Ambient Community Air Monitoring Weekly Report
For the Hawaii Department of Health – Clean Air Branch

Lahaina, Maui

4/18/2024 – 4/24/2024

Due to ongoing debris removal operations in response to the Maui Wildfires, a Community Air Monitoring and Sampling Plan (CAMSP) has been drafted and sampling is being performed at 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)

This approach includes ambient community air monitoring and sampling to monitor conditions and determine whether debris removal activities, managed by the U.S. Army Corps of Engineers (USACE), significantly impact air quality in Lahaina. Data collected is made available to HDOH via online shared site and this weekly report. This approach to air monitoring and sampling will continue until debris removal activities are complete or until HDOH CAB 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 draft CAMSP. Additionally, daily air samples were collected at all community locations, as depicted in **Figure 1**. Summary analytical data is presented in **Tables 1 and 2**. **Appendix 1** provides detailed analytical results for all community locations where air sampling was performed. Analytical results were compared to site-specific screening levels for particulate matter, asbestos, and heavy metals as described in the draft CAMSP. A summary of meteorological data is presented in **Table 3.** Overall wind conditions show approximately 1.1 mph in a generally average SSE direction.

Results for Community Locations:
Ambient air monitoring was performed to assess the presence of airborne particulates with a particle size diameter of 10 micrometers (µm), as this 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 at each of the following locations: Leialii Hawaiian Homelands (April 18-April 24), WW Pump Station #4 (April 18-April 24), Lahaina Intermediate School (April 18-April 24), Lahaina Boys & Girls Club (April 18-April 24).

The PM_{10} monitoring results were not found to have exceeded the screening level during this reporting period, as shown in **Table 2**.

Please note that ambient air monitoring for fine particulate matter, with a particle size diameter of 2.5 micrometers or less ($PM_{2.5}$) is not included in this report. This monitoring is being performed by the Department of Health/EPA at six locations in Lahaina and can be viewed at: https://fire.airnow.gov/.

There were 28 samples collected for asbestos fibers at community monitoring locations throughout this reporting period. Of the 28 samples collected, three samples collected at Leialii Hawaiian Homelands on April 19, 22 and 23, and one sample collected at Lahaina Boys & Girls Club on April 20, were voided due to a greater than 10 percent (%) discrepancy between the pre and post calibration flow rate values, as stated in the asbestos sampling standard operating procedure (SOP). All asbestos results were below the Site Screening Action Level (SSAL) of 0.003 fibers per cubic centimeter (fibers/cc) and less than the laboratory's analytical sensitivity (see Table 1).

Low levels of heavy metals were detected in ambient air samples at all community sampling locations. Although heavy metals were detected, all concentrations were below the SSALs (see Table 1). The laboratory data sheets for the metals and asbestos samples collected from the community locations are found in **Appendix 1.**

Quality Control:

This section briefly discusses the quality control efforts made by Tetra Tech throughout the air monitoring and sampling process. All references and SOPs can be found provided with the CAMSP.

Tetra Tech is utilizing Met One Instruments, Inc., environmental beta attenuation mass monitors (E-BAM) to allow for comparison to the National Ambient Air Quality Standards (NAAQS) for particulates. E-BAMs are factory-calibrated annually and do not require daily calibration, except for a leak check and a flow audit, which were performed prior to monitoring according to the manufacturer's procedures.

For asbestos sampling, Tetra Tech uses 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 using a primary calibration standard. Calibration and sampling are conducted in accordance with Tetra Tech SOPs 064-2, "Calibration of Air Sampling Pump" and 073-3, "Air Quality Monitoring" and U.S. EPA ERT SOPs No. 2008, "General Air Monitoring and Sampling Guidelines" and 2015 "Asbestos Air Sampling," included in the CAMSP.

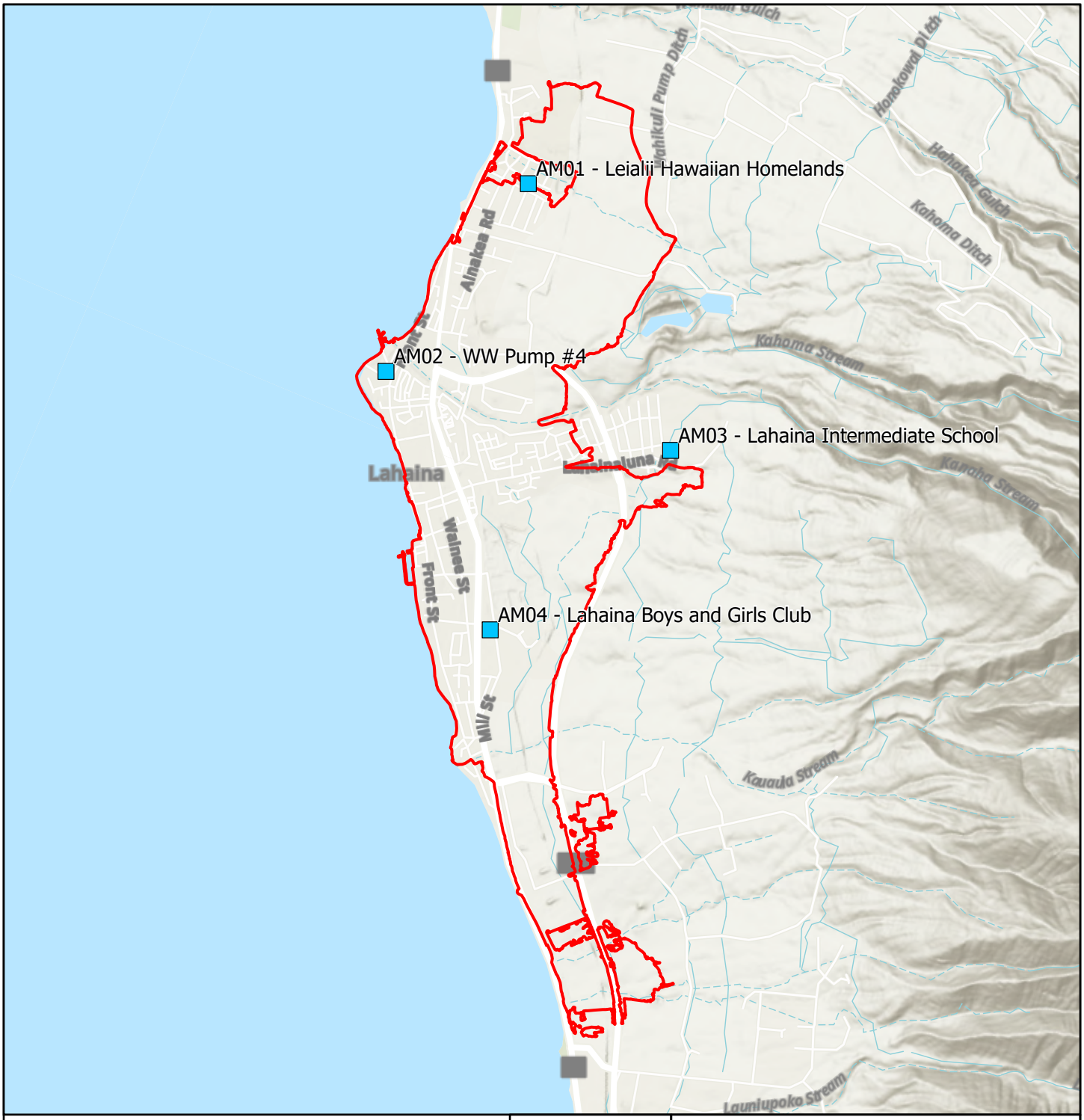
Tetra Tech is using Tisch Environmental High Volume Air Samplers, or equivalent, collocated with the real-time particulate monitors and asbestos samplers described above. Air samples for elemental metals at community locations are collected and analyzed in accordance with the following methods:

- U.S. EPA Compendium Method IO-2.1, Sampling of Ambient Air for Total Suspended Particulate Matter (SPM) and PM10 Using High Volume (HV) Sampler
- U.S. EPA Compendium Method IO-3.5: Compendium of Methods for the Determination of Inorganic Compounds in Ambient Air: Determination of Metals in Ambient Particulate Matter Using Inductively Coupled Plasma/Mass Spectrometry (ICP/MS). EPA/625/R-96/010a
- U.S. EPA 40 Code of Federal Regulations (CFR) Part 50, Method for the Determination of Lead in Total Suspended Particulate Matter.
- U.S. EPA 40 CFR Part 58, Appendix E: Probe and Monitoring Path Siting Criteria for Ambient Air Quality Monitoring
- Standard Operating Procedures for Lead Monitoring Using a TSP High Volume Sampler

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

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

Attachments



Air Sampling Locations

Lahaina Fire Perimeter

N

0 0.3 0.6
Miles

TETRA TECH

Figure 1
Air Sampling Locations

Hawaii DOH
2023 Lahaina Wildfire

Basemap: ESRI ArcGIS World Street Map

Table 1
HDOH CAB Ambient Community Monitoring and Sampling
Analytical Sampling Results by Date
Maui Wildfire, Lahaina
4/18/2024-4/24/2024

Analyte		Asbestos	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Manganese	Molybdenum	Nickel	Selenium	Thallium	Vanadium	Zinc
Units		s/cc	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3
Screening 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
4/18/2024	Leialii Hawaiian Homelands (AM-01)	<0.0027	0.0000600	0.000211	0.00228	0.00000450	ND	ND	0.000184	0.0725	0.000323	0.00556	0.00394	0.000899	0.000118	0.000000782	0.000485	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.000185	0.000284	0.00545	0.0000126	ND	0.00216	0.000377	0.0353	0.00107	0.0121	0.00147	0.00145	0.000166	0.000000982	0.00116	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000886	0.000171	0.00430	0.0000141	ND	0.00202	0.000288	0.0490	0.00101	0.00727	0.00241	0.00118	0.000146	0.00000110	0.000741	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0024	0.000101	0.000374	0.00388	0.0000131	ND	0.00253	0.000419	0.0326	0.000840	0.0133	0.00134	0.00140	0.000166	0.000000913	0.00104	ND
4/19/2024	Leialii Hawaiian Homelands (AM-01)		0.0000604	0.000356	0.00256	0.00000527	ND	0.00186	0.000245	0.0971	0.000411	0.00645	0.00404	0.00114	0.000110	0.000000748	0.000647	ND
	WW Pump Station #4 (AM-02)	<0.0027	0.000150	0.000178	0.00385	0.00000692	ND	0.00190	0.000226	0.0410	0.000552	0.00699	0.00180	0.00104	0.000142	0.000000747	0.000747	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000980	0.000157	0.00281	0.0000160	ND	0.00202	0.000307	0.0427	0.0162	0.00823	0.00202	0.00111	0.000145	0.000000880	0.000823	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0024	0.0000919	0.000192	0.00329	0.00000786	ND	0.00250	0.000263	0.0395	0.000520	0.00814	0.00159	0.00156	0.000157	0.000000680	0.000750	ND
4/20/2024	Leialii Hawaiian Homelands (AM-01)	<0.0027	0.0000650	0.000359	0.00333	0.00000798	ND	0.00236	0.000313	0.101	0.000665	0.00917	0.00368	0.00143	0.000134	0.00000123	0.000871	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.000104	0.000315	0.00594	0.00000802	ND	0.00199	0.000288	0.0532	0.000845	0.00822	0.00187	0.00127	0.000147	0.00000133	0.000887	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000645	0.000127	0.00230	0.00000891	ND	ND	0.000193	0.0520	0.000448	0.00507	0.00246	0.000996	0.000148	0.00000117	0.000557	ND
	Lahaina Boys & Girls Club (AM-04)		0.000102	0.000270	0.00359	0.0000109	ND	0.00204	0.000334	0.0301	0.000899	0.0103	0.00111	0.00121	0.000178	0.00000116	0.000924	ND
4/21/2024	Leialii Hawaiian Homelands (AM-01)	<0.0030	0.000105	0.000478	0.00318	0.00000666	ND	0.00197	0.000233	0.112	0.000779	0.00686	0.00400	0.000930	0.000156	0.00000202	0.000699	0.0861
	WW Pump Station #4 (AM-02)	<0.0024	0.000165	0.000257	0.0491	0.00000576	ND	ND	0.000143	0.153	0.000853	0.00477	0.00201	0.000967	0.000169	0.00000171	0.000497	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.000104	0.000143	0.00234	0.00000640	ND	ND	0.000172	0.0580	0.000848	0.00461	0.00219	0.000884	0.000156	0.00000180	0.000456	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0024	0.000150	0.000245	0.00364	0.00000838	ND	ND	0.000295	0.0403	0.00107	0.00850	0.00140	0.00106	0.000176	0.00000164	0.000688	ND
4/22/2024	Leialii Hawaiian Homelands (AM-01)		0.0000636	0.000662	0.00384	0.0000140	ND	0.00265	0.000563	0.0703	0.000451	0.0146	0.00230	0.00200	0.000167	0.00000258	0.00143	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.0000965	0.000293	0.00523	0.0000127	ND	0.00287	0.000496	0.0517	0.000725	0.0130	0.00152	0.00184	0.000162	0.00000236	0.00145	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000535	0.000154	0.00271	0.0000120	ND	0.00217	0.000267	0.0643	0.000355	0.00699	0.00214	0.00112	0.000150	0.00000218	0.000694	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0024	0.000148	0.000452	0.00421	0.0000119	ND	0.00224	0.000375	0.0364	0.000882	0.0122	0.00129	0.00126	0.000193	0.00000223	0.000978	ND
4/23/2024	Leialii Hawaiian Homelands (AM-01)		0.0000738	0.000594	0.00450	0.0000161	ND	0.00296	0.000607	0.0885	0.000470	0.0178	0.00274	0.00166	0.000157	0.00000179	0.00168	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.000112	0.000333	0.00469	0.0000107	ND	0.00219	0.000367	0.0504	0.000910	0.0108	0.00146	0.00136	0.000132	0.00000135	0.00108	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000826	0.000251	0.00298	0.0000143	ND	0.00227	0.000336	0.0824	0.000527	0.00850	0.00233	0.00122	0.000131	0.00000120	0.000804	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0024	0.0000900	0.000352	0.00361	0.0000104	ND	0.00209	0.000317	0.0373	0.000748	0.0100	0.00145	0.00108	0.000135	0.00000120	0.000843	ND
4/24/2024	Leialii Hawaiian Homelands (AM-01)	<0.0027	0.0000615	0.000420	0.00350	0.0000116	ND	0.00302	0.000591	0.0951	0.000353	0.0146	0.00311	0.00221	0.000167	0.00000231	0.00147	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.000109	0.000273	0.00355	0.00000875	ND	0.00191	0.000319	0.0499	0.000644	0.00903	0.00155	0.00122	0.000151	0.00000216	0.000897	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000787	0.000239	0.00325	0.0000191	ND	0.00283	0.000433	0.0657	0.000722	0.0108	0.00218	0.00145	0.000178	0.00000216	0.00108	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0024	0.000133	0.000503	0.00556	0.0000170	ND	0.00320	0.000534	0.0499	0.00133	0.0170	0.00160	0.00166	0.000210	0.00000261	0.00141	ND
95% Upper Confidence Limit[2]		NA	0.000110	0.000360	0.00570	0.0000120	NA	0.00248	0.000390	0.0724	0.00128	0.0111	0.00248	0.00142	0.000160	0.00000180	0.00104	NA

Notes:
[1] Asbestos result determined by transmission electron microscopy (TEM) in accordance with ISO Method 10312. Phase Contrast Microscopy equivalent (PCMe) results are presented here.
[2] 95% UCL determined through 'best fit' lognormal or normal parametric statistics via W test.
< = less than
s/cc = structures per cubic centimeter
µg/m^3 = 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 shown in Table 1 has been converted to micrograms per cubic meter so data was comparable to SSALs.
Asbestos samples voided due to a greater than 10% discrepancy between the pre and post calibration flow rate values, as stated in the asbestos sampling standard operating procedure (SOP).

