.207	U	0.302
Nickel	7440-02-0	0.256	U	0.548
Selenium	7782-49-2	0.00131	U	0.00753
Thallium	7440-28-0	5.96E-5	U	4.95E-4
Vanadium	7440-62-2	0.0119	U	0.0445
Zinc	7440-66-6	2.66	U	64.5

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CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/13/24 09:56
SUBMITTED: 03/11/24 to 08/05/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-LB01-073024-HM
Matrix: Air
Lab ID: 4080550-28
Sample Volume: 1936.254 m³
Filter ID:
Sampled: 07/30/24 00:05
Received: 08/05/24 10:30
Analysis Date: 08/07/24 09:49

Comments: Q9547529 - 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	0.0121	SL, U	0.0324
Arsenic	7440-38-2	0.00556	U	0.00787
Barium	7440-39-3	0.405	U	0.899
Beryllium	7440-41-7	4.36E-4	U	0.00269
Cadmium	7440-43-9	0.00257	U	0.0623
Chromium	7440-47-3	1.18	U	1.86
Cobalt	7440-48-4	0.0237	U	0.0366
Copper	7440-50-8	0.500	U	2.21
Lead	7439-92-1	0.0324	U	0.180
Manganese	7439-96-5	0.172	U	1.59
Molybdenum	7439-98-7	0.189	U	0.302
Nickel	7440-02-0	0.290	U	0.548
Selenium	7782-49-2	0.00169	U	0.00753
Thallium	7440-28-0	6.00E-5	U	4.95E-4
Vanadium	7440-62-2	0.00694	U	0.0445
Zinc	7440-66-6	2.03	U	64.5

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CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/13/24 09:56
SUBMITTED: 03/11/24 to 08/05/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-073124-HM
Matrix: Air
Lab ID: 4080550-29
Sample Volume: 1928.176 m³
Filter ID:
Sampled: 07/31/24 23:59
Received: 08/05/24 10:30
Analysis Date: 08/07/24 10:03

Comments: Q9539016 - 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**	**0.169**	SL	**0.0326**
Arsenic	**7440-38-2**	**2.16**		**0.00791**
Barium	**7440-39-3**	**7.43**		**0.903**
Beryllium	**7440-41-7**	**0.0264**		**0.00270**
Cadmium	**7440-43-9**	**0.0704**		**0.0625**
Chromium	**7440-47-3**	**6.54**		**1.86**
Cobalt	**7440-48-4**	**1.32**		**0.0368**
Copper	**7440-50-8**	**159**		**2.22**
Lead	**7439-92-1**	**0.536**		**0.181**
Manganese	**7439-96-5**	**31.0**		**1.59**
Molybdenum	**7439-98-7**	**7.51**		**0.303**
Nickel	**7440-02-0**	**3.28**		**0.550**
Selenium	**7782-49-2**	**0.218**		**0.00756**
Thallium	**7440-28-0**	**0.00143**		**4.97E-4**
Vanadium	**7440-62-2**	**3.69**		**0.0446**
Zinc	7440-66-6	11.8	U	64.8

[redacted]

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/13/24 09:56
SUBMITTED: 03/11/24 to 08/05/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-073124-HM
Matrix: Air
Lab ID: 4080550-30
Sample Volume: 2157.027 m³
Filter ID:
Sampled: 07/31/24 23:59
Received: 08/05/24 10:30
Analysis Date: 08/07/24 11:12

Comments: Q9547528 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.149**	SL	**0.0291**
Arsenic	**7440-38-2**	**0.301**		**0.00707**
Barium	**7440-39-3**	**6.02**		**0.807**
Beryllium	**7440-41-7**	**0.0152**		**0.00241**
Cadmium	7440-43-9	0.0148	U	0.0559
Chromium	**7440-47-3**	**2.96**		**1.67**
Cobalt	**7440-48-4**	**0.588**		**0.0329**
Copper	**7440-50-8**	**37.3**		**1.98**
Lead	**7439-92-1**	**0.844**		**0.161**
Manganese	**7439-96-5**	**16.6**		**1.43**
Molybdenum	**7439-98-7**	**1.80**		**0.271**
Nickel	**7440-02-0**	**1.57**		**0.492**
Selenium	**7782-49-2**	**0.179**		**0.00676**
Thallium	**7440-28-0**	**0.00101**		**4.44E-4**
Vanadium	**7440-62-2**	**1.73**		**0.0399**
Zinc	7440-66-6	13.3	U	57.9

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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: 08/13/24 09:56
SUBMITTED: 03/11/24 to 08/05/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-073124-HM
Matrix: Air
Lab ID: 4080550-31
Sample Volume: 1894.09 m³
Filter ID:
Sampled: 07/31/24 23:59
Received: 08/05/24 10:30
Analysis Date: 08/07/24 11:28

Comments: Q9547526 - 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**	**0.0726**	SL	**0.0332**
Arsenic	**7440-38-2**	**0.270**		**0.00805**
Barium	**7440-39-3**	**4.03**		**0.919**
Beryllium	**7440-41-7**	**0.0228**		**0.00275**
Cadmium	7440-43-9	0.0127	U	0.0637
Chromium	**7440-47-3**	**3.18**		**1.90**
Cobalt	**7440-48-4**	**0.577**		**0.0375**
Copper	**7440-50-8**	**62.4**		**2.26**
Lead	**7439-92-1**	**0.525**		**0.184**
Manganese	**7439-96-5**	**13.3**		**1.62**
Molybdenum	**7439-98-7**	**4.18**		**0.308**
Nickel	**7440-02-0**	**2.64**		**0.560**
Selenium	**7782-49-2**	**0.213**		**0.00770**
Thallium	**7440-28-0**	**9.76E-4**		**5.06E-4**
Vanadium	**7440-62-2**	**1.23**		**0.0454**
Zinc	7440-66-6	19.9	U	66.0

[redacted]

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/13/24 09:56
SUBMITTED: 03/11/24 to 08/05/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-073124-HM
Matrix: Air
Lab ID: 4080550-32
Sample Volume: 1838.749 m³
Filter ID:
Sampled: 07/31/24 23:59
Received: 08/05/24 10:30
Analysis Date: 08/07/24 11:42