Table 2
HDOH CAB Ambient Community Monitoring and Sampling
Particulate Monitoring Results for PM_{10}
Maui Wildfire, Lahaina
4/18/2024 - 4/24/2024

Screening Level		**150 µg/m^3**
4/18/2024	Leialii Hawaiian Homelands (AM-01)	8.6
	WW Pump Station #4 (AM-02)	7.6
	Lahaina Intermediate School (AM-03)	5.5
	Lahaina Boys & Girls Club (AM-04)	6.6
4/19/2024	Leialii Hawaiian Homelands (AM-01)	7.3
	WW Pump Station #4 (AM-02)	8.2
	Lahaina Intermediate School (AM-03)	6.5
	Lahaina Boys & Girls Club (AM-04)	4.6
4/20/2024	Leialii Hawaiian Homelands (AM-01)	5.9
	WW Pump Station #4 (AM-02)	6.4
	Lahaina Intermediate School (AM-03)	5.1
	Lahaina Boys & Girls Club (AM-04)	5.7
4/21/2024	Leialii Hawaiian Homelands (AM-01)	8.4
	WW Pump Station #4 (AM-02)	7.2
	Lahaina Intermediate School (AM-03)	8.0
	Lahaina Boys & Girls Club (AM-04)	5.3
4/22/2024	Leialii Hawaiian Homelands (AM-01)	7.1
	WW Pump Station #4 (AM-02)	7.1
	Lahaina Intermediate School (AM-03)	6.0
	Lahaina Boys & Girls Club (AM-04)	5.8
4/23/2024	Leialii Hawaiian Homelands (AM-01)	6.2
	WW Pump Station #4 (AM-02)	6.7
	Lahaina Intermediate School (AM-03)	6.0
	Lahaina Boys & Girls Club (AM-04)	5.9
4/24/2024	Leialii Hawaiian Homelands (AM-01)	8.6
	WW Pump Station #4 (AM-02)	5.9
	Lahaina Intermediate School (AM-03)	6.9
	Lahaina Boys & Girls Club (AM-04)	6.1

Notes:
µg/m3 = micrograms per cubic meter
24 hour TWA calculation results are shown in two significant figures
Results are based on 24 hour TWA calculation except for the following:
Results for Lahaina Boys & Girls Club (AM-04) on 4/22 are based on a 23 hr TWA because of equipment error.
Results for Lahaina Boys & Girls Club (AM-04) on 4/24 are based on a 19 hr TWA because of a equipment error.

Table 3
Maui Wildfire - Lahaina
Meteorological Data
4/18/2024-4/24/2024

Date	Station ID	Weather Station Name	Wind Speed (mph)	Wind Direction (angle)	Temperature (°F)	Rel Humidity (%)	Baro Pressure (mBar)
4/18/2024	AM-01	Leialii Hawaiian Homelands	1.0	SE	79	58	761.6
4/18/2024	AM-02	WW Pump Station #4	1.1	SE	77	63	763.9
4/18/2024	AM-03	Lahaina Intermediate School	1.1	ESE	75	64	754.6
4/18/2024	AM-04	Lahaina Boys & Girls Club	1.1	S	75	66	763.4
4/19/2024	AM-01	Leialii Hawaiian Homelands	1.2	SE	77	64	762.1
4/19/2024	AM-02	WW Pump Station #4	1.0	SSE	77	68	764.3
4/19/2024	AM-03	Lahaina Intermediate School	1.1	SE	75	70	755.0
4/19/2024	AM-04	Lahaina Boys & Girls Club	1.1	SSW	75	69	763.9
4/20/2024	AM-01	Leialii Hawaiian Homelands	0.9	SSE	79	62	761.8
4/20/2024	AM-02	WW Pump Station #4	0.9	S	77	67	764.1
4/20/2024	AM-03	Lahaina Intermediate School	1.1	SE	75	70	754.7
4/20/2024	AM-04	Lahaina Boys & Girls Club	1.1	S	76	68	763.6
4/21/2024	AM-01	Leialii Hawaiian Homelands	1.4	ESE	77	60	762.3
4/21/2024	AM-02	WW Pump Station #4	1.0	SSE	77	64	764.6
4/21/2024	AM-03	Lahaina Intermediate School	1.1	SE	74	67	755.2
4/21/2024	AM-04	Lahaina Boys & Girls Club	1.1	S	75	67	764.1
4/22/2024	AM-01	Leialii Hawaiian Homelands	1.5	SSE	79	57	762.0
4/22/2024	AM-02	WW Pump Station #4	1.2	SSE	78	61	764.2
4/22/2024	AM-03	Lahaina Intermediate School	1.3	SE	76	64	754.9
4/22/2024	AM-04	Lahaina Boys & Girls Club	1.4	SSW	76	64	763.8
4/23/2024	AM-01	Leialii Hawaiian Homelands	0.9	SE	80	55	761.8
4/23/2024	AM-02	WW Pump Station #4	1.0	SSE	78	61	764.1
4/23/2024	AM-03	Lahaina Intermediate School	1.1	SE	76	63	754.7
4/23/2024	AM-04	Lahaina Boys & Girls Club	1.1	S	77	63	763.8
4/24/2024	AM-01	Leialii Hawaiian Homelands	1.2	SE	78	61	762.7
4/24/2024	AM-02	WW Pump Station #4	1.0	SSE	77	65	764.9
4/24/2024	AM-03	Lahaina Intermediate School	1.0	SE	75	67	755.6
4/24/2024	AM-04	Lahaina Boys & Girls Club	1.0	S	75	68	764.5

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

Appendix 1

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

EMSL Order:	042408316
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Wildfires - Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	04/24/2024 09:24 AM
Analysis Date:	04/30/2024
Report Date:	05/01/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM01-041824-AB** **Sample Description: DK796807**

EMSL Sample Number:	042408316-0001		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7014.8
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	2			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0009**		**Limit of Detection (Structures/cc):**	**0.0027**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.72**	**< 0.0027**	**Not Applicable**	**0.0027**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0027**	**Not Applicable**	**0.0027**
Actinolite	ADX	0	0	< 46.72	< 0.0027	Not Applicable	0.0027
Amosite	ADX	0	0	< 46.72	< 0.0027	Not Applicable	0.0027
Anthophyllite	ADX	0	0	< 46.72	< 0.0027	Not Applicable	0.0027
Crocidolite	ADX	0	0	< 46.72	< 0.0027	Not Applicable	0.0027
Tremolite	ADX	0	0	< 46.72	< 0.0027	Not Applicable	0.0027
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0027**	**Not Applicable**	**0.0027**
Other Minerals	-	0	0	< 46.72	< 0.0027	Not Applicable	0.0027
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 0.0027**	**Not Applicable**	**0.0027**

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

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 46.72**	**< 0.0027**	**Not Applicable**	**0.0027**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0027**	**Not Applicable**	**0.0027**
Actinolite	ADX	0	0	< 46.72	< 0.0027	Not Applicable	0.0027
Amosite	ADX	0	0	< 46.72	< 0.0027	Not Applicable	0.0027
Anthophyllite	ADX	0	0	< 46.72	< 0.0027	Not Applicable	0.0027
Crocidolite	ADX	0	0	< 46.72	< 0.0027	Not Applicable	0.0027
Tremolite	ADX	0	0	< 46.72	< 0.0027	Not Applicable	0.0027
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0027**	**Not Applicable**	**0.0027**
Other Minerals	-	0	0	< 46.72	< 0.0027	Not Applicable	0.0027
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.72**	**< 0.0027**	**Not Applicable**	**0.0027**

Comment

Robyn Ray
Approved Signatory

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

EMSL Order ID:	**042408316**
Client:	**Tetra Tech**
Project ID:	**Maui Wildfires - Lahaina**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042408316-0001 **Customer Sample:** MFL-AM01-041824-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					
A6	A6	None Detected									
A6	D7	None Detected									
A6	G10	None Detected									
A7	J3	None Detected									
A7	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:	042408316
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Wildfires - Lahaina**

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Fax:	N/A
Received Date:	04/24/2024 09:24 AM
Analysis Date:	04/30/2024
Report Date:	05/01/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-041824-AB**		**Sample Description:**	**DK796919**
EMSL Sample Number:	042408316-0002		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7179.3
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	2			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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EMSL Order ID:	**042408316**
Client:	**Tetra Tech**
Project ID:	**Maui Wildfires - Lahaina**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042408316-0002 **Customer Sample:** MFL-AM02-041824-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	B9	None Detected									
B2	E8	None Detected									
B2	G5	None Detected									
B3	H6	None Detected									
B3	B8	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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Report Date:	05/01/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM03-041824-AB** **Sample Description: DK797286**

EMSL Sample Number:	042408316-0003		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7279.5
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	2			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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EMSL Order ID:	**042408316**
Client:	**Tetra Tech**
Project ID:	**Maui Wildfires - Lahaina**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042408316-0003 **Customer Sample:** MFL-AM03-041824-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					
B7	C7	None Detected									
B7	E8	None Detected									
B7	H10	None Detected									
B8	D8	None Detected									
B8	G5	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
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Analysis Date:	04/30/2024
Report Date:	05/01/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM04-041824-AB** **Sample Description: DK796994**

EMSL Sample Number:	042408316-0004		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7291.2
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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EMSL Order ID:	**042408316**
Client:	**Tetra Tech**
Project ID:	**Maui Wildfires - Lahaina**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042408316-0004 **Customer Sample:** MFL-AM04-041824-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	F2	None Detected									
C1	H5	None Detected									
C1	J3	None Detected									
C2	B5	None Detected									
C2	E3	None Detected									

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

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ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-041824-AB** **Sample Description: DK796904**

EMSL Sample Number:	042408316-0005		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.001			

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

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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Client:	**Tetra Tech**
Project ID:	**Maui Wildfires - Lahaina**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042408316-0005 **Customer Sample:** MFL-FB01-041824-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					
C6	J7	None Detected									
C6	H5	None Detected									
C6	F3	None Detected									
C6	D4	None Detected									
C6	B6	None Detected									
C7	A7	None Detected									
C7	C8	None Detected									
C7	E4	None Detected									
C7	G5	None Detected									
C7	I7	None Detected									

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

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EMSL Order:	042408316
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Customer PO:	1207085
Project ID:	N/A

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Analysis Date:	04/30/2024
Report Date:	05/01/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM02-041924-AB** **Sample Description:** **Dk796830**

EMSL Sample Number:	042408316-0006		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	6739.2
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0009**		**Limit of Detection (Structures/cc):**	**0.0027**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.72**	**< 0.0027**	**Not Applicable**	**0.0027**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0027**	**Not Applicable**	**0.0027**
Actinolite	ADX	0	0	< 46.72	< 0.0027	Not Applicable	0.0027
Amosite	ADX	0	0	< 46.72	< 0.0027	Not Applicable	0.0027
Anthophyllite	ADX	0	0	< 46.72	< 0.0027	Not Applicable	0.0027
Crocidolite	ADX	0	0	< 46.72	< 0.0027	Not Applicable	0.0027
Tremolite	ADX	0	0	< 46.72	< 0.0027	Not Applicable	0.0027
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0027**	**Not Applicable**	**0.0027**
Other Minerals	-	0	0	< 46.72	< 0.0027	Not Applicable	0.0027
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 0.0027**	**Not Applicable**	**0.0027**

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

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 46.72**	**< 0.0027**	**Not Applicable**	**0.0027**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0027**	**Not Applicable**	**0.0027**
Actinolite	ADX	0	0	< 46.72	< 0.0027	Not Applicable	0.0027
Amosite	ADX	0	0	< 46.72	< 0.0027	Not Applicable	0.0027
Anthophyllite	ADX	0	0	< 46.72	< 0.0027	Not Applicable	0.0027
Crocidolite	ADX	0	0	< 46.72	< 0.0027	Not Applicable	0.0027
Tremolite	ADX	0	0	< 46.72	< 0.0027	Not Applicable	0.0027
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0027**	**Not Applicable**	**0.0027**
Other Minerals	-	0	0	< 46.72	< 0.0027	Not Applicable	0.0027
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.72**	**< 0.0027**	**Not Applicable**	**0.0027**

Comment

Robyn Ray
Approved Signatory

EMSL Analytical, Inc.
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EMSL Order ID:	**042408316**
Client:	**Tetra Tech**
Project ID:	**Maui Wildfires - Lahaina**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042408316-0006 **Customer Sample:** MFL-AM02-041924-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	I4	None Detected									
D2	F2	None Detected									
D2	C4	None Detected									
D3	I6	None Detected									
D3	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:	042408316
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Wildfires - Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	04/24/2024 09:24 AM
Analysis Date:	04/30/2024
Report Date:	05/01/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM03-041924-AB** **Sample Description: Dk796827**

EMSL Sample Number:	042408316-0007		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7194.2
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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EMSL Order ID:	**042408316**
Client:	**Tetra Tech**
Project ID:	**Maui Wildfires - Lahaina**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042408316-0007 **Customer Sample:** MFL-AM03-041924-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	C10	None Detected									
D5	E7	None Detected									
D5	H6	None Detected									
D6	I3	None Detected									
D6	D5	None Detected									

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

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

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Received Date:	04/24/2024 09:24 AM
Analysis Date:	04/30/2024
Report Date:	05/01/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM04-041924-AB** **Sample Description: Dk796823**

EMSL Sample Number:	042408316-0008		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7443.2
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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EMSL Order ID:	**042408316**
Client:	**Tetra Tech**
Project ID:	**Maui Wildfires - Lahaina**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042408316-0008 **Customer Sample:** MFL-AM04-041924-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	G7	None Detected									
E1	J6	None Detected									
E2	B4	None Detected									
E2	D6	None Detected									
E2	H5	None Detected									

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

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

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Received Date:	04/24/2024 09:24 AM
Analysis Date:	04/30/2024
Report Date:	05/01/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-041924-AB** **Sample Description:** **Dk796887**

EMSL Sample Number:	042408316-0009		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi² Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.001			

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

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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EMSL Order ID:	**042408316**
Client:	**Tetra Tech**
Project ID:	**Maui Wildfires - Lahaina**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042408316-0009 **Customer Sample:** MFL-FB01-041924-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	A4	None Detected									
E5	C6	None Detected									
E5	E7	None Detected									
E5	G8	None Detected									
E5	I7	None Detected									
E7	J6	None Detected									
E7	H4	None Detected									
E7	G3	None Detected									
E7	E4	None Detected									
E7	C3	None Detected									

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

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EMSL Order:	042408316
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	04/24/2024 09:24 AM
Analysis Date:	04/30/2024
Report Date:	05/01/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM01-042024-AB** **Sample Description: Dk796828**

EMSL Sample Number:	042408316-0010		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	6703.9
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	2			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0009**		**Limit of Detection (Structures/cc):**	**0.0027**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.72**	**< 0.0027**	**Not Applicable**	**0.0027**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0027**	**Not Applicable**	**0.0027**
Actinolite	ADX	0	0	< 46.72	< 0.0027	Not Applicable	0.0027
Amosite	ADX	0	0	< 46.72	< 0.0027	Not Applicable	0.0027
Anthophyllite	ADX	0	0	< 46.72	< 0.0027	Not Applicable	0.0027
Crocidolite	ADX	0	0	< 46.72	< 0.0027	Not Applicable	0.0027
Tremolite	ADX	0	0	< 46.72	< 0.0027	Not Applicable	0.0027
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0027**	**Not Applicable**	**0.0027**
Other Minerals	-	0	0	< 46.72	< 0.0027	Not Applicable	0.0027
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 0.0027**	**Not Applicable**	**0.0027**

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

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 46.72**	**< 0.0027**	**Not Applicable**	**0.0027**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0027**	**Not Applicable**	**0.0027**
Actinolite	ADX	0	0	< 46.72	< 0.0027	Not Applicable	0.0027
Amosite	ADX	0	0	< 46.72	< 0.0027	Not Applicable	0.0027
Anthophyllite	ADX	0	0	< 46.72	< 0.0027	Not Applicable	0.0027
Crocidolite	ADX	0	0	< 46.72	< 0.0027	Not Applicable	0.0027
Tremolite	ADX	0	0	< 46.72	< 0.0027	Not Applicable	0.0027
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0027**	**Not Applicable**	**0.0027**
Other Minerals	-	0	0	< 46.72	< 0.0027	Not Applicable	0.0027
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.72**	**< 0.0027**	**Not Applicable**	**0.0027**

Comment

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EMSL Order ID:	**042408316**
Client:	**Tetra Tech**
Project ID:	**Maui Wildfires - Lahaina**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042408316-0010 **Customer Sample:** MFL-AM01-042024-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	D2	None Detected									
F1	F4	None Detected									
F1	H6	None Detected									
F2	C6	None Detected									
F2	G8	None Detected									

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

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EMSL Order:	042408316
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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Received Date:	04/24/2024 09:24 AM
Analysis Date:	04/30/2024
Report Date:	05/01/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM02-042024-AB** **Sample Description: Dk796920**

EMSL Sample Number:	042408316-0011		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7197.1
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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EMSL Order ID:	**042408316**
Client:	**Tetra Tech**
Project ID:	**Maui Wildfires - Lahaina**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042408316-0011 **Customer Sample:** MFL-AM02-042024-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	I2	None Detected									
F5	F1	None Detected									
F5	D3	None Detected									
F6	G4	None Detected									
F6	D7	None Detected									

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

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

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Analysis Date:	04/30/2024
Report Date:	05/01/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-042024-AB**		**Sample Description:**	**Dk796899**
EMSL Sample Number:	042408316-0012		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7223.1
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	2			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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EMSL Order ID:	**042408316**
Client:	**Tetra Tech**
Project ID:	**Maui Wildfires - Lahaina**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042408316-0012 **Customer Sample:** MFL-AM03-042024-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	A7	None Detected									
G1	E10	None Detected									
G1	I8	None Detected									
G2	B6	None Detected									
G2	H8	None Detected									

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

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Customer PO:	1207085
Project ID:	N/A

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Analysis Date:	04/30/2024
Report Date:	05/01/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-042024-AB** **Sample Description:** **Dk797028**

EMSL Sample Number:	042408316-0013		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.001			

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

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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EMSL Order ID:	**042408316**
Client:	**Tetra Tech**
Project ID:	**Maui Wildfires - Lahaina**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042408316-0013 **Customer Sample:** MFL-FB01-042024-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
G5	J5	None Detected									
G5	H4	None Detected									
G5	F1	None Detected									
G5	D2	None Detected									
G5	B2	None Detected									
G6	J4	None Detected									
G6	H2	None Detected									
G6	F1	None Detected									
G6	E4	None Detected									
G6	C3	None Detected									

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

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Analysis Date:	04/30/2024
Report Date:	05/01/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM01-042124-AB** **Sample Description: Dk797052**

EMSL Sample Number:	042408316-0014		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7543.2
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	4
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):	**0.0010**		**Limit of Detection (Structures/cc):**	**0.0030**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 58.40**	**< 0.0030**	**Not Applicable**	**0.0030**
Total Amphibole	**ADX**	**0**	**0**	**< 58.40**	**< 0.0030**	**Not Applicable**	**0.0030**
Actinolite	ADX	0	0	< 58.40	< 0.0030	Not Applicable	0.0030
Amosite	ADX	0	0	< 58.40	< 0.0030	Not Applicable	0.0030
Anthophyllite	ADX	0	0	< 58.40	< 0.0030	Not Applicable	0.0030
Crocidolite	ADX	0	0	< 58.40	< 0.0030	Not Applicable	0.0030
Tremolite	ADX	0	0	< 58.40	< 0.0030	Not Applicable	0.0030
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 58.40**	**< 0.0030**	**Not Applicable**	**0.0030**
Other Minerals	-	0	0	< 58.40	< 0.0030	Not Applicable	0.0030
Total All Structures	**-**	**0**	**0**	**< 58.40**	**< 0.0030**	**Not Applicable**	**0.0030**

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

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 58.40**	**< 0.0030**	**Not Applicable**	**0.0030**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 58.40**	**< 0.0030**	**Not Applicable**	**0.0030**
Actinolite	ADX	0	0	< 58.40	< 0.0030	Not Applicable	0.0030
Amosite	ADX	0	0	< 58.40	< 0.0030	Not Applicable	0.0030
Anthophyllite	ADX	0	0	< 58.40	< 0.0030	Not Applicable	0.0030
Crocidolite	ADX	0	0	< 58.40	< 0.0030	Not Applicable	0.0030
Tremolite	ADX	0	0	< 58.40	< 0.0030	Not Applicable	0.0030
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 58.40**	**< 0.0030**	**Not Applicable**	**0.0030**
Other Minerals	-	0	0	< 58.40	< 0.0030	Not Applicable	0.0030
Total All Structures (PCMe)	**-**	**0**	**0**	**< 58.40**	**< 0.0030**	**Not Applicable**	**0.0030**

Comment

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EMSL Order ID:	**042408316**
Client:	**Tetra Tech**
Project ID:	**Maui Wildfires - Lahaina**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042408316-0014 **Customer Sample:** MFL-AM01-042124-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	B6	None Detected									
H2	G9	None Detected									
H3	H4	None Detected									
H3	E4	None Detected									

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

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EMSL Order:	042408316
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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Received Date:	04/24/2024 09:24 AM
Analysis Date:	04/30/2024
Report Date:	05/01/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM02-042124-AB** **Sample Description: Dk797060**

EMSL Sample Number:	042408316-0015		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7231.8
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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EMSL Order ID:	**042408316**
Client:	**Tetra Tech**
Project ID:	**Maui Wildfires - Lahaina**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042408316-0015 **Customer Sample:** MFL-AM02-042124-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	E3	None Detected									
H5	C2	None Detected									
H5	A5	None Detected									
H6	A7	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:	042408316
Customer ID:	TTDC42
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Project ID:	N/A

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Report Date:	05/01/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM03-042124-AB** **Sample Description: Dk797047**

EMSL Sample Number:	042408316-0016		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7506.4
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	2			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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:	**042408316**
Client:	**Tetra Tech**
Project ID:	**Maui Wildfires - Lahaina**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042408316-0016 **Customer Sample:** MFL-AM03-042124-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
I1	B2	None Detected									
I1	E7	None Detected									
I1	J8	None Detected									
I2	F2	None Detected									
I2	A1	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:	042408316
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Wildfires - Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	04/24/2024 09:24 AM
Analysis Date:	04/30/2024
Report Date:	05/01/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM04-042124-AB**		**Sample Description:**	**Dk797032**
EMSL Sample Number:	042408316-0017		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7149.5
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Robyn Ray
Approved Signatory

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

EMSL Order ID:	**042408316**
Client:	**Tetra Tech**
Project ID:	**Maui Wildfires - Lahaina**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042408316-0017 **Customer Sample:** MFL-AM04-042124-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	A9	None Detected									
I5	D6	None Detected									
I5	I5	None Detected									
I6	H5	None Detected									
I6	B2	None Detected									

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

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

EMSL Order:	042408316
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Wildfires - Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	04/24/2024 09:24 AM
Analysis Date:	04/30/2024
Report Date:	05/01/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-042124-AB** **Sample Description:** **Dk797039**

EMSL Sample Number:	042408316-0018		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.001			

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

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Robyn Ray
Approved Signatory

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

EMSL Order ID:	**042408316**
Client:	**Tetra Tech**
Project ID:	**Maui Wildfires - Lahaina**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042408316-0018 **Customer Sample:** MFL-FB01-042124-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
J1	A7	None Detected									
J1	C8	None Detected									
J1	E7	None Detected									
J1	G8	None Detected									
J1	I8	None Detected									
J2	A7	None Detected									
J2	C10	None Detected									
J2	E7	None Detected									
J2	G5	None Detected									
J2	I7	None Detected									

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

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

EMSL Order:	042408316
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Wildfires - Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	04/24/2024 09:24 AM
Analysis Date:	04/30/2024
Report Date:	05/01/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**Lab Blank**		**Sample Description:**	**Lab Blank**
EMSL Sample Number:	042408316-0019		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**N/A**		**Limit of Detection (Structures/cc):**	**N/A**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Robyn Ray
Approved Signatory

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

EMSL Order ID:	**042408316**
Client:	**Tetra Tech**
Project ID:	**Maui Wildfires - Lahaina**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042408316-0019 **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	H3	None Detected									
A1	F2	None Detected									
A1	D4	None Detected									
A1	B6	None Detected									
A4	A5	None Detected									
A4	C9	None Detected									
A4	E7	None Detected									
A4	G5	None Detected									
A4	I2	None Detected									

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

OrderID: 042408316

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

EMSL Order Number / Lab Use Only

#042408316

RECEIVED EMSL CINNAMINSON, NJ 24 APR 24 AM 11:41

EMSL Analytical, Inc.
200 Route 130 North
Cinnaminson, NJ 08077
PHONE: (800) 220-3675
EMAIL: CinnAsblab@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 Wildfires - 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: Isabelle Von Busen
Sampled By Signature:
No. of Samples in Shipment 18

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-AM01-041824-AB	DK796807	7014.816	04/18/24 1105
MFL-AM02-041824-AB	DK796919	7179.264	04/18/24 1123
MFL-AM03-041824-AB	DK797286	7279.515	04/18/24 1308
MFL-AM04-041824-AB	DK796994	7291.192	04/18/24 1329
MFL-FB01-041824-AB	DK796904	0	04/18/24 1200
~~MFL-AM01-041924-AB~~	VOID DK796924	~~6167.478~~	~~04/19/24 1112~~ (2)
MFL-AM02-041924-AB	DK796830	6739.185	04/19/24 1134
MFL-AM03-041924-AB	DK796827	7194.233	04/19/24 1306

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

MFL-AM01-041924-AB and MFL-AM04-042024-AB voided because post-cal values ~~was~~ were greater than 10% deviation from pre-cal values. (1)

Method of Shipment: FedEx

Relinquished by: Date/Time: 4/22/24 1102
Relinquished by: Date/Time:

Sample Condition Upon Receipt:
Received by: FedEx Date/Time 4/24/24 9:24 AM
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.