Comments: Q9547524 - 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**	**0.109**	SL	**0.0342**
Arsenic	**7440-38-2**	**0.570**		**0.00829**
Barium	**7440-39-3**	**5.17**		**0.947**
Beryllium	**7440-41-7**	**0.0209**		**0.00283**
Cadmium	7440-43-9	0.0256	U	0.0656
Chromium	**7440-47-3**	**3.72**		**1.96**
Cobalt	**7440-48-4**	**0.705**		**0.0386**
Copper	**7440-50-8**	**41.6**		**2.33**
Lead	**7439-92-1**	**1.18**		**0.189**
Manganese	**7439-96-5**	**23.3**		**1.67**
Molybdenum	**7439-98-7**	**1.91**		**0.318**
Nickel	**7440-02-0**	**1.89**		**0.577**
Selenium	**7782-49-2**	**0.209**		**0.00793**
Thallium	**7440-28-0**	**0.00118**		**5.21E-4**
Vanadium	**7440-62-2**	**1.81**		**0.0468**
Zinc	7440-66-6	14.5	U	68.0

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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 2408018 - B4H0605										
Calibration Blank (2408018-CCB1)				Prepared & Analyzed: 08/06/24						
Antimony	0.771		ng/l							
Arsenic	4.25		ng/l							
Barium	0.994		ng/l							
Beryllium	-0.738		ng/l							U
Cadmium	0.136		ng/l							
Chromium	1.46		ng/l							
Cobalt	-0.0108		ng/l							U
Copper	163		ng/l							
Lead	2.17		ng/l							
Manganese	2.24		ng/l							
Molybdenum	13.8		ng/l							
Nickel	1.00		ng/l							
Selenium	4.86		ng/l							
Thallium	0.774		ng/l							
Vanadium	-82.3		ng/l							U
Zinc	-173		ng/l							U
Calibration Blank (2408018-CCB2)				Prepared & Analyzed: 08/06/24						
Antimony	0.678		ng/l							
Arsenic	2.32		ng/l							
Barium	3.43		ng/l							
Beryllium	-0.479		ng/l							U
Cadmium	0.339		ng/l							
Chromium	3.01		ng/l							
Cobalt	0.656		ng/l							
Copper	104		ng/l							
Lead	3.06		ng/l							
Manganese	6.45		ng/l							
Molybdenum	-5.73		ng/l							U
Nickel	3.70		ng/l							
Selenium	15.2		ng/l							
Thallium	0.788		ng/l							
Vanadium	-81.5		ng/l							U
Zinc	-206		ng/l							U
Calibration Blank (2408018-CCB3)				Prepared: 08/06/24 Analyzed: 08/07/24						
Antimony	0.632		ng/l							
Arsenic	4.14		ng/l							
Barium	4.78		ng/l							
Beryllium	-0.779		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 2408018 - B4H0605										
Calibration Blank (2408018-CCB3) Contin				Prepared: 08/06/24 Analyzed: 08/07/24						
Cadmium	0.0255		ng/l							
Chromium	3.86		ng/l							
Cobalt	0.429		ng/l							
Copper	86.3		ng/l							
Lead	3.12		ng/l							
Manganese	6.08		ng/l							
Molybdenum	-6.84		ng/l							U
Nickel	2.48		ng/l							
Selenium	6.77		ng/l							
Thallium	0.954		ng/l							
Vanadium	-87.9		ng/l							U
Zinc	-268		ng/l							U
Calibration Blank (2408018-CCB4)				Prepared: 08/06/24 Analyzed: 08/07/24						
Antimony	0.404		ng/l							
Arsenic	8.40		ng/l							
Barium	3.33		ng/l							
Beryllium	-1.25		ng/l							U
Cadmium	0.127		ng/l							
Chromium	2.95		ng/l							
Cobalt	0.468		ng/l							
Copper	57.4		ng/l							
Lead	2.31		ng/l							
Manganese	3.77		ng/l							
Molybdenum	-6.35		ng/l							U
Nickel	4.60		ng/l							
Selenium	19.2		ng/l							
Thallium	0.835		ng/l							
Vanadium	-88.6		ng/l							U
Zinc	-265		ng/l							U
Calibration Blank (2408018-CCB5)				Prepared: 08/06/24 Analyzed: 08/07/24						
Antimony	0.264		ng/l							
Arsenic	6.22		ng/l							
Barium	2.28		ng/l							
Beryllium	-1.23		ng/l							U
Cadmium	0.388		ng/l							
Chromium	4.18		ng/l							
Cobalt	0.381		ng/l							
Copper	73.1		ng/l							

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2408018 - B4H0605										
Calibration Blank (2408018-CCB5) Contin				Prepared: 08/06/24 Analyzed: 08/07/24						
Lead	2.52		ng/l							
Manganese	6.60		ng/l							
Molybdenum	-5.73		ng/l							U
Nickel	6.85		ng/l							
Selenium	4.45		ng/l							
Thallium	1.03		ng/l							
Vanadium	-90.0		ng/l							U
Zinc	-267		ng/l							U
Calibration Blank (2408018-CCB6)				Prepared: 08/06/24 Analyzed: 08/07/24						
Antimony	0.325		ng/l							
Arsenic	8.16		ng/l							
Barium	1.83		ng/l							
Beryllium	-1.44		ng/l							U
Cadmium	0.230		ng/l							
Chromium	4.47		ng/l							
Cobalt	0.528		ng/l							
Copper	57.0		ng/l							
Lead	1.91		ng/l							
Manganese	5.87		ng/l							
Molybdenum	-7.25		ng/l							U
Nickel	5.81		ng/l							
Selenium	-5.45		ng/l							U
Thallium	0.980		ng/l							
Vanadium	-90.1		ng/l							U
Zinc	-273		ng/l							U
Calibration Blank (2408018-CCB7)				Prepared: 08/06/24 Analyzed: 08/07/24						
Antimony	0.515		ng/l							
Arsenic	10.6		ng/l							
Barium	2.89		ng/l							
Beryllium	-1.50		ng/l							U
Cadmium	0.270		ng/l							
Chromium	4.26		ng/l							
Cobalt	0.499		ng/l							
Copper	74.2		ng/l							
Lead	1.61		ng/l							
Manganese	4.14		ng/l							
Molybdenum	-5.28		ng/l							U
Nickel	5.48		ng/l							