(18)

All samples received acceptable for analysis.

OrderID: 042408316

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL Order Number / Lab Use Only

#042408316

RECEIVED
EMSL
CINNAMINSON, NJ

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

24 APR 24 AM11:41

Sample Number	Sample Location / Description		Volume, Area or Homogeneous Area	Date / Time Sampled (Air Monitoring Only)
MFL-AM04-041924-AB		DK796823	7443.248	04/19/24 1327
MFL-FB01-041924-AB		DK796887	0	04/19/24 1200
MFL-AM01-042024-AB		DK796828	6703.915	04/20/24 1052
MFL-AM02-042024-AB		DK796920	7197.107	04/20/24 1119
MFL-AM03-042024-AB		DK796899	7223.073	04/20/24 1259
~~MFL-AM04-042024-AB~~	VOID	DK797021	~~7604.208~~	~~04/20/24 1331~~ (L)
MFL-FB01-042024-AB		DK797028	0	04/20/24 1200
MFL-AM01-042124-AB		DK797052	7543.152	04/21/24 1057
MFL-AM02-042124-AB		DK797060	7231.826	04/21/24 1119
MFL-AM03-042124-AB		DK797047	7506.400	04/21/24 1303
MFL-AM04-042124-AB		DK797032	7149.536	04/21/24 1326
MFL-FB01-042124-AB		DK797039	0	04/21/24 1200

Method of Shipment: FedEx		Sample Condition Upon Receipt:	
Relinquished by:	Date/Time: 4/22/24 1100	Received by:	Date/Time
Relinquished by:	Date/Time:	Received by:	Date/Time

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

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

Stage 1 Data Verification Checklist – Asbestos

HDOH CAB – Ambient Community Air Sampling – Lahaina

Task Order No. 23141

Reviewed by:
Kierra Johnson 05/02/2024 and Shanna Vasser 05/03/2024
Laboratory: EMSL Analytical, Inc. – North Cinnaminson, NJ
Collection date(s): 04/18/2024 – 04/21/2024
Report No: 42408316

√	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:

4. MFL-AM01-041924-AB and MFL-AM04-042024-AB were listed on the CoC, crossed out, and voided due to post-cal value exceeding criteria. The samples were not shipped to the laboratory.

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:	042408734
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Wildfire - Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	04/29/2024 09:30 AM
Analysis Date:	05/02/2024
Report Date:	05/03/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM02-042224-AB** **Sample Description: DK797057**

EMSL Sample Number:	042408734-0001		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7356.2
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	10			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Robyn Ray
Approved Signatory

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

EMSL Order ID:	**042408734**
Client:	**Tetra Tech**
Project ID:	**Maui Wildfire - Lahaina**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042408734-0001 **Customer Sample:** MFL-AM02-042224-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	H8	None Detected									
H2	E4	None Detected									
H2	A2	None Detected									
H3	H5	None Detected									
H3	C7	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:	042408734
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Wildfire - Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	04/29/2024 09:30 AM
Analysis Date:	05/02/2024
Report Date:	05/03/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM03-042224-AB** **Sample Description: DK797050**

EMSL Sample Number:	042408734-0002		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7282.5
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	5			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Robyn Ray
Approved Signatory

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

EMSL Order ID:	**042408734**
Client:	**Tetra Tech**
Project ID:	**Maui Wildfire - Lahaina**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042408734-0002 **Customer Sample:** MFL-AM03-042224-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	C3	None Detected									
H5	F8	None Detected									
H5	I6	None Detected									
H6	A4	None Detected									
H6	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:	042408734
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Wildfire - Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	04/29/2024 09:30 AM
Analysis Date:	05/01/2024
Report Date:	05/03/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM04-042224-AB** **Sample Description: DK797024**

EMSL Sample Number:	042408734-0003		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7209.4
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	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**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**

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

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

Comment

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Approved Signatory

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EMSL Order ID:	**042408734**
Client:	**Tetra Tech**
Project ID:	**Maui Wildfire - Lahaina**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042408734-0003 **Customer Sample:** MFL-AM04-042224-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	A6	None Detected									
B2	D8	None Detected									
B2	I5	None Detected									
B3	G4	None Detected									
B3	D5	None Detected									

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

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EMSL Order:	042408734
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

Attn: **Chelsea Saber**
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Phone:	(703) 489-2674
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Analysis Date:	05/01/2024
Report Date:	05/03/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-042224-AB** **Sample Description: DK797027**

EMSL Sample Number:	042408734-0004		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.001			

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

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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EMSL Order ID:	**042408734**
Client:	**Tetra Tech**
Project ID:	**Maui Wildfire - Lahaina**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042408734-0004 **Customer Sample:** MFL-FB01-042224-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	J3	None Detected									
B5	H7	None Detected									
B5	E5	None Detected									
B5	C8	None Detected									
B6	D7	None Detected									
B6	G7	None Detected									
B6	J7	None Detected									
B7	A5	None Detected									
B7	F4	None Detected									
B7	I6	None Detected									

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

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EMSL Order:	042408734
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Phone:	(703) 489-2674
Fax:	N/A
Received Date:	04/29/2024 09:30 AM
Analysis Date:	05/01/2024
Report Date:	05/03/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-042324-AB**	**Sample Description:**	**DK797035**
EMSL Sample Number:	042408734-0005	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L) :	7261.2
Aspect ratio for fiber definition:	3:1	Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5	Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A *(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD	Analyst:	G.Barry
Minimum Level of analysis (amphibole):	ADX		
Estimated Particulate Loading on Filter %:	4		
Target Analytical Sensitivity (Structures/cc):	0.001		
Analytical Sensitivity (Structures/cc):	**0.0008**	**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Robyn Ray
Approved Signatory

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

EMSL Order ID:	**042408734**
Client:	**Tetra Tech**
Project ID:	**Maui Wildfire - Lahaina**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042408734-0005 **Customer Sample:** MFL-AM02-042324-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	A6	None Detected									
C2	C3	None Detected									
C2	G7	None Detected									
C3	D7	None Detected									
C3	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:	042408734
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Wildfire - Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	04/29/2024 09:30 AM
Analysis Date:	05/01/2024
Report Date:	05/03/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM03-042324-AB** **Sample Description: DK797020**

EMSL Sample Number:	042408734-0006		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7397.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	5			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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EMSL Order ID:	**042408734**
Client:	**Tetra Tech**
Project ID:	**Maui Wildfire - Lahaina**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042408734-0006 **Customer Sample:** MFL-AM03-042324-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					
C6	B4	None Detected									
C6	E7	None Detected									
C6	G3	None Detected									
C7	A2	None Detected									
C7	F3	None Detected									

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

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EMSL Order:	042408734
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Customer PO:	1207085
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Analysis Date:	05/01/2024
Report Date:	05/03/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM04-042324-AB** **Sample Description: DK797042**

EMSL Sample Number:	042408734-0007		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7221.3
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	5			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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EMSL Order ID:	**042408734**
Client:	**Tetra Tech**
Project ID:	**Maui Wildfire - Lahaina**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042408734-0007 **Customer Sample:** MFL-AM04-042324-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	C6	None Detected									
D2	E3	None Detected									
D2	H7	None Detected									
D3	D4	None Detected									
D3	F9	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:	042408734
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Customer PO:	1207085
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Received Date:	04/29/2024 09:30 AM
Analysis Date:	05/01/2024
Report Date:	05/03/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-042324-AB** **Sample Description: DK797043**

EMSL Sample Number:	042408734-0008		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.001			

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

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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EMSL Order ID:	**042408734**
Client:	**Tetra Tech**
Project ID:	**Maui Wildfire - Lahaina**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042408734-0008 **Customer Sample:** MFL-FB01-042324-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	J5	None Detected									
D5	H8	None Detected									
D5	F4	None Detected									
D5	A6	None Detected									
D6	B3	None Detected									
D6	D7	None Detected									
D6	G5	None Detected									
D7	A3	None Detected									
D7	E2	None Detected									
D7	G8	None Detected									

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

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

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Received Date:	04/29/2024 09:30 AM
Analysis Date:	05/01/2024
Report Date:	05/03/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM01-042424-AB** **Sample Description: DK797030**

EMSL Sample Number:	042408734-0009		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	6937.5
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	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):	**0.0009**		**Limit of Detection (Structures/cc):**	**0.0027**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.72**	**< 0.0027**	**Not Applicable**	**0.0027**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0027**	**Not Applicable**	**0.0027**
Actinolite	ADX	0	0	< 46.72	< 0.0027	Not Applicable	0.0027
Amosite	ADX	0	0	< 46.72	< 0.0027	Not Applicable	0.0027
Anthophyllite	ADX	0	0	< 46.72	< 0.0027	Not Applicable	0.0027
Crocidolite	ADX	0	0	< 46.72	< 0.0027	Not Applicable	0.0027
Tremolite	ADX	0	0	< 46.72	< 0.0027	Not Applicable	0.0027
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0027**	**Not Applicable**	**0.0027**
Other Minerals	-	0	0	< 46.72	< 0.0027	Not Applicable	0.0027
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 0.0027**	**Not Applicable**	**0.0027**

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

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 46.72**	**< 0.0027**	**Not Applicable**	**0.0027**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0027**	**Not Applicable**	**0.0027**
Actinolite	ADX	0	0	< 46.72	< 0.0027	Not Applicable	0.0027
Amosite	ADX	0	0	< 46.72	< 0.0027	Not Applicable	0.0027
Anthophyllite	ADX	0	0	< 46.72	< 0.0027	Not Applicable	0.0027
Crocidolite	ADX	0	0	< 46.72	< 0.0027	Not Applicable	0.0027
Tremolite	ADX	0	0	< 46.72	< 0.0027	Not Applicable	0.0027
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0027**	**Not Applicable**	**0.0027**
Other Minerals	-	0	0	< 46.72	< 0.0027	Not Applicable	0.0027
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.72**	**< 0.0027**	**Not Applicable**	**0.0027**

Comment

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EMSL Order ID:	**042408734**
Client:	**Tetra Tech**
Project ID:	**Maui Wildfire - Lahaina**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042408734-0009 **Customer Sample:** MFL-AM01-042424-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
E2	I7	None Detected									
E2	E4	None Detected									
E2	A5	None Detected									
E3	H3	None Detected									
E3	E5	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:	042408734
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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Received Date:	04/29/2024 09:30 AM
Analysis Date:	05/01/2024
Report Date:	05/03/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM02-042424-AB** **Sample Description: DK797055**

EMSL Sample Number:	042408734-0010		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7113.7
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	5			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Robyn Ray
Approved Signatory

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

EMSL Order ID:	**042408734**
Client:	**Tetra Tech**
Project ID:	**Maui Wildfire - Lahaina**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042408734-0010 **Customer Sample:** MFL-AM02-042424-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	J6	None Detected									
E6	E9	None Detected									
E6	B7	None Detected									
E7	D3	None Detected									
E7	G8	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:	042408734
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Wildfire - Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	04/29/2024 09:30 AM
Analysis Date:	05/01/2024
Report Date:	05/03/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM03-042424-AB** **Sample Description: DK797039**

EMSL Sample Number:	042408734-0011		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7358.7
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Robyn Ray
Approved Signatory

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

EMSL Order ID:	**042408734**
Client:	**Tetra Tech**
Project ID:	**Maui Wildfire - Lahaina**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042408734-0011 **Customer Sample:** MFL-AM03-042424-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	C8	None Detected									
E2	D3	None Detected									
E2	H5	None Detected									
E3	I4	None Detected									
E3	E7	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:	042408734
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Wildfire - Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	04/29/2024 09:30 AM
Analysis Date:	05/01/2024
Report Date:	05/03/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM04-042424-AB**		**Sample Description:**	**DK797036**
EMSL Sample Number:	042408734-0012		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7159.7
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	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**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**

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

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

Comment

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

EMSL Order ID:	**042408734**
Client:	**Tetra Tech**
Project ID:	**Maui Wildfire - Lahaina**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042408734-0012 **Customer Sample:** MFL-AM04-042424-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	B9	None Detected									
F5	E5	None Detected									
F5	I6	None Detected									
F6	D4	None Detected									
F6	F8	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:	042408734
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Wildfire - Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	04/29/2024 09:30 AM
Analysis Date:	05/01/2024
Report Date:	05/03/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-042424-AB** **Sample Description: DK797038**

EMSL Sample Number:	042408734-0013		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.001			

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

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Robyn Ray
Approved Signatory

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

EMSL Order ID:	**042408734**
Client:	**Tetra Tech**
Project ID:	**Maui Wildfire - Lahaina**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042408734-0013 **Customer Sample:** MFL-FB01-042424-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	I4	None Detected									
G2	I8	None Detected									
G2	E4	None Detected									
G2	C6	None Detected									
G3	J7	None Detected									
G3	F3	None Detected									
G3	D6	None Detected									
G4	H5	None Detected									
G4	E9	None Detected									
G4	B7	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:	042408734
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Wildfire - Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	04/29/2024 09:30 AM
Analysis Date:	05/01/2024
Report Date:	05/03/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**Lab Blank**		**Sample Description:**	**Lab Blank**
EMSL Sample Number:	042408734-0014		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	9
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**	**< 25.95**			
Total Amphibole	**ADX**	**0**	**0**	**< 25.95**			
Actinolite	ADX	0	0	< 25.95			
Amosite	ADX	0	0	< 25.95			
Anthophyllite	ADX	0	0	< 25.95			
Crocidolite	ADX	0	0	< 25.95			
Tremolite	ADX	0	0	< 25.95			
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 25.95**			
Other Minerals	-	0	0	< 25.95			
Total All Structures	**-**	**0**	**0**	**< 25.95**			

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**	**< 25.95**			
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 25.95**			
Actinolite	ADX	0	0	< 25.95			
Amosite	ADX	0	0	< 25.95			
Anthophyllite	ADX	0	0	< 25.95			
Crocidolite	ADX	0	0	< 25.95			
Tremolite	ADX	0	0	< 25.95			
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 25.95**			
Other Minerals	-	0	0	< 25.95			
Total All Structures (PCMe)	**-**	**0**	**0**	**< 25.95**			

Comment

Approved Signatory

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

EMSL Order ID:	**042408734**
Client:	**Tetra Tech**
Project ID:	**Maui Wildfire - Lahaina**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042408734-0014 **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					
G5	I6	None Detected									
G5	H3	None Detected									
G5	D7	None Detected									
G5	A4	None Detected									
G6	J4	None Detected									
G6	F9	None Detected									
G6	C5	None Detected									
G7	B7	None Detected									
G7	E5	None Detected									

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

OrderID: 042408734

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL Order Number / Lab Use Only

#042408734

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EMAIL: CinnAsblab@EMSL.com

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

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

Customer Information		Billing Information	
Customer ID:		Billing ID:	
Company Name:	Tetra Tech	Company Name:	
Contact Name:	Chelsea Saber	Billing Contact:	
Street Address:	1560 Broadway STE 1400	Street Address:	
City, State, Zip:	Denver, CO 80202	City, State, Zip:	Country:
Country:	USA		
Phone:	303-489-2674	Phone:	
Email(s) for Report:	chelsea.saber@tetratech.com	Email(s) for Invoice:	

Project Information

Project Name/No: Mavi Wildfire - 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: Elia Vargas Saldaña
Sampled By Signature:
No. of Samples in Shipment: 13

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

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*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-AM01-042224-AB~~	~~DK797052~~ 33 (IW)	~~6570.653~~	~~04/22/24~~	~~1102~~ VOID (KKS)
MFL-AM02-042224-AB	DK797057	7356.240	04/22/24	1121
MFL-AM03-042224-AB	DK797050	7282.463	04/22/24	1306
MFL-AM04-042224-AB	DK797024	7209.438	04/22/24	1327
MFL-FB01-042224-AB	DK797039 27 (IW)	0	04/22/24	1200
~~MFL-AM01-042324-AB~~	~~DK797046~~	~~7574.648~~	~~04/23/24~~	~~1109~~ VOID (KKS)
MFL-AM02-042324-AB	DK797035	7261.181	04/23/24	1122
MFL-AM03-042324-AB	DK797020	7396.980	04/23/24	1305

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

Samples MFL-AM01-042224-AB and MFL-AM01-042324-AB voided because post-cal value was greater than 10% deviation from pre-cal value

All samples received acceptable for analysis.

Method of Shipment:	FedEx	Sample Condition Upon Receipt:			
Relinquished by:		Date/Time: 04/25/24 1100	Received by:	FX	Date/Time: 4/26/24 930a
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.

13 ok

OrderID: 042408734

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL Order Number / Lab Use Only

#042408734

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-AM04-042324-AB	DK797042	7,221.348	04/23/24 1326
MFL-FB01-042324-AB	DK797043	0	04/23/24 1200
MFL-AM01-042424-AB	DK797030	6,937.549	04/24/24 1105
MFL-AM02-042424-AB	DK797055	7,113.744	04/24/24 1125
MFL-AM03-042424-AB	DK797029	7,358.677	04/24/24 1307
MFL-AM04-042424-AB	DK797036	7,159.680	04/24/24 1329
MFL-FB01-042424-AB	DK797038	0	04/24/24 1200

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EMSL
CINNAMINSON, NJ
2024 APR 29 A 11:25

Method of Shipment: FedEx		Sample Condition Upon Receipt:	
Relinquished by:	Date/Time: 04/25/24 400	Received by: FX	Date/Time: 4/29/24
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 05/06/2024 and Shanna Vasser 05/08/2024
Laboratory: EMSL Analytical, Inc. – North Cinnaminson, NJ
Collection date(s): 04/22/2024 – 04/24/2024
Report No: 42408734

√	1.	Chain of custody (CoC) documentation is present.
√	2.	Sample receipt condition information is present and acceptable.
√	3.	Laboratory conducting the analysis is identified.
X	4.	All samples submitted to the laboratory are accounted for.
√	5.	Requested analytical methods were performed.
√	6.	Analysis dates are provided.
√	7.	Analyte results are provided.
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:

4. MFL-AM01-042224-AB and MFL-AM01-042324-AB were listed on the CoC, crossed out, voided (due to post-cal value exceeding the criteria), and not shipped to the laboratory. No results were present in the laboratory report for either sample because they were not shipped.

Notes: None.

[redacted]

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

May 08, 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 04/29/24 14:32.

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: 05/08/24 13:25
SUBMITTED: 04/29/24
AQS SITE CODE:
SITE CODE: Lahaina fires

ANALYTICAL REPORT FOR SAMPLES

SampleName	LabNumber	Matrix	Sampled	Received
MFL-AM01-041824-HM	4042941-01	Air	04/18/24 23:59	04/29/24 14:32
MFL-AM02-041824-HM	4042941-02	Air	04/18/24 23:59	04/29/24 14:32
MFL-AM03-041824-HM	4042941-03	Air	04/18/24 23:59	04/29/24 14:32
MFL-AM04-041824-HM	4042941-04	Air	04/18/24 23:59	04/29/24 14:32
MFL-AM01-041924-HM	4042941-05	Air	04/19/24 23:59	04/29/24 14:32
MFL-AM02-041924-HM	4042941-06	Air	04/19/24 23:59	04/29/24 14:32
MFL-AM03-041924-HM	4042941-07	Air	04/19/24 23:59	04/29/24 14:32
MFL-AM04-041924-HM	4042941-08	Air	04/19/24 23:59	04/29/24 14:32
MFL-FB01-041924-HM	4042941-09	Air	04/19/24 00:00	04/29/24 14:32
MFL-AM01-042024-HM	4042941-10	Air	04/20/24 23:59	04/29/24 14:32
MFL-AM02-042024-HM	4042941-11	Air	04/20/24 23:59	04/29/24 14:32
MFL-AM03-042024-HM	4042941-12	Air	04/20/24 23:59	04/29/24 14:32
MFL-AM04-042024-HM	4042941-13	Air	04/20/24 23:59	04/29/24 14:32
MFL-AM01-042124-HM	4042941-14	Air	04/21/24 23:59	04/29/24 14:32
MFL-AM02-042124-HM	4042941-15	Air	04/21/24 23:59	04/29/24 14:32
MFL-AM03-042124-HM	4042941-16	Air	04/21/24 23:59	04/29/24 14:32
MFL-AM04-042124-HM	4042941-17	Air	04/21/24 23:59	04/29/24 14:32
MFL-FB01-042124-HM	4042941-18	Air	04/21/24 00:00	04/29/24 14:32
MFL-AM01-042224-HM/MS/I	4042941-19	Air	04/22/24 23:59	04/29/24 14:32
MFL-AM02-042224-HM	4042941-20	Air	04/22/24 23:59	04/29/24 14:32
MFL-AM03-042224-HM	4042941-21	Air	04/22/24 23:59	04/29/24 14:32

[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: 05/08/24 13:25
SUBMITTED: 04/29/24
AQS SITE CODE:
SITE CODE: Lahaina fires

MFL-AM04-042224-HM	4042941-22	Air	04/22/24 23:59	04/29/24 14:32
MFL-AM01-042324-HM	4042941-23	Air	04/23/24 23:59	04/29/24 14:32
MFL-AM02-042324-HM	4042941-24	Air	04/23/24 23:59	04/29/24 14:32
MFL-AM03-042324-HM	4042941-25	Air	04/23/24 23:59	04/29/24 14:32
MFL-AM04-042324-HM	4042941-26	Air	04/23/24 23:59	04/29/24 14:32
MFL-FB01-042324-HM	4042941-27	Air	04/23/24 00:00	04/29/24 14:32
MFL-AM01-042424-HM	4042941-28	Air	04/24/24 23:59	04/29/24 14:32
MFL-AM02-042424-HM	4042941-29	Air	04/24/24 23:59	04/29/24 14:32
MFL-AM03-042424-HM	4042941-30	Air	04/24/24 23:59	04/29/24 14:32
MFL-AM04-042424-HM	4042941-31	Air	04/24/24 23:59	04/29/24 14:32
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

[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: 05/08/24 13:25
SUBMITTED: 04/29/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-041824-HM
Matrix: Air
Lab ID: 4042941-01
Sample Volume: 2054.28 m³
Filter ID:
Sampled: 04/18/24 23:59
Received: 04/29/24 14:32
Analysis Date: 04/30/24 22:32

Comments: Q8521163 - 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**	**0.0600**	SL	**0.0306**
Arsenic	**7440-38-2**	**0.211**		**0.00742**
Barium	**7440-39-3**	**2.28**	QB-01	**0.847**
Beryllium	**7440-41-7**	**0.00450**		**0.00253**
Cadmium	7440-43-9	0.00597	U	0.0587
Chromium	7440-47-3	1.49	U	1.75
Cobalt	**7440-48-4**	**0.184**		**0.0345**
Copper	**7440-50-8**	**72.5**		**2.08**
Lead	**7439-92-1**	**0.323**		**0.169**
Manganese	**7439-96-5**	**5.56**		**1.50**
Molybdenum	**7439-98-7**	**3.94**		**0.284**
Nickel	**7440-02-0**	**0.899**		**0.516**
Selenium	**7782-49-2**	**0.118**		**0.00710**
Thallium	**7440-28-0**	**7.82E-4**		**4.66E-4**
Vanadium	**7440-62-2**	**0.485**		**0.0419**
Zinc	7440-66-6	40.4	U	60.8

[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: 05/08/24 13:25
SUBMITTED: 04/29/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-041824-HM
Matrix: Air
Lab ID: 4042941-02
Sample Volume: 2055.379 m³
Filter ID:
Sampled: 04/18/24 23:59
Received: 04/29/24 14:32
Analysis Date: 04/30/24 20:48

Comments: Q8521161 - 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**	**0.185**	SL	**0.0306**
Arsenic	**7440-38-2**	**0.284**		**0.00742**
Barium	**7440-39-3**	**5.45**	QB-01	**0.847**
Beryllium	**7440-41-7**	**0.0126**		**0.00253**
Cadmium	7440-43-9	0.0128	U	0.0587
Chromium	**7440-47-3**	**2.16**		**1.75**
Cobalt	**7440-48-4**	**0.377**		**0.0345**
Copper	**7440-50-8**	**35.3**	QM-07	**2.08**
Lead	**7439-92-1**	**1.07**		**0.169**
Manganese	**7439-96-5**	**12.1**		**1.50**
Molybdenum	**7439-98-7**	**1.47**		**0.284**
Nickel	**7440-02-0**	**1.45**		**0.516**
Selenium	**7782-49-2**	**0.166**		**0.00709**
Thallium	**7440-28-0**	**9.82E-4**		**4.66E-4**
Vanadium	**7440-62-2**	**1.16**		**0.0419**
Zinc	7440-66-6	43.4	U	60.8

[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: 05/08/24 13:25
SUBMITTED: 04/29/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-041824-HM
Matrix: Air
Lab ID: 4042941-03
Sample Volume: 1939.986 m³
Filter ID:
Sampled: 04/18/24 23:59
Received: 04/29/24 14:32
Analysis Date: 04/30/24 22:43

Comments: Q8521159 - 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**	**0.0886**	SL	**0.0324**
Arsenic	**7440-38-2**	**0.171**		**0.00786**
Barium	**7440-39-3**	**4.30**	QB-01	**0.897**
Beryllium	**7440-41-7**	**0.0141**		**0.00268**
Cadmium	7440-43-9	0.00670	U	0.0621
Chromium	**7440-47-3**	**2.02**		**1.85**
Cobalt	**7440-48-4**	**0.288**		**0.0366**
Copper	**7440-50-8**	**49.0**		**2.21**
Lead	**7439-92-1**	**1.01**		**0.179**
Manganese	**7439-96-5**	**7.27**		**1.59**
Molybdenum	**7439-98-7**	**2.41**		**0.301**
Nickel	**7440-02-0**	**1.18**		**0.547**
Selenium	**7782-49-2**	**0.146**		**0.00751**
Thallium	**7440-28-0**	**0.00110**		**4.94E-4**
Vanadium	**7440-62-2**	**0.741**		**0.0444**
Zinc	7440-66-6	34.6	U	64.4

[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: 05/08/24 13:25
SUBMITTED: 04/29/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-041824-HM
Matrix: Air
Lab ID: 4042941-04
Sample Volume: 1982.558 m³
Filter ID:
Sampled: 04/18/24 23:59
Received: 04/29/24 14:32
Analysis Date: 04/30/24 22:53

Comments: Q8521154 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.101**	SL	**0.0317**
Arsenic	**7440-38-2**	**0.374**		**0.00769**
Barium	**7440-39-3**	**3.88**	QB-01	**0.878**
Beryllium	**7440-41-7**	**0.0131**		**0.00263**
Cadmium	7440-43-9	0.0122	U	0.0608
Chromium	**7440-47-3**	**2.53**		**1.81**
Cobalt	**7440-48-4**	**0.419**		**0.0358**
Copper	**7440-50-8**	**32.6**		**2.16**
Lead	**7439-92-1**	**0.840**		**0.176**
Manganese	**7439-96-5**	**13.3**		**1.55**
Molybdenum	**7439-98-7**	**1.34**		**0.295**
Nickel	**7440-02-0**	**1.40**		**0.535**
Selenium	**7782-49-2**	**0.166**		**0.00735**
Thallium	**7440-28-0**	**9.13E-4**		**4.83E-4**
Vanadium	**7440-62-2**	**1.04**		**0.0434**
Zinc	7440-66-6	36.7	U	63.0

[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: 05/08/24 13:25
SUBMITTED: 04/29/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-041924-HM
Matrix: Air
Lab ID: 4042941-05
Sample Volume: 2024.351 m³
Filter ID:
Sampled: 04/19/24 23:59
Received: 04/29/24 14:32
Analysis Date: 04/30/24 23:03