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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2408018 - B4H0605										
Calibration Blank (2408018-CCB7) Contin				Prepared: 08/06/24 Analyzed: 08/07/24						
Selenium	-0.786		ng/l							U
Thallium	1.03		ng/l							
Vanadium	-98.8		ng/l							U
Zinc	-276		ng/l							U
Calibration Check (2408018-CCV1)				Prepared & Analyzed: 08/06/24						
Antimony	19900		ng/l	20000		99.6	90-110			
Arsenic	20000		ng/l	20000		99.8	90-110			
Barium	200000		ng/l	200000		100	90-110			
Beryllium	5060		ng/l	5000.0		101	90-110			
Cadmium	20100		ng/l	20000		100	90-110			
Chromium	240000		ng/l	240000		100	90-110			
Cobalt	50900		ng/l	50000		102	90-110			
Copper	2.04E6		ng/l	2.0000E6		102	90-110			
Lead	199000		ng/l	200000		99.5	90-110			
Manganese	498000		ng/l	500000		99.7	90-110			
Molybdenum	50000		ng/l	50000		99.9	90-110			
Nickel	122000		ng/l	120000		102	90-110			
Selenium	20100		ng/l	20000		100	90-110			
Thallium	499		ng/l	500.00		99.9	90-110			
Vanadium	19700		ng/l	20000		98.7	90-110			
Zinc	508000		ng/l	500000		102	90-110			
Calibration Check (2408018-CCV2)				Prepared & Analyzed: 08/06/24						
Antimony	20100		ng/l	20000		100	90-110			
Arsenic	20000		ng/l	20000		100	90-110			
Barium	201000		ng/l	200000		100	90-110			
Beryllium	5040		ng/l	5000.0		101	90-110			
Cadmium	20300		ng/l	20000		102	90-110			
Chromium	241000		ng/l	240000		100	90-110			
Cobalt	50600		ng/l	50000		101	90-110			
Copper	2.04E6		ng/l	2.0000E6		102	90-110			
Lead	199000		ng/l	200000		99.4	90-110			
Manganese	502000		ng/l	500000		100	90-110			
Molybdenum	50000		ng/l	50000		100	90-110			
Nickel	122000		ng/l	120000		102	90-110			
Selenium	20000		ng/l	20000		99.8	90-110			
Thallium	494		ng/l	500.00		98.8	90-110			
Vanadium	19800		ng/l	20000		99.2	90-110			
Zinc	510000		ng/l	500000		102	90-110			

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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2408018 - B4H0605										
Calibration Check (2408018-CCV3)				Prepared: 08/06/24 Analyzed: 08/07/24						
Antimony	20300		ng/l	20000		101	90-110			
Arsenic	20300		ng/l	20000		101	90-110			
Barium	204000		ng/l	200000		102	90-110			
Beryllium	5090		ng/l	5000.0		102	90-110			
Cadmium	20400		ng/l	20000		102	90-110			
Chromium	244000		ng/l	240000		101	90-110			
Cobalt	51000		ng/l	50000		102	90-110			
Copper	2.08E6		ng/l	2.0000E6		104	90-110			
Lead	201000		ng/l	200000		100	90-110			
Manganese	507000		ng/l	500000		101	90-110			
Molybdenum	51200		ng/l	50000		102	90-110			
Nickel	123000		ng/l	120000		103	90-110			
Selenium	20200		ng/l	20000		101	90-110			
Thallium	492		ng/l	500.00		98.3	90-110			
Vanadium	20200		ng/l	20000		101	90-110			
Zinc	514000		ng/l	500000		103	90-110			
Calibration Check (2408018-CCV4)				Prepared: 08/06/24 Analyzed: 08/07/24						
Antimony	20500		ng/l	20000		103	90-110			
Arsenic	20800		ng/l	20000		104	90-110			
Barium	209000		ng/l	200000		104	90-110			
Beryllium	5250		ng/l	5000.0		105	90-110			
Cadmium	20800		ng/l	20000		104	90-110			
Chromium	249000		ng/l	240000		104	90-110			
Cobalt	52400		ng/l	50000		105	90-110			
Copper	2.13E6		ng/l	2.0000E6		106	90-110			
Lead	204000		ng/l	200000		102	90-110			
Manganese	520000		ng/l	500000		104	90-110			
Molybdenum	52500		ng/l	50000		105	90-110			
Nickel	127000		ng/l	120000		105	90-110			
Selenium	20100		ng/l	20000		101	90-110			
Thallium	502		ng/l	500.00		100	90-110			
Vanadium	20700		ng/l	20000		103	90-110			
Zinc	520000		ng/l	500000		104	90-110			
Calibration Check (2408018-CCV5)				Prepared: 08/06/24 Analyzed: 08/07/24						
Antimony	19900		ng/l	20000		99.6	90-110			
Arsenic	20200		ng/l	20000		101	90-110			
Barium	203000		ng/l	200000		101	90-110			
Beryllium	5200		ng/l	5000.0		104	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 2408018 - B4H0605										
Calibration Check (2408018-CCV5) Contin					Prepared: 08/06/24 Analyzed: 08/07/24					
Cadmium	20100		ng/l	20000		100	90-110			
Chromium	242000		ng/l	240000		101	90-110			
Cobalt	50800		ng/l	50000		102	90-110			
Copper	2.07E6		ng/l	2.0000E6		104	90-110			
Lead	198000		ng/l	200000		99.2	90-110			
Manganese	507000		ng/l	500000		101	90-110			
Molybdenum	51100		ng/l	50000		102	90-110			
Nickel	122000		ng/l	120000		102	90-110			
Selenium	19900		ng/l	20000		99.4	90-110			
Thallium	476		ng/l	500.00		95.1	90-110			
Vanadium	20100		ng/l	20000		100	90-110			
Zinc	508000		ng/l	500000		102	90-110			
Calibration Check (2408018-CCV6)					Prepared: 08/06/24 Analyzed: 08/07/24					
Antimony	20700		ng/l	20000		103	90-110			
Arsenic	20900		ng/l	20000		104	90-110			
Barium	209000		ng/l	200000		104	90-110			
Beryllium	5270		ng/l	5000.0		105	90-110			
Cadmium	20900		ng/l	20000		105	90-110			
Chromium	250000		ng/l	240000		104	90-110			
Cobalt	52500		ng/l	50000		105	90-110			
Copper	2.13E6		ng/l	2.0000E6		106	90-110			
Lead	205000		ng/l	200000		103	90-110			
Manganese	526000		ng/l	500000		105	90-110			
Molybdenum	53200		ng/l	50000		106	90-110			
Nickel	127000		ng/l	120000		106	90-110			
Selenium	20200		ng/l	20000		101	90-110			
Thallium	489		ng/l	500.00		97.9	90-110			
Vanadium	20700		ng/l	20000		104	90-110			
Zinc	523000		ng/l	500000		105	90-110			
Calibration Check (2408018-CCV7)					Prepared: 08/06/24 Analyzed: 08/07/24					
Antimony	20700		ng/l	20000		103	90-110			
Arsenic	20800		ng/l	20000		104	90-110			
Barium	214000		ng/l	200000		107	90-110			
Beryllium	5220		ng/l	5000.0		104	90-110			
Cadmium	21000		ng/l	20000		105	90-110			
Chromium	251000		ng/l	240000		105	90-110			
Cobalt	52700		ng/l	50000		105	90-110			
Copper	2.15E6		ng/l	2.0000E6		108	90-110			

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2408018 - B4H0605										
Calibration Check (2408018-CCV7) Contin				Prepared: 08/06/24 Analyzed: 08/07/24						
Lead	206000		ng/l	200000		103	90-110			
Manganese	525000		ng/l	500000		105	90-110			
Molybdenum	54000		ng/l	50000		108	90-110			
Nickel	127000		ng/l	120000		106	90-110			
Selenium	20400		ng/l	20000		102	90-110			
Thallium	493		ng/l	500.00		98.6	90-110			
Vanadium	20800		ng/l	20000		104	90-110			
Zinc	524000		ng/l	500000		105	90-110			
High Cal Check (2408018-HCV1)				Prepared & Analyzed: 08/06/24						
Antimony	39900		ng/l	40000		99.8	95-105			
Arsenic	40100		ng/l	40000		100	95-105			
Barium	401000		ng/l	400000		100	95-105			
Beryllium	9960		ng/l	10000		99.6	95-105			
Cadmium	40000		ng/l	40000		99.9	95-105			
Chromium	483000		ng/l	480000		101	95-105			
Cobalt	101000		ng/l	100000		101	95-105			
Copper	4.00E6		ng/l	4.0000E6		100	95-105			
Lead	400000		ng/l	400000		100	95-105			
Manganese	1.01E6		ng/l	1.0000E6		101	95-105			
Molybdenum	100000		ng/l	100000		100	95-105			
Nickel	240000		ng/l	240000		100	95-105			
Selenium	40000		ng/l	40000		99.9	95-105			
Thallium	1000		ng/l	1000.0		100	95-105			
Vanadium	40300		ng/l	40000		101	95-105			
Zinc	998000		ng/l	1.0000E6		99.8	95-105			
Initial Cal Blank (2408018-ICB1)				Prepared & Analyzed: 08/06/24						
Antimony	4.43		ng/l							
Arsenic	-0.793		ng/l							U
Barium	6.15		ng/l							
Beryllium	-0.0591		ng/l							U
Cadmium	0.420		ng/l							
Chromium	8.62		ng/l							
Cobalt	1.43		ng/l							
Copper	282		ng/l							
Lead	23.7		ng/l							
Manganese	19.8		ng/l							
Molybdenum	26.7		ng/l							
Nickel	3.70		ng/l							

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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2408018 - B4H0605										
Initial Cal Blank (2408018-ICB1) Continu				Prepared & Analyzed: 08/06/24						
Selenium	5.90		ng/l							
Thallium	0.775		ng/l							
Vanadium	-88.7		ng/l							U
Zinc	-201		ng/l							U
Initial Cal Check (2408018-ICV1)				Prepared & Analyzed: 08/06/24						
Antimony	19500		ng/l	20000		97.6	90-110			
Arsenic	19500		ng/l	20000		97.6	90-110			
Barium	194000		ng/l	200000		96.9	90-110			
Beryllium	4860		ng/l	5000.0		97.2	90-110			
Cadmium	20200		ng/l	20000		101	90-110			
Chromium	240000		ng/l	240000		100	90-110			
Cobalt	48600		ng/l	50000		97.2	90-110			
Copper	2.05E6		ng/l	2.0000E6		102	90-110			
Lead	199000		ng/l	200000		99.6	90-110			
Manganese	497000		ng/l	500000		99.4	90-110			
Molybdenum	49600		ng/l	50000		99.2	90-110			
Nickel	124000		ng/l	120000		103	90-110			
Selenium	20200		ng/l	20000		101	90-110			
Thallium	503		ng/l	500.00		101	90-110			
Vanadium	19600		ng/l	20000		98.1	90-110			
Zinc	506000		ng/l	500000		101	90-110			
Interference Check A (2408018-IFA1)				Prepared & Analyzed: 08/06/24						
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	318000		ng/l	300000		106	80-120			
Nickel	0.00		ng/l				80-120			U
Selenium	0.00		ng/l				80-120			U
Thallium	0.00		ng/l				80-120			U
Vanadium	0.00		ng/l				80-120			U
Zinc	0.00		ng/l				80-120			U

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/13/24 09:56
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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 2408018 - B4H0605										
Interference Check B (2408018-IFB1)				Prepared & Analyzed: 08/06/24						
Antimony	20200		ng/l	20000		101	80-120			
Arsenic	20500		ng/l	20000		103	80-120			
Barium	202000		ng/l	200000		101	80-120			
Beryllium	4920		ng/l	5000.0		98.4	80-120			
Cadmium	19800		ng/l	20000		98.8	80-120			
Chromium	232000		ng/l	240000		96.8	80-120			
Cobalt	50000		ng/l	50000		100	80-120			
Copper	1.93E6		ng/l	2.0000E6		96.5	80-120			
Lead	206000		ng/l	200000		103	80-120			
Manganese	499000		ng/l	500000		99.8	80-120			
Molybdenum	370000		ng/l	350000		106	80-120			
Nickel	117000		ng/l	120000		97.6	80-120			
Selenium	19000		ng/l	20000		95.1	80-120			
Thallium	520		ng/l	500.00		104	80-120			
Vanadium	18700		ng/l	20000		93.4	80-120			
Zinc	470000		ng/l	500000		93.9	80-120			
Batch B4H0605 - ICP-MS Extraction										
Blank (B4H0605-BLK1)				Prepared & Analyzed: 08/06/24						
Antimony	ND	0.0386	ng/m³ Air							SL, U
Arsenic	ND	0.00937	ng/m³ Air							U
Barium	ND	1.07	ng/m³ Air							U
Beryllium	ND	0.00320	ng/m³ Air							U
Cadmium	ND	0.0741	ng/m³ Air							U
Chromium	ND	2.21	ng/m³ Air							U
Cobalt	ND	0.0436	ng/m³ Air							U
Copper	ND	2.63	ng/m³ Air							U
Lead	ND	0.214	ng/m³ Air							U
Manganese	ND	1.89	ng/m³ Air							U
Molybdenum	ND	0.359	ng/m³ Air							U
Nickel	ND	0.652	ng/m³ Air							U
Selenium	ND	0.00896	ng/m³ Air							U
Thallium	ND	5.89E-4	ng/m³ Air							U
Vanadium	ND	0.0529	ng/m³ Air							U
Zinc	ND	76.8	ng/m³ Air							U
Blank (B4H0605-BLK2)				Prepared & Analyzed: 08/06/24						
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