Comments: Q8521153 - 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**	**0.0604**	SL	**0.0310**
Arsenic	**7440-38-2**	**0.356**		**0.00753**
Barium	**7440-39-3**	**2.56**	QB-01	**0.860**
Beryllium	**7440-41-7**	**0.00527**		**0.00257**
Cadmium	7440-43-9	0.00803	U	0.0596
Chromium	**7440-47-3**	**1.86**		**1.78**
Cobalt	**7440-48-4**	**0.245**		**0.0350**
Copper	**7440-50-8**	**97.1**		**2.11**
Lead	**7439-92-1**	**0.411**		**0.172**
Manganese	**7439-96-5**	**6.45**		**1.52**
Molybdenum	**7439-98-7**	**4.04**		**0.289**
Nickel	**7440-02-0**	**1.14**		**0.524**
Selenium	**7782-49-2**	**0.110**		**0.00720**
Thallium	**7440-28-0**	**7.48E-4**		**4.73E-4**
Vanadium	**7440-62-2**	**0.647**		**0.0425**
Zinc	7440-66-6	36.2	U	61.7

[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: 05/08/24 13:25
SUBMITTED: 04/29/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-041924-HM
Matrix: Air
Lab ID: 4042941-06
Sample Volume: 2079.326 m³
Filter ID:
Sampled: 04/19/24 23:59
Received: 04/29/24 14:32
Analysis Date: 04/30/24 23:14

Comments: Q8521152 - 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**	**0.150**	SL	**0.0302**
Arsenic	**7440-38-2**	**0.178**		**0.00733**
Barium	**7440-39-3**	**3.85**	QB-01	**0.837**
Beryllium	**7440-41-7**	**0.00692**		**0.00250**
Cadmium	7440-43-9	0.00715	U	0.0580
Chromium	**7440-47-3**	**1.90**		**1.73**
Cobalt	**7440-48-4**	**0.226**		**0.0341**
Copper	**7440-50-8**	**41.0**		**2.06**
Lead	**7439-92-1**	**0.552**		**0.167**
Manganese	**7439-96-5**	**6.99**		**1.48**
Molybdenum	**7439-98-7**	**1.80**		**0.281**
Nickel	**7440-02-0**	**1.04**		**0.510**
Selenium	**7782-49-2**	**0.142**		**0.00701**
Thallium	**7440-28-0**	**7.47E-4**		**4.61E-4**
Vanadium	**7440-62-2**	**0.747**		**0.0414**
Zinc	7440-66-6	52.7	U	60.1

[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: 05/08/24 13:25
SUBMITTED: 04/29/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-041924-HM
Matrix: Air
Lab ID: 4042941-07
Sample Volume: 1970.416 m³
Filter ID:
Sampled: 04/19/24 23:59
Received: 04/29/24 14:32
Analysis Date: 04/30/24 23:24

Comments: Q8521151 - 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**	**0.0980**	SL	**0.0319**
Arsenic	**7440-38-2**	**0.157**		**0.00774**
Barium	**7440-39-3**	**2.81**	QB-01	**0.884**
Beryllium	**7440-41-7**	**0.0160**		**0.00264**
Cadmium	7440-43-9	0.0121	U	0.0612
Chromium	**7440-47-3**	**2.02**		**1.82**
Cobalt	**7440-48-4**	**0.307**		**0.0360**
Copper	**7440-50-8**	**42.7**		**2.17**
Lead	**7439-92-1**	**16.2**		**0.177**
Manganese	**7439-96-5**	**8.23**		**1.56**
Molybdenum	**7439-98-7**	**2.02**		**0.296**
Nickel	**7440-02-0**	**1.11**		**0.538**
Selenium	**7782-49-2**	**0.145**		**0.00740**
Thallium	**7440-28-0**	**8.80E-4**		**4.86E-4**
Vanadium	**7440-62-2**	**0.823**		**0.0437**
Zinc	7440-66-6	32.3	U	63.4

[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: 05/08/24 13:25
SUBMITTED: 04/29/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-041924-HM
Matrix: Air
Lab ID: 4042941-08
Sample Volume: 1947.949 m³
Filter ID:
Sampled: 04/19/24 23:59
Received: 04/29/24 14:32
Analysis Date: 04/30/24 23:34

Comments: Q8521149 - 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**	**0.0919**	SL	**0.0322**
Arsenic	**7440-38-2**	**0.192**		**0.00783**
Barium	**7440-39-3**	**3.29**	QB-01	**0.894**
Beryllium	**7440-41-7**	**0.00786**		**0.00267**
Cadmium	7440-43-9	0.0123	U	0.0619
Chromium	**7440-47-3**	**2.50**		**1.85**
Cobalt	**7440-48-4**	**0.263**		**0.0364**
Copper	**7440-50-8**	**39.5**		**2.20**
Lead	**7439-92-1**	**0.520**		**0.179**
Manganese	**7439-96-5**	**8.14**		**1.58**
Molybdenum	**7439-98-7**	**1.59**		**0.300**
Nickel	**7440-02-0**	**1.56**		**0.545**
Selenium	**7782-49-2**	**0.157**		**0.00748**
Thallium	**7440-28-0**	**6.80E-4**		**4.92E-4**
Vanadium	**7440-62-2**	**0.750**		**0.0442**
Zinc	7440-66-6	35.7	U	64.1

[redacted]

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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: 05/08/24 13:25
SUBMITTED: 04/29/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-FB01-041924-HM
Matrix: Air
Lab ID: 4042941-09
Sample Volume: 2024.351 m³
Filter ID:
Sampled: 04/19/24 00:00
Received: 04/29/24 14:32
Analysis Date: 04/30/24 23:45

Comments: Q8521147 - 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	0.0213	SL, U	0.0310
Arsenic	7440-38-2	0.00317	U	0.00753
Barium	**7440-39-3**	**1.10**	FB-01, QB-01	**0.860**
Beryllium	7440-41-7	6.44E-4	U	0.00257
Cadmium	7440-43-9	7.66E-4	U	0.0596
Chromium	7440-47-3	0.906	U	1.78
Cobalt	7440-48-4	0.0111	U	0.0350
Copper	7440-50-8	1.10	U	2.11
Lead	7439-92-1	0.0249	U	0.172
Manganese	7439-96-5	0.192	U	1.52
Molybdenum	7439-98-7	0.168	U	0.289
Nickel	7440-02-0	0.400	U	0.524
Selenium	7782-49-2	0.00466	U	0.00720
Thallium	7440-28-0	1.51E-4	U	4.73E-4
Vanadium	7440-62-2	0.0109	U	0.0425
Zinc	7440-66-6	30.9	U	61.7

[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: 05/08/24 13:25
SUBMITTED: 04/29/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-042024-HM
Matrix: Air
Lab ID: 4042941-10
Sample Volume: 1940.693 m³
Filter ID:
Sampled: 04/20/24 23:59
Received: 04/29/24 14:32
Analysis Date: 04/30/24 23:55

Comments: Q8521146 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0650**	SL	**0.0324**
Arsenic	**7440-38-2**	**0.359**		**0.00786**
Barium	**7440-39-3**	**3.33**	QB-01	**0.897**
Beryllium	**7440-41-7**	**0.00798**		**0.00268**
Cadmium	7440-43-9	0.0274	U	0.0621
Chromium	**7440-47-3**	**2.36**		**1.85**
Cobalt	**7440-48-4**	**0.313**		**0.0366**
Copper	**7440-50-8**	**101**		**2.20**
Lead	**7439-92-1**	**0.665**		**0.179**
Manganese	**7439-96-5**	**9.17**		**1.58**
Molybdenum	**7439-98-7**	**3.68**		**0.301**
Nickel	**7440-02-0**	**1.43**		**0.547**
Selenium	**7782-49-2**	**0.134**		**0.00751**
Thallium	**7440-28-0**	**0.00123**		**4.94E-4**
Vanadium	**7440-62-2**	**0.871**		**0.0443**
Zinc	7440-66-6	31.7	U	64.4

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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: 05/08/24 13:25
SUBMITTED: 04/29/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-042024-HM
Matrix: Air
Lab ID: 4042941-11
Sample Volume: 2022.599 m³
Filter ID:
Sampled: 04/20/24 23:59
Received: 04/29/24 14:32
Analysis Date: 05/01/24 00:06

Comments: Q8521145 - 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**	**0.104**	SL	**0.0311**
Arsenic	**7440-38-2**	**0.315**		**0.00754**
Barium	**7440-39-3**	**5.94**	QB-01	**0.861**
Beryllium	**7440-41-7**	**0.00802**		**0.00257**
Cadmium	7440-43-9	0.0138	U	0.0596
Chromium	**7440-47-3**	**1.99**		**1.78**
Cobalt	**7440-48-4**	**0.288**		**0.0351**
Copper	**7440-50-8**	**53.2**		**2.12**
Lead	**7439-92-1**	**0.845**		**0.172**
Manganese	**7439-96-5**	**8.22**		**1.52**
Molybdenum	**7439-98-7**	**1.87**		**0.289**
Nickel	**7440-02-0**	**1.27**		**0.524**
Selenium	**7782-49-2**	**0.147**		**0.00721**
Thallium	**7440-28-0**	**0.00133**		**4.74E-4**
Vanadium	**7440-62-2**	**0.887**		**0.0426**
Zinc	7440-66-6	37.0	U	61.8

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

FILE #: 4205.00.003.001
REPORTED: 05/08/24 13:25
SUBMITTED: 04/29/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-042024-HM
Matrix: Air
Lab ID: 4042941-12
Sample Volume: 1930.253 m³
Filter ID:
Sampled: 04/20/24 23:59
Received: 04/29/24 14:32
Analysis Date: 05/01/24 00:47

Comments: Q8521142 - 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**	**0.0645**	SL	**0.0325**
Arsenic	**7440-38-2**	**0.127**		**0.00790**
Barium	**7440-39-3**	**2.30**	QB-01	**0.902**
Beryllium	**7440-41-7**	**0.00891**		**0.00270**
Cadmium	7440-43-9	0.00743	U	0.0625
Chromium	7440-47-3	1.72	U	1.86
Cobalt	**7440-48-4**	**0.193**		**0.0368**
Copper	**7440-50-8**	**52.0**		**2.22**
Lead	**7439-92-1**	**0.448**		**0.180**
Manganese	**7439-96-5**	**5.07**		**1.59**
Molybdenum	**7439-98-7**	**2.46**		**0.303**
Nickel	**7440-02-0**	**0.996**		**0.550**
Selenium	**7782-49-2**	**0.148**		**0.00755**
Thallium	**7440-28-0**	**0.00117**		**4.96E-4**
Vanadium	**7440-62-2**	**0.557**		**0.0446**
Zinc	7440-66-6	38.0	U	64.7

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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: 05/08/24 13:25
SUBMITTED: 04/29/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-042024-HM
Matrix: Air
Lab ID: 4042941-13
Sample Volume: 1971.021 m³
Filter ID:
Sampled: 04/20/24 23:59
Received: 04/29/24 14:32
Analysis Date: 05/01/24 01:08

Comments: Q8521141 - 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**	**0.102**	SL	**0.0319**
Arsenic	**7440-38-2**	**0.270**		**0.00773**
Barium	**7440-39-3**	**3.59**	QB-01	**0.883**
Beryllium	**7440-41-7**	**0.0109**		**0.00264**
Cadmium	7440-43-9	0.0102	U	0.0612
Chromium	**7440-47-3**	**2.04**		**1.82**
Cobalt	**7440-48-4**	**0.334**		**0.0360**
Copper	**7440-50-8**	**30.1**		**2.17**
Lead	**7439-92-1**	**0.899**		**0.177**
Manganese	**7439-96-5**	**10.3**		**1.56**
Molybdenum	**7439-98-7**	**1.11**		**0.296**
Nickel	**7440-02-0**	**1.21**		**0.538**
Selenium	**7782-49-2**	**0.178**		**0.00740**
Thallium	**7440-28-0**	**0.00116**		**4.86E-4**
Vanadium	**7440-62-2**	**0.924**		**0.0437**
Zinc	7440-66-6	47.8	U	63.4

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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: 05/08/24 13:25
SUBMITTED: 04/29/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-042124-HM
Matrix: Air
Lab ID: 4042941-14
Sample Volume: 1923.684 m³
Filter ID:
Sampled: 04/21/24 23:59
Received: 04/29/24 14:32
Analysis Date: 05/01/24 01:18

Comments: Q8521140 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.105**	SL	**0.0326**
Arsenic	**7440-38-2**	**0.478**		**0.00792**
Barium	**7440-39-3**	**3.18**	QB-01	**0.905**
Beryllium	**7440-41-7**	**0.00666**		**0.00271**
Cadmium	7440-43-9	0.0375	U	0.0627
Chromium	**7440-47-3**	**1.97**		**1.87**
Cobalt	**7440-48-4**	**0.233**		**0.0369**
Copper	**7440-50-8**	**112**		**2.22**
Lead	**7439-92-1**	**0.779**		**0.181**
Manganese	**7439-96-5**	**6.86**		**1.60**
Molybdenum	**7439-98-7**	**4.00**		**0.304**
Nickel	**7440-02-0**	**0.930**		**0.551**
Selenium	**7782-49-2**	**0.156**		**0.00758**
Thallium	**7440-28-0**	**0.00202**		**4.98E-4**
Vanadium	**7440-62-2**	**0.699**		**0.0447**
Zinc	**7440-66-6**	**86.1**		**65.0**

[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: 05/08/24 13:25
SUBMITTED: 04/29/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-042124-HM
Matrix: Air
Lab ID: 4042941-15
Sample Volume: 2032.011 m³
Filter ID:
Sampled: 04/21/24 23:59
Received: 04/29/24 14:32
Analysis Date: 05/01/24 01:29