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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 B4H0605 - ICP-MS Extraction										
Blank (B4H0605-BLK2) Continued					Prepared & Analyzed: 08/06/24					
Beryllium	ND	0.00320	ng/m³ Air							U
Cadmium	ND	0.0741	ng/m³ Air							U
Chromium	ND	2.21	ng/m³ Air							U
Cobalt	ND	0.0436	ng/m³ Air							U
Copper	ND	2.63	ng/m³ Air							U
Lead	ND	0.214	ng/m³ Air							U
Manganese	ND	1.89	ng/m³ Air							U
Molybdenum	ND	0.359	ng/m³ Air							U
Nickel	ND	0.652	ng/m³ Air							U
Selenium	ND	0.00896	ng/m³ Air							U
Thallium	ND	5.89E-4	ng/m³ Air							U
Vanadium	ND	0.0529	ng/m³ Air							U
Zinc	ND	76.8	ng/m³ Air							U
LCS (B4H0605-BS1)					Prepared & Analyzed: 08/06/24					
Antimony	0.530	0.0386	ng/m³ Air	1.3829		38.4	80-120			SL
Arsenic	2.72	0.00937	ng/m³ Air	2.7658		98.4	80-120			
Barium	28.3	1.07	ng/m³ Air	27.658		102	80-120			
Beryllium	1.34	0.00320	ng/m³ Air	1.3829		96.7	80-120			
Cadmium	1.38	0.0741	ng/m³ Air	1.3829		99.6	80-120			
Chromium	15.7	2.21	ng/m³ Air	13.829		114	80-120			
Cobalt	1.35	0.0436	ng/m³ Air	1.3829		97.7	80-120			
Copper	29.0	2.63	ng/m³ Air	27.658		105	80-120			
Lead	13.9	0.214	ng/m³ Air	13.829		100	80-120			
Manganese	8.37	1.89	ng/m³ Air	8.2975		101	80-120			
Molybdenum	1.63	0.359	ng/m³ Air	1.3829		118	80-120			
Nickel	3.11	0.652	ng/m³ Air	2.7658		112	80-120			
Selenium	2.70	0.00896	ng/m³ Air	2.7658		97.6	80-120			
Thallium	0.135	5.89E-4	ng/m³ Air	0.13829		97.7	80-120			
Vanadium	2.74	0.0529	ng/m³ Air	2.7658		99.2	80-120			
Zinc	87.5	76.8	ng/m³ Air	82.975		105	80-120			
LCS (B4H0605-BS2)					Prepared & Analyzed: 08/06/24					
Antimony	0.526	0.0386	ng/m³ Air	1.3829		38.1	80-120			SL
Arsenic	2.76	0.00937	ng/m³ Air	2.7658		99.9	80-120			
Barium	29.2	1.07	ng/m³ Air	27.658		105	80-120			
Beryllium	1.33	0.00320	ng/m³ Air	1.3829		96.2	80-120			
Cadmium	1.41	0.0741	ng/m³ Air	1.3829		102	80-120			
Chromium	16.2	2.21	ng/m³ Air	13.829		117	80-120			
Cobalt	1.39	0.0436	ng/m³ Air	1.3829		101	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 B4H0605 - ICP-MS Extraction										
LCS (B4H0605-BS2) Continued					Prepared & Analyzed: 08/06/24					
Copper	29.8	2.63	ng/m³ Air	27.658		108	80-120			
Lead	14.1	0.214	ng/m³ Air	13.829		102	80-120			
Manganese	8.64	1.89	ng/m³ Air	8.2975		104	80-120			
Molybdenum	1.66	0.359	ng/m³ Air	1.3829		120	80-120			
Nickel	3.23	0.652	ng/m³ Air	2.7658		117	80-120			
Selenium	2.72	0.00896	ng/m³ Air	2.7658		98.4	80-120			
Thallium	0.137	5.89E-4	ng/m³ Air	0.13829		99.2	80-120			
Vanadium	2.83	0.0529	ng/m³ Air	2.7658		102	80-120			
Zinc	89.7	76.8	ng/m³ Air	82.975		108	80-120			
Duplicate (B4H0605-DUP1)					**Source: 4080550-02** Prepared & Analyzed: 08/06/24					
Antimony	0.169	0.0295	ng/m³ Air		0.172			1.43	10	SL
Arsenic	0.370	0.00717	ng/m³ Air		0.357			3.55	10	
Barium	4.61	0.819	ng/m³ Air		4.56			1.05	10	
Beryllium	0.0166	0.00245	ng/m³ Air		0.0158			4.58	10	
Cadmium	ND	0.0567	ng/m³ Air		ND				10	U
Chromium	2.68	1.69	ng/m³ Air		2.53			5.56	10	
Cobalt	0.485	0.0334	ng/m³ Air		0.476			1.93	10	
Copper	35.3	2.01	ng/m³ Air		34.5			2.29	10	
Lead	1.20	0.164	ng/m³ Air		1.12			6.47	10	
Manganese	15.1	1.45	ng/m³ Air		14.9			1.61	10	
Molybdenum	1.89	0.275	ng/m³ Air		1.94			2.49	10	
Nickel	1.43	0.499	ng/m³ Air		1.36			4.89	10	
Selenium	0.350	0.00685	ng/m³ Air		0.340			2.96	10	
Thallium	0.00240	4.51E-4	ng/m³ Air		0.00253			5.36	10	
Vanadium	1.75	0.0405	ng/m³ Air		1.74			0.407	10	
Zinc	ND	58.7	ng/m³ Air		ND				10	U
Duplicate (B4H0605-DUP2)					**Source: 4080550-22** Prepared & Analyzed: 08/06/24					
Antimony	0.0923	0.0329	ng/m³ Air		0.0796			14.8	10	SL
Arsenic	0.443	0.00799	ng/m³ Air		0.432			2.59	10	
Barium	3.27	0.913	ng/m³ Air		3.36			2.77	10	
Beryllium	0.00973	0.00273	ng/m³ Air		0.0103			6.12	10	
Cadmium	ND	0.0632	ng/m³ Air		ND				10	U
Chromium	2.51	1.88	ng/m³ Air		2.44			3.19	10	
Cobalt	0.357	0.0372	ng/m³ Air		0.350			2.02	10	
Copper	39.6	2.24	ng/m³ Air		37.7			4.88	10	
Lead	0.859	0.183	ng/m³ Air		0.946			9.65	10	
Manganese	11.5	1.61	ng/m³ Air		11.2			2.56	10	
Molybdenum	2.22	0.306	ng/m³ Air		2.11			5.41	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 B4H0605 - ICP-MS Extraction										
Duplicate (B4H0605-DUP2) Continued			**Source: 4080550-22**		Prepared & Analyzed: 08/06/24					
Nickel	1.03	0.556	ng/m³ Air		1.06			2.76	10	
Selenium	0.147	0.00764	ng/m³ Air		0.143			2.70	10	
Thallium	6.66E-4	5.02E-4	ng/m³ Air		7.10E-4			6.37	10	
Vanadium	1.01	0.0451	ng/m³ Air		1.01			0.868	10	
Zinc	ND	65.5	ng/m³ Air		ND				10	U
Duplicate (B4H0605-DUP3)			**Source: 4080550-14**		Prepared: 08/06/24 Analyzed: 08/07/24					
Antimony	0.0577	0.0325	ng/m³ Air		0.0586			1.61	10	SL
Arsenic	0.388	0.00788	ng/m³ Air		0.380			2.09	10	
Barium	3.25	0.900	ng/m³ Air		3.23			0.567	10	
Beryllium	0.0104	0.00269	ng/m³ Air		0.00996			4.40	10	
Cadmium	ND	0.0623	ng/m³ Air		ND				10	U
Chromium	2.47	1.86	ng/m³ Air		2.47			0.194	10	
Cobalt	0.336	0.0367	ng/m³ Air		0.336			0.0921	10	
Copper	194	2.21	ng/m³ Air		194			0.155	10	
Lead	0.264	0.180	ng/m³ Air		0.266			0.704	10	
Manganese	10.0	1.59	ng/m³ Air		10.0			0.385	10	
Molybdenum	8.97	0.302	ng/m³ Air		9.01			0.510	10	
Nickel	1.12	0.549	ng/m³ Air		1.12			0.248	10	
Selenium	0.141	0.00754	ng/m³ Air		0.142			0.412	10	
Thallium	6.57E-4	4.96E-4	ng/m³ Air		6.67E-4			1.65	10	
Vanadium	1.25	0.0445	ng/m³ Air		1.25			0.00673	10	
Zinc	ND	64.6	ng/m³ Air		ND				10	U
Duplicate (B4H0605-DUP4)			**Source: 4080550-26**		Prepared: 08/06/24 Analyzed: 08/07/24					
Antimony	0.0698	0.0315	ng/m³ Air		0.0694			0.601	10	SL
Arsenic	0.454	0.00766	ng/m³ Air		0.448			1.25	10	
Barium	3.77	0.874	ng/m³ Air		3.69			2.07	10	
Beryllium	0.0171	0.00261	ng/m³ Air		0.0168			1.94	10	
Cadmium	ND	0.0605	ng/m³ Air		ND				10	U
Chromium	3.08	1.81	ng/m³ Air		3.05			0.838	10	
Cobalt	0.482	0.0356	ng/m³ Air		0.482			0.0429	10	
Copper	39.0	2.15	ng/m³ Air		38.8			0.599	10	
Lead	0.765	0.175	ng/m³ Air		0.759			0.755	10	
Manganese	16.0	1.54	ng/m³ Air		16.0			0.123	10	
Molybdenum	1.89	0.293	ng/m³ Air		1.88			0.445	10	
Nickel	1.27	0.533	ng/m³ Air		1.26			0.588	10	
Selenium	0.151	0.00732	ng/m³ Air		0.146			3.13	10	
Thallium	8.27E-4	4.81E-4	ng/m³ Air		8.14E-4			1.59	10	
Vanadium	1.26	0.0432	ng/m³ Air		1.26			0.186	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 B4H0605 - ICP-MS Extraction										
Duplicate (B4H0605-DUP4) Continued		**Source: 4080550-26**			Prepared: 08/06/24 Analyzed: 08/07/24					
Zinc	ND	62.7	ng/m³ Air		ND				10	U
Matrix Spike (B4H0605-MS1)		**Source: 4080550-02**			Prepared & Analyzed: 08/06/24					
Antimony	0.698	0.0295	ng/m³ Air	1.0579	0.172	49.8	80-120			SL
Arsenic	2.40	0.00717	ng/m³ Air	2.1158	0.357	96.5	80-120			
Barium	25.8	0.819	ng/m³ Air	21.158	4.56	100	80-120			
Beryllium	1.05	0.00245	ng/m³ Air	1.0579	0.0158	98.0	80-120			
Cadmium	1.04	0.0567	ng/m³ Air	1.0579	ND	98.1	80-120			
Chromium	12.8	1.69	ng/m³ Air	10.579	2.53	97.2	80-120			
Cobalt	1.47	0.0334	ng/m³ Air	1.0579	0.476	94.4	80-120			
Copper	56.7	2.01	ng/m³ Air	21.158	34.5	105	80-120			
Lead	11.8	0.164	ng/m³ Air	10.579	1.12	101	80-120			
Manganese	21.1	1.45	ng/m³ Air	6.3473	14.9	98.1	80-120			
Molybdenum	2.97	0.275	ng/m³ Air	1.0579	1.94	97.4	80-120			
Nickel	3.42	0.499	ng/m³ Air	2.1158	1.36	97.1	80-120			
Selenium	2.34	0.00685	ng/m³ Air	2.1158	0.340	94.7	80-120			
Thallium	0.104	4.51E-4	ng/m³ Air	0.10579	0.00253	96.1	80-120			
Vanadium	3.73	0.0405	ng/m³ Air	2.1158	1.74	94.2	80-120			
Zinc	76.6	58.7	ng/m³ Air	63.473	ND	121	80-120			
Matrix Spike (B4H0605-MS2)		**Source: 4080550-22**			Prepared & Analyzed: 08/06/24					
Antimony	0.760	0.0329	ng/m³ Air	1.1795	0.0796	57.7	80-120			SL
Arsenic	2.72	0.00799	ng/m³ Air	2.3589	0.432	97.1	80-120			
Barium	26.8	0.913	ng/m³ Air	23.589	3.36	99.6	80-120			
Beryllium	1.16	0.00273	ng/m³ Air	1.1795	0.0103	97.4	80-120			
Cadmium	1.18	0.0632	ng/m³ Air	1.1795	ND	100	80-120			
Chromium	14.4	1.88	ng/m³ Air	11.795	2.44	101	80-120			
Cobalt	1.47	0.0372	ng/m³ Air	1.1795	0.350	94.9	80-120			
Copper	61.9	2.24	ng/m³ Air	23.589	37.7	103	80-120			
Lead	12.9	0.183	ng/m³ Air	11.795	0.946	101	80-120			
Manganese	18.1	1.61	ng/m³ Air	7.0768	11.2	97.1	80-120			
Molybdenum	3.25	0.306	ng/m³ Air	1.1795	2.11	97.3	80-120			
Nickel	3.37	0.556	ng/m³ Air	2.3589	1.06	98.0	80-120			
Selenium	2.42	0.00764	ng/m³ Air	2.3589	0.143	96.3	80-120			
Thallium	0.116	5.02E-4	ng/m³ Air	0.11795	7.10E-4	98.0	80-120			
Vanadium	3.31	0.0451	ng/m³ Air	2.3589	1.01	97.6	80-120			
Zinc	83.6	65.5	ng/m³ Air	70.768	ND	118	80-120			
Matrix Spike Dup (B4H0605-MSD1)		**Source: 4080550-02**			Prepared & Analyzed: 08/06/24					
Antimony	0.702	0.0295	ng/m³ Air	1.0579	0.172	50.1	80-120	0.512	20	SL
Arsenic	2.40	0.00717	ng/m³ Air	2.1158	0.357	96.3	80-120	0.194	20	

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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 B4H0605 - ICP-MS Extraction										
Matrix Spike Dup (B4H0605-MSD1) Conti			**Source: 4080550-02**		Prepared & Analyzed: 08/06/24					
Barium	25.5	0.819	ng/m³ Air	21.158	4.56	99.0	80-120	0.992	20	
Beryllium	1.06	0.00245	ng/m³ Air	1.0579	0.0158	98.4	80-120	0.349	20	
Cadmium	1.04	0.0567	ng/m³ Air	1.0579	ND	98.2	80-120	0.0365	20	
Chromium	12.9	1.69	ng/m³ Air	10.579	2.53	97.9	80-120	0.545	20	
Cobalt	1.47	0.0334	ng/m³ Air	1.0579	0.476	93.6	80-120	0.603	20	
Copper	56.2	2.01	ng/m³ Air	21.158	34.5	103	80-120	0.900	20	
Lead	11.8	0.164	ng/m³ Air	10.579	1.12	100	80-120	0.215	20	
Manganese	20.2	1.45	ng/m³ Air	6.3473	14.9	83.2	80-120	4.57	20	
Molybdenum	2.91	0.275	ng/m³ Air	1.0579	1.94	91.5	80-120	2.11	20	
Nickel	3.42	0.499	ng/m³ Air	2.1158	1.36	97.3	80-120	0.0939	20	
Selenium	2.34	0.00685	ng/m³ Air	2.1158	0.340	94.6	80-120	0.157	20	
Thallium	0.105	4.51E-4	ng/m³ Air	0.10579	0.00253	96.7	80-120	0.610	20	
Vanadium	3.68	0.0405	ng/m³ Air	2.1158	1.74	91.7	80-120	1.42	20	
Zinc	75.9	58.7	ng/m³ Air	63.473	ND	120	80-120	0.952	20	
Matrix Spike Dup (B4H0605-MSD2)			**Source: 4080550-22**		Prepared & Analyzed: 08/06/24					
Antimony	0.681	0.0329	ng/m³ Air	1.1795	0.0796	51.0	80-120	11.0	20	SL
Arsenic	2.71	0.00799	ng/m³ Air	2.3589	0.432	96.6	80-120	0.506	20	
Barium	26.7	0.913	ng/m³ Air	23.589	3.36	98.8	80-120	0.711	20	
Beryllium	1.15	0.00273	ng/m³ Air	1.1795	0.0103	97.0	80-120	0.398	20	
Cadmium	1.17	0.0632	ng/m³ Air	1.1795	ND	99.1	80-120	0.866	20	
Chromium	14.3	1.88	ng/m³ Air	11.795	2.44	101	80-120	0.281	20	
Cobalt	1.50	0.0372	ng/m³ Air	1.1795	0.350	97.4	80-120	2.00	20	
Copper	62.9	2.24	ng/m³ Air	23.589	37.7	107	80-120	1.57	20	
Lead	13.0	0.183	ng/m³ Air	11.795	0.946	102	80-120	0.965	20	
Manganese	18.5	1.61	ng/m³ Air	7.0768	11.2	102	80-120	2.09	20	
Molybdenum	3.23	0.306	ng/m³ Air	1.1795	2.11	95.5	80-120	0.678	20	
Nickel	3.47	0.556	ng/m³ Air	2.3589	1.06	102	80-120	2.78	20	
Selenium	2.39	0.00764	ng/m³ Air	2.3589	0.143	95.2	80-120	1.14	20	
Thallium	0.115	5.02E-4	ng/m³ Air	0.11795	7.10E-4	96.7	80-120	1.29	20	
Vanadium	3.31	0.0451	ng/m³ Air	2.3589	1.01	97.9	80-120	0.179	20	
Zinc	82.1	65.5	ng/m³ Air	70.768	ND	116	80-120	1.82	20	
Post Spike (B4H0605-PS1)			**Source: 4080550-02**		Prepared & Analyzed: 08/06/24					
Antimony	0.386	0.0295	ng/m³ Air	0.21158	0.172	101	75-125			SL
Arsenic	1.39	0.00717	ng/m³ Air	1.0579	0.357	97.2	75-125			
Barium	6.74	0.819	ng/m³ Air	2.1158	4.56	103	75-125			
Beryllium	0.224	0.00245	ng/m³ Air	0.21158	0.0158	98.6	75-125			
Cadmium	0.123	0.0567	ng/m³ Air	0.10579	ND	117	75-125			
Chromium	3.64	1.69	ng/m³ Air	1.0579	2.53	105	75-125			