Comments: Q8521139 - 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**	**0.165**	SL	**0.0309**
Arsenic	**7440-38-2**	**0.257**		**0.00750**
Barium	**7440-39-3**	**49.1**	QB-01	**0.857**
Beryllium	**7440-41-7**	**0.00576**		**0.00256**
Cadmium	7440-43-9	0.0186	U	0.0593
Chromium	7440-47-3	1.64	U	1.77
Cobalt	**7440-48-4**	**0.143**		**0.0349**
Copper	**7440-50-8**	**153**		**2.11**
Lead	**7439-92-1**	**0.853**		**0.171**
Manganese	**7439-96-5**	**4.77**		**1.51**
Molybdenum	**7439-98-7**	**2.01**		**0.287**
Nickel	**7440-02-0**	**0.967**		**0.522**
Selenium	**7782-49-2**	**0.169**		**0.00717**
Thallium	**7440-28-0**	**0.00171**		**4.72E-4**
Vanadium	**7440-62-2**	**0.497**		**0.0424**
Zinc	7440-66-6	44.4	U	61.5

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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: 05/08/24 13:25
SUBMITTED: 04/29/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-042124-HM
Matrix: Air
Lab ID: 4042941-16
Sample Volume: 1802.793 m³
Filter ID:
Sampled: 04/21/24 23:59
Received: 04/29/24 14:32
Analysis Date: 05/01/24 01:39

Comments: Q8521136 - 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**	**0.104**	SL	**0.0348**
Arsenic	**7440-38-2**	**0.143**		**0.00846**
Barium	**7440-39-3**	**2.34**	QB-01	**0.966**
Beryllium	**7440-41-7**	**0.00640**		**0.00289**
Cadmium	7440-43-9	0.0145	U	0.0669
Chromium	7440-47-3	1.65	U	1.99
Cobalt	**7440-48-4**	**0.172**		**0.0393**
Copper	**7440-50-8**	**58.0**		**2.37**
Lead	**7439-92-1**	**0.848**		**0.193**
Manganese	**7439-96-5**	**4.61**		**1.71**
Molybdenum	**7439-98-7**	**2.19**		**0.324**
Nickel	**7440-02-0**	**0.884**		**0.588**
Selenium	**7782-49-2**	**0.156**		**0.00809**
Thallium	**7440-28-0**	**0.00180**		**5.32E-4**
Vanadium	**7440-62-2**	**0.456**		**0.0477**
Zinc	7440-66-6	34.3	U	69.3

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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: 05/08/24 13:25
SUBMITTED: 04/29/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-042124-HM
Matrix: Air
Lab ID: 4042941-17
Sample Volume: 1892.813 m³
Filter ID:
Sampled: 04/21/24 23:59
Received: 04/29/24 14:32
Analysis Date: 05/01/24 01:50

Comments: Q8521135 - 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**	**0.150**	SL	**0.0332**
Arsenic	**7440-38-2**	**0.245**		**0.00805**
Barium	**7440-39-3**	**3.64**	QB-01	**0.920**
Beryllium	**7440-41-7**	**0.00838**		**0.00275**
Cadmium	7440-43-9	0.0139	U	0.0637
Chromium	7440-47-3	1.81	U	1.90
Cobalt	**7440-48-4**	**0.295**		**0.0375**
Copper	**7440-50-8**	**40.3**		**2.26**
Lead	**7439-92-1**	**1.07**		**0.184**
Manganese	**7439-96-5**	**8.50**		**1.62**
Molybdenum	**7439-98-7**	**1.40**		**0.309**
Nickel	**7440-02-0**	**1.06**		**0.560**
Selenium	**7782-49-2**	**0.176**		**0.00770**
Thallium	**7440-28-0**	**0.00164**		**5.06E-4**
Vanadium	**7440-62-2**	**0.688**		**0.0455**
Zinc	7440-66-6	41.7	U	66.0

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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: 05/08/24 13:25
SUBMITTED: 04/29/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-FB01-042124-HM
Matrix: Air
Lab ID: 4042941-18
Sample Volume: 1923.684 m³
Filter ID:
Sampled: 04/21/24 00:00
Received: 04/29/24 14:32
Analysis Date: 05/01/24 02:00

Comments: Q8506910 - 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	0.0182	SL, U	0.0326
Arsenic	7440-38-2	0.00236	U	0.00792
Barium	**7440-39-3**	**0.920**	FB-01, QB-01	**0.905**
Beryllium	7440-41-7	5.45E-4	U	0.00271
Cadmium	7440-43-9	6.04E-4	U	0.0627
Chromium	7440-47-3	1.13	U	1.87
Cobalt	7440-48-4	0.00995	U	0.0369
Copper	7440-50-8	0.532	U	2.22
Lead	7439-92-1	0.0292	U	0.181
Manganese	7439-96-5	0.155	U	1.60
Molybdenum	7439-98-7	0.154	U	0.304
Nickel	7440-02-0	0.474	U	0.551
Selenium	7782-49-2	0.00323	U	0.00758
Thallium	7440-28-0	1.52E-4	U	4.98E-4
Vanadium	7440-62-2	0.00900	U	0.0447
Zinc	7440-66-6	24.4	U	65.0

[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: 05/08/24 13:25
SUBMITTED: 04/29/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-042224-HM/MS/MS
Matrix: Air
Lab ID: 4042941-19
Sample Volume: 1997.123 m³
Filter ID:
Sampled: 04/22/24 23:59
Received: 04/29/24 14:32
Analysis Date: 04/30/24 18:44

Comments: Q8521134 - 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**	**0.0636**	SL	**0.0314**
Arsenic	**7440-38-2**	**0.662**		**0.00763**
Barium	**7440-39-3**	**3.84**	QB-01	**0.872**
Beryllium	**7440-41-7**	**0.0140**		**0.00261**
Cadmium	7440-43-9	0.0122	U	0.0604
Chromium	**7440-47-3**	**2.65**	PS-01	**1.80**
Cobalt	**7440-48-4**	**0.563**		**0.0355**
Copper	**7440-50-8**	**70.3**	A-01, QM-07	**2.14**
Lead	**7439-92-1**	**0.451**		**0.174**
Manganese	**7439-96-5**	**14.6**	A-01	**1.54**
Molybdenum	**7439-98-7**	**2.30**		**0.292**
Nickel	**7440-02-0**	**2.00**		**0.531**
Selenium	**7782-49-2**	**0.167**		**0.00730**
Thallium	**7440-28-0**	**0.00258**		**4.80E-4**
Vanadium	**7440-62-2**	**1.43**		**0.0431**
Zinc	7440-66-6	29.1	U	62.6

[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: 05/08/24 13:25
SUBMITTED: 04/29/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-042224-HM
Matrix: Air
Lab ID: 4042941-20
Sample Volume: 2045.7 m³
Filter ID:
Sampled: 04/22/24 23:59
Received: 04/29/24 14:32
Analysis Date: 05/01/24 02:10

Comments: Q8506907 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0965**	SL	**0.0307**
Arsenic	**7440-38-2**	**0.293**		**0.00745**
Barium	**7440-39-3**	**5.23**	QB-01	**0.851**
Beryllium	**7440-41-7**	**0.0127**		**0.00255**
Cadmium	7440-43-9	0.0453	U	0.0589
Chromium	**7440-47-3**	**2.87**		**1.76**
Cobalt	**7440-48-4**	**0.496**		**0.0347**
Copper	**7440-50-8**	**51.7**		**2.09**
Lead	**7439-92-1**	**0.725**		**0.170**
Manganese	**7439-96-5**	**13.0**		**1.50**
Molybdenum	**7439-98-7**	**1.52**		**0.286**
Nickel	**7440-02-0**	**1.84**		**0.519**
Selenium	**7782-49-2**	**0.162**		**0.00713**
Thallium	**7440-28-0**	**0.00236**		**4.68E-4**
Vanadium	**7440-62-2**	**1.45**		**0.0421**
Zinc	7440-66-6	46.2	U	61.1

[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: 05/08/24 13:25
SUBMITTED: 04/29/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-042224-HM
Matrix: Air
Lab ID: 4042941-21
Sample Volume: 1813.398 m³
Filter ID:
Sampled: 04/22/24 23:59
Received: 04/29/24 14:32
Analysis Date: 05/01/24 02:21

Comments: Q8506904 - 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**	**0.0535**	SL	**0.0346**
Arsenic	**7440-38-2**	**0.154**		**0.00841**
Barium	**7440-39-3**	**2.71**	QB-01	**0.960**
Beryllium	**7440-41-7**	**0.0120**		**0.00287**
Cadmium	7440-43-9	0.00939	U	0.0665
Chromium	**7440-47-3**	**2.17**		**1.98**
Cobalt	**7440-48-4**	**0.267**		**0.0391**
Copper	**7440-50-8**	**64.3**		**2.36**
Lead	**7439-92-1**	**0.355**		**0.192**
Manganese	**7439-96-5**	**6.99**		**1.70**
Molybdenum	**7439-98-7**	**2.14**		**0.322**
Nickel	**7440-02-0**	**1.12**		**0.585**
Selenium	**7782-49-2**	**0.150**		**0.00804**
Thallium	**7440-28-0**	**0.00218**		**5.28E-4**
Vanadium	**7440-62-2**	**0.694**		**0.0475**
Zinc	7440-66-6	53.3	U	68.9

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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: 05/08/24 13:25
SUBMITTED: 04/29/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-042224-HM
Matrix: Air
Lab ID: 4042941-22
Sample Volume: 1879.699 m³
Filter ID:
Sampled: 04/22/24 23:59
Received: 04/29/24 14:32
Analysis Date: 05/01/24 02:52

Comments: Q8521133 - 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**	**0.148**	SL	**0.0334**
Arsenic	**7440-38-2**	**0.452**		**0.00811**
Barium	**7440-39-3**	**4.21**	QB-01	**0.926**
Beryllium	**7440-41-7**	**0.0119**		**0.00277**
Cadmium	7440-43-9	0.0132	U	0.0641
Chromium	**7440-47-3**	**2.24**		**1.91**
Cobalt	**7440-48-4**	**0.375**		**0.0377**
Copper	**7440-50-8**	**36.4**		**2.28**
Lead	**7439-92-1**	**0.882**		**0.185**
Manganese	**7439-96-5**	**12.2**		**1.64**
Molybdenum	**7439-98-7**	**1.29**		**0.311**
Nickel	**7440-02-0**	**1.26**		**0.564**
Selenium	**7782-49-2**	**0.193**		**0.00776**
Thallium	**7440-28-0**	**0.00223**		**5.10E-4**
Vanadium	**7440-62-2**	**0.978**		**0.0458**
Zinc	7440-66-6	37.7	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: 05/08/24 13:25
SUBMITTED: 04/29/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-042324-HM
Matrix: Air
Lab ID: 4042941-23
Sample Volume: 1944.306 m³
Filter ID:
Sampled: 04/23/24 23:59
Received: 04/29/24 14:32
Analysis Date: 05/01/24 03:02

Comments: Q8521132 - 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**	**0.0738**	SL	**0.0323**
Arsenic	**7440-38-2**	**0.594**		**0.00784**
Barium	**7440-39-3**	**4.50**	QB-01	**0.895**
Beryllium	**7440-41-7**	**0.0161**		**0.00268**
Cadmium	7440-43-9	0.0134	U	0.0620
Chromium	**7440-47-3**	**2.96**		**1.85**
Cobalt	**7440-48-4**	**0.607**		**0.0365**
Copper	**7440-50-8**	**88.5**		**2.20**
Lead	**7439-92-1**	**0.470**		**0.179**
Manganese	**7439-96-5**	**17.8**		**1.58**
Molybdenum	**7439-98-7**	**2.74**		**0.300**
Nickel	**7440-02-0**	**1.66**		**0.546**
Selenium	**7782-49-2**	**0.157**		**0.00750**
Thallium	**7440-28-0**	**0.00179**		**4.93E-4**
Vanadium	**7440-62-2**	**1.68**		**0.0443**
Zinc	7440-66-6	32.0	U	64.3

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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: 05/08/24 13:25
SUBMITTED: 04/29/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-042324-HM
Matrix: Air
Lab ID: 4042941-24
Sample Volume: 2071.089 m³
Filter ID:
Sampled: 04/23/24 23:59
Received: 04/29/24 14:32
Analysis Date: 05/01/24 03:13

Comments: Q8521131 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.112**	SL	**0.0303**
Arsenic	**7440-38-2**	**0.333**		**0.00736**
Barium	**7440-39-3**	**4.69**	QB-01	**0.841**
Beryllium	**7440-41-7**	**0.0107**		**0.00251**
Cadmium	7440-43-9	0.0132	U	0.0582
Chromium	**7440-47-3**	**2.19**		**1.74**
Cobalt	**7440-48-4**	**0.367**		**0.0343**
Copper	**7440-50-8**	**50.4**		**2.07**
Lead	**7439-92-1**	**0.910**		**0.168**
Manganese	**7439-96-5**	**10.8**		**1.48**
Molybdenum	**7439-98-7**	**1.46**		**0.282**
Nickel	**7440-02-0**	**1.36**		**0.512**
Selenium	**7782-49-2**	**0.132**		**0.00704**
Thallium	**7440-28-0**	**0.00135**		**4.63E-4**
Vanadium	**7440-62-2**	**1.08**		**0.0416**
Zinc	7440-66-6	33.2	U	60.3

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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: 05/08/24 13:25
SUBMITTED: 04/29/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-042324-HM
Matrix: Air
Lab ID: 4042941-25
Sample Volume: 1811.884 m³
Filter ID:
Sampled: 04/23/24 23:59
Received: 04/29/24 14:32
Analysis Date: 05/01/24 03:23

Comments: Q8521130 - 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**	**0.0826**	SL	**0.0347**
Arsenic	**7440-38-2**	**0.251**		**0.00841**
Barium	**7440-39-3**	**2.98**	QB-01	**0.961**
Beryllium	**7440-41-7**	**0.0143**		**0.00287**
Cadmium	7440-43-9	0.00797	U	0.0665
Chromium	**7440-47-3**	**2.27**		**1.98**
Cobalt	**7440-48-4**	**0.336**		**0.0392**
Copper	**7440-50-8**	**82.4**		**2.36**
Lead	**7439-92-1**	**0.527**		**0.192**
Manganese	**7439-96-5**	**8.50**		**1.70**
Molybdenum	**7439-98-7**	**2.33**		**0.322**
Nickel	**7440-02-0**	**1.22**		**0.585**
Selenium	**7782-49-2**	**0.131**		**0.00805**
Thallium	**7440-28-0**	**0.00120**		**5.29E-4**
Vanadium	**7440-62-2**	**0.804**		**0.0475**
Zinc	7440-66-6	29.0	U	69.0