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CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/13/24 09:56
SUBMITTED: 03/11/24 to 08/05/24
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 B4H0605 - ICP-MS Extraction										
Post Spike (B4H0605-PS1) Continued			**Source: 4080550-02**		Prepared & Analyzed: 08/06/24					
Cobalt	0.700	0.0334	ng/m³ Air	0.21158	0.476	106	75-125			
Copper	46.8	2.01	ng/m³ Air	10.579	34.5	117	75-125			
Lead	22.9	0.164	ng/m³ Air	21.158	1.12	103	75-125			
Manganese	17.4	1.45	ng/m³ Air	2.1158	14.9	117	75-125			
Molybdenum	3.03	0.275	ng/m³ Air	1.0579	1.94	103	75-125			
Nickel	3.56	0.499	ng/m³ Air	2.1158	1.36	104	75-125			
Selenium	1.38	0.00685	ng/m³ Air	1.0579	0.340	98.6	75-125			
Thallium	0.0550	4.51E-4	ng/m³ Air	5.2894E-2	0.00253	99.2	75-125			
Vanadium	2.79	0.0405	ng/m³ Air	1.0579	1.74	99.1	75-125			
Zinc	ND	58.7	ng/m³ Air	21.158	ND		75-125			U
Post Spike (B4H0605-PS2)			**Source: 4080550-22**		Prepared & Analyzed: 08/06/24					
Antimony	0.307	0.0329	ng/m³ Air	0.23589	0.0796	96.4	75-125			SL
Arsenic	1.55	0.00799	ng/m³ Air	1.1795	0.432	94.4	75-125			
Barium	5.66	0.913	ng/m³ Air	2.3589	3.36	97.5	75-125			
Beryllium	0.240	0.00273	ng/m³ Air	0.23589	0.0103	97.2	75-125			
Cadmium	0.128	0.0632	ng/m³ Air	0.11795	ND	109	75-125			
Chromium	3.58	1.88	ng/m³ Air	1.1795	2.44	97.2	75-125			
Cobalt	0.575	0.0372	ng/m³ Air	0.23589	0.350	95.2	75-125			
Copper	50.1	2.24	ng/m³ Air	11.795	37.7	105	75-125			
Lead	24.6	0.183	ng/m³ Air	23.589	0.946	100	75-125			
Manganese	13.5	1.61	ng/m³ Air	2.3589	11.2	95.2	75-125			
Molybdenum	3.25	0.306	ng/m³ Air	1.1795	2.11	97.4	75-125			
Nickel	3.42	0.556	ng/m³ Air	2.3589	1.06	100	75-125			
Selenium	1.29	0.00764	ng/m³ Air	1.1795	0.143	97.0	75-125			
Thallium	0.0583	5.02E-4	ng/m³ Air	5.8974E-2	7.10E-4	97.6	75-125			
Vanadium	2.14	0.0451	ng/m³ Air	1.1795	1.01	96.2	75-125			
Zinc	ND	65.5	ng/m³ Air	23.589	ND		75-125			U
Dilution Check (B4H0605-SRL1)			**Source: 4080550-02**		Prepared & Analyzed: 08/06/24					
Antimony	0.170	0.148	ng/m³ Air		0.172			0.904	10	SL
Arsenic	0.366	0.0358	ng/m³ Air		0.357			2.28	10	
Barium	4.62	4.09	ng/m³ Air		4.56			1.22	10	
Beryllium	0.0168	0.0122	ng/m³ Air		0.0158			5.87	10	
Cadmium	ND	0.283	ng/m³ Air		ND				10	U
Chromium	ND	8.45	ng/m³ Air		ND				10	U
Cobalt	0.486	0.167	ng/m³ Air		0.476			2.04	10	
Copper	36.0	10.1	ng/m³ Air		34.5			4.35	10	
Lead	1.10	0.819	ng/m³ Air		1.12			1.83	10	
Manganese	15.6	7.23	ng/m³ Air		14.9			4.40	10	

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FILE #: 4205.00.003.001
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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 B4H0605 - ICP-MS Extraction										
Dilution Check (B4H0605-SRL1) ContinueSource: 4080550-02 Prepared & Analyzed: 08/06/24										
Molybdenum	1.97	1.37	ng/m³ Air		1.94			1.22	10	
Nickel	ND	2.49	ng/m³ Air		ND				10	U
Selenium	0.342	0.0343	ng/m³ Air		0.340			0.506	10	
Thallium	0.00391	0.00225	ng/m³ Air		0.00253			43.0	10	
Vanadium	1.71	0.202	ng/m³ Air		1.74			1.84	10	
Zinc	ND	294	ng/m³ Air		ND				10	U
Dilution Check (B4H0605-SRL2) Source: 4080550-22 Prepared & Analyzed: 08/06/24										
Antimony	ND	0.165	ng/m³ Air		ND				10	SL, U
Arsenic	0.446	0.0400	ng/m³ Air		0.432			3.18	10	
Barium	ND	4.56	ng/m³ Air		ND				10	U
Beryllium	ND	0.0136	ng/m³ Air		ND				10	U
Cadmium	ND	0.316	ng/m³ Air		ND				10	U
Chromium	ND	9.42	ng/m³ Air		ND				10	U
Cobalt	0.357	0.186	ng/m³ Air		0.350			1.83	10	
Copper	38.1	11.2	ng/m³ Air		37.7			1.05	10	
Lead	0.943	0.913	ng/m³ Air		0.946			0.377	10	
Manganese	11.3	8.06	ng/m³ Air		11.2			0.804	10	
Molybdenum	2.11	1.53	ng/m³ Air		2.11			0.273	10	
Nickel	ND	2.78	ng/m³ Air		ND				10	U
Selenium	0.141	0.0382	ng/m³ Air		0.143			1.45	10	
Thallium	ND	0.00251	ng/m³ Air		ND				10	U
Vanadium	0.982	0.226	ng/m³ Air		1.01			2.35	10	
Zinc	ND	328	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.
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 08/14/2024 and Shanna Vasser 08/15/2024
Laboratory: Eastern Research Group – Morrisville, NC
Collection date(s): 03/04/2024 and 07/25/2024 – 07/31/2024
Report No: 4080550

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

Discrepancies:

13. Field blank detections above the method detection limit were reported for molybdenum in MFL-FB01-072824-HM.

Notes:

7. Sample MFL-AM01-030424-HM (originally reported with SDG 4031151) was re-extracted and re-analyzed at a two-fold dilution for nickel and reported in this data package.