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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: 05/08/24 13:25
SUBMITTED: 04/29/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-042324-HM
Matrix: Air
Lab ID: 4042941-26
Sample Volume: 1873.41 m³
Filter ID:
Sampled: 04/23/24 23:59
Received: 04/29/24 14:32
Analysis Date: 05/01/24 03:44

Comments: Q8521129 - 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**	**0.0900**	SL	**0.0335**
Arsenic	**7440-38-2**	**0.352**		**0.00814**
Barium	**7440-39-3**	**3.61**	QB-01	**0.929**
Beryllium	**7440-41-7**	**0.0104**		**0.00278**
Cadmium	7440-43-9	0.0150	U	0.0644
Chromium	**7440-47-3**	**2.09**		**1.92**
Cobalt	**7440-48-4**	**0.317**		**0.0379**
Copper	**7440-50-8**	**37.3**		**2.28**
Lead	**7439-92-1**	**0.748**		**0.186**
Manganese	**7439-96-5**	**10.0**		**1.64**
Molybdenum	**7439-98-7**	**1.45**		**0.312**
Nickel	**7440-02-0**	**1.08**		**0.566**
Selenium	**7782-49-2**	**0.135**		**0.00778**
Thallium	**7440-28-0**	**0.00120**		**5.12E-4**
Vanadium	**7440-62-2**	**0.843**		**0.0459**
Zinc	7440-66-6	34.5	U	66.7

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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: 05/08/24 13:25
SUBMITTED: 04/29/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-FB01-042324-HM
Matrix: Air
Lab ID: 4042941-27
Sample Volume: 1944.306 m³
Filter ID:
Sampled: 04/23/24 00:00
Received: 04/29/24 14:32
Analysis Date: 05/01/24 03:54

Comments: Q8506903 - 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	0.0170	SL, U	0.0323
Arsenic	7440-38-2	0.00243	U	0.00784
Barium	7440-39-3	0.849	QB-01, U	0.895
Beryllium	7440-41-7	6.35E-4	U	0.00268
Cadmium	7440-43-9	6.69E-4	U	0.0620
Chromium	7440-47-3	1.09	U	1.85
Cobalt	7440-48-4	0.0124	U	0.0365
Copper	7440-50-8	0.482	U	2.20
Lead	7439-92-1	0.0281	U	0.179
Manganese	7439-96-5	0.187	U	1.58
Molybdenum	7439-98-7	0.144	U	0.300
Nickel	7440-02-0	0.444	U	0.546
Selenium	7782-49-2	2.62E-4	U	0.00750
Thallium	7440-28-0	1.10E-4	U	4.93E-4
Vanadium	7440-62-2	0.0104	U	0.0443
Zinc	7440-66-6	17.5	U	64.3

[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: 05/08/24 13:25
SUBMITTED: 04/29/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-042424-HM
Matrix: Air
Lab ID: 4042941-28
Sample Volume: 1983.872 m³
Filter ID:
Sampled: 04/24/24 23:59
Received: 04/29/24 14:32
Analysis Date: 05/01/24 04:05

Comments: Q8521128 - 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**	**0.0615**	SL	**0.0317**
Arsenic	**7440-38-2**	**0.420**		**0.00768**
Barium	**7440-39-3**	**3.50**	QB-01	**0.878**
Beryllium	**7440-41-7**	**0.0116**		**0.00262**
Cadmium	7440-43-9	0.0117	U	0.0608
Chromium	**7440-47-3**	**3.02**		**1.81**
Cobalt	**7440-48-4**	**0.591**		**0.0358**
Copper	**7440-50-8**	**95.1**		**2.16**
Lead	**7439-92-1**	**0.353**		**0.176**
Manganese	**7439-96-5**	**14.6**		**1.55**
Molybdenum	**7439-98-7**	**3.11**		**0.294**
Nickel	**7440-02-0**	**2.21**		**0.535**
Selenium	**7782-49-2**	**0.167**		**0.00735**
Thallium	**7440-28-0**	**0.00231**		**4.83E-4**
Vanadium	**7440-62-2**	**1.47**		**0.0434**
Zinc	7440-66-6	22.2	U	63.0

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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: 05/08/24 13:25
SUBMITTED: 04/29/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-042424-HM
Matrix: Air
Lab ID: 4042941-29
Sample Volume: 2093.976 m³
Filter ID:
Sampled: 04/24/24 23:59
Received: 04/29/24 14:32
Analysis Date: 05/01/24 04:15

Comments: Q8521127 - 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	**0.0300**
Arsenic	**7440-38-2**	**0.273**		**0.00728**
Barium	**7440-39-3**	**3.55**	QB-01	**0.831**
Beryllium	**7440-41-7**	**0.00875**		**0.00249**
Cadmium	7440-43-9	0.0151	U	0.0576
Chromium	**7440-47-3**	**1.91**		**1.72**
Cobalt	**7440-48-4**	**0.319**		**0.0339**
Copper	**7440-50-8**	**49.9**		**2.04**
Lead	**7439-92-1**	**0.644**		**0.166**
Manganese	**7439-96-5**	**9.03**		**1.47**
Molybdenum	**7439-98-7**	**1.55**		**0.279**
Nickel	**7440-02-0**	**1.22**		**0.507**
Selenium	**7782-49-2**	**0.151**		**0.00696**
Thallium	**7440-28-0**	**0.00216**		**4.58E-4**
Vanadium	**7440-62-2**	**0.897**		**0.0411**
Zinc	7440-66-6	23.2	U	59.7

[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: 05/08/24 13:25
SUBMITTED: 04/29/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-042424-HM
Matrix: Air
Lab ID: 4042941-30
Sample Volume: 1925.153 m³
Filter ID:
Sampled: 04/24/24 23:59
Received: 04/29/24 14:32
Analysis Date: 05/01/24 04:25

Comments: Q8506911 - 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**	**0.0787**	SL	**0.0326**
Arsenic	**7440-38-2**	**0.239**		**0.00792**
Barium	**7440-39-3**	**3.25**	QB-01	**0.904**
Beryllium	**7440-41-7**	**0.0191**		**0.00270**
Cadmium	7440-43-9	0.0113	U	0.0626
Chromium	**7440-47-3**	**2.83**		**1.87**
Cobalt	**7440-48-4**	**0.433**		**0.0368**
Copper	**7440-50-8**	**65.7**		**2.22**
Lead	**7439-92-1**	**0.722**		**0.181**
Manganese	**7439-96-5**	**10.8**		**1.60**
Molybdenum	**7439-98-7**	**2.18**		**0.303**
Nickel	**7440-02-0**	**1.45**		**0.551**
Selenium	**7782-49-2**	**0.178**		**0.00757**
Thallium	**7440-28-0**	**0.00216**		**4.98E-4**
Vanadium	**7440-62-2**	**1.08**		**0.0447**
Zinc	7440-66-6	25.1	U	64.9

[redacted]

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

FILE #: 4205.00.003.001
REPORTED: 05/08/24 13:25
SUBMITTED: 04/29/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-042424-HM
Matrix: Air
Lab ID: 4042941-31
Sample Volume: 1547.784 m³
Filter ID:
Sampled: 04/24/24 23:59
Received: 04/29/24 14:32
Analysis Date: 05/01/24 05:07

Comments: Q8506902 - 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**	**0.133**	SL	**0.0406**
Arsenic	**7440-38-2**	**0.503**		**0.00985**
Barium	**7440-39-3**	**5.56**	QB-01	**1.12**
Beryllium	**7440-41-7**	**0.0170**		**0.00336**
Cadmium	7440-43-9	0.0183	U	0.0779
Chromium	**7440-47-3**	**3.20**		**2.32**
Cobalt	**7440-48-4**	**0.534**		**0.0458**
Copper	**7440-50-8**	**49.9**		**2.76**
Lead	**7439-92-1**	**1.33**		**0.225**
Manganese	**7439-96-5**	**17.0**		**1.99**
Molybdenum	**7439-98-7**	**1.60**		**0.377**
Nickel	**7440-02-0**	**1.66**		**0.685**
Selenium	**7782-49-2**	**0.210**		**0.00942**
Thallium	**7440-28-0**	**0.00261**		**6.19E-4**
Vanadium	**7440-62-2**	**1.41**		**0.0556**
Zinc	7440-66-6	36.8	U	80.7

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FILE #: 4205.00.003.001
REPORTED: 05/08/24 13:25
SUBMITTED: 04/29/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2404094 - B4D3006										
Calibration Blank (2404094-CCB1)				Prepared & Analyzed: 04/30/24						
Antimony	0.504		ng/l							
Arsenic	0.0930		ng/l							
Barium	0.576		ng/l							
Beryllium	0.302		ng/l							
Cadmium	0.181		ng/l							
Chromium	4.55		ng/l							
Cobalt	0.474		ng/l							
Copper	52.6		ng/l							
Lead	10.5		ng/l							
Manganese	2.08		ng/l							
Molybdenum	12.0		ng/l							
Nickel	0.396		ng/l							
Selenium	9.29		ng/l							
Thallium	1.25		ng/l							
Vanadium	-40.9		ng/l							U
Zinc	16.8		ng/l							
Calibration Blank (2404094-CCB2)				Prepared & Analyzed: 04/30/24						
Antimony	0.470		ng/l							
Arsenic	-0.329		ng/l							U
Barium	0.850		ng/l							
Beryllium	0.290		ng/l							
Cadmium	0.113		ng/l							
Chromium	1.90		ng/l							
Cobalt	0.337		ng/l							
Copper	18.0		ng/l							
Lead	5.70		ng/l							
Manganese	-1.30		ng/l							U
Molybdenum	4.65		ng/l							
Nickel	0.361		ng/l							
Selenium	8.25		ng/l							
Thallium	1.08		ng/l							
Vanadium	-38.1		ng/l							U
Zinc	32.5		ng/l							
Calibration Blank (2404094-CCB3)				Prepared & Analyzed: 04/30/24						
Antimony	0.303		ng/l							
Arsenic	-0.279		ng/l							U
Barium	0.747		ng/l							
Beryllium	0.285		ng/l							

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REPORTED: 05/08/24 13:25
SUBMITTED: 04/29/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2404094 - B4D3006										
Calibration Blank (2404094-CCB3) Contin				Prepared & Analyzed: 04/30/24						
Cadmium	0.0568		ng/l							
Chromium	2.47		ng/l							
Cobalt	0.262		ng/l							
Copper	13.8		ng/l							
Lead	2.55		ng/l							
Manganese	-1.66		ng/l							U
Molybdenum	2.36		ng/l							
Nickel	-0.00781		ng/l							U
Selenium	0.215		ng/l							
Thallium	0.566		ng/l							
Vanadium	-26.0		ng/l							U
Zinc	10.7		ng/l							
Calibration Blank (2404094-CCB4)				Prepared: 04/30/24 Analyzed: 05/01/24						
Antimony	0.460		ng/l							
Arsenic	0.556		ng/l							
Barium	0.842		ng/l							
Beryllium	0.289		ng/l							
Cadmium	0.121		ng/l							
Chromium	3.18		ng/l							
Cobalt	0.367		ng/l							
Copper	25.4		ng/l							
Lead	7.74		ng/l							
Manganese	-0.806		ng/l							U
Molybdenum	5.98		ng/l							
Nickel	0.726		ng/l							
Selenium	0.487		ng/l							
Thallium	1.26		ng/l							
Vanadium	-41.6		ng/l							U
Zinc	11.9		ng/l							
Calibration Blank (2404094-CCB5)				Prepared: 04/30/24 Analyzed: 05/01/24						
Antimony	0.437		ng/l							
Arsenic	1.77		ng/l							
Barium	0.431		ng/l							
Beryllium	-0.245		ng/l							U
Cadmium	0.0387		ng/l							
Chromium	2.89		ng/l							
Cobalt	0.299		ng/l							
Copper	19.0		ng/l							

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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 2404094 - B4D3006										
Calibration Blank (2404094-CCB5) Contin				Prepared: 04/30/24 Analyzed: 05/01/24						
Lead	5.23		ng/l							
Manganese	-2.03		ng/l							U
Molybdenum	5.44		ng/l							
Nickel	1.69		ng/l							
Selenium	5.82		ng/l							
Thallium	1.13		ng/l							
Vanadium	-41.2		ng/l							U
Zinc	16.9		ng/l							
Calibration Blank (2404094-CCB6)				Prepared: 04/30/24 Analyzed: 05/01/24						
Antimony	0.697		ng/l							
Arsenic	0.733		ng/l							
Barium	0.694		ng/l							
Beryllium	0.0530		ng/l							
Cadmium	0.143		ng/l							
Chromium	2.81		ng/l							
Cobalt	0.309		ng/l							
Copper	24.6		ng/l							
Lead	9.12		ng/l							
Manganese	-1.08		ng/l							U
Molybdenum	6.63		ng/l							
Nickel	1.00		ng/l							
Selenium	9.97		ng/l							
Thallium	1.22		ng/l							
Vanadium	-48.0		ng/l							U
Zinc	18.7		ng/l							
Calibration Blank (2404094-CCB7)				Prepared: 04/30/24 Analyzed: 05/01/24						
Antimony	0.715		ng/l							
Arsenic	1.13		ng/l							
Barium	0.292		ng/l							
Beryllium	0.0773		ng/l							
Cadmium	0.114		ng/l							
Chromium	3.49		ng/l							
Cobalt	0.300		ng/l							
Copper	20.1		ng/l							
Lead	6.44		ng/l							
Manganese	-0.713		ng/l							U
Molybdenum	5.74		ng/l							
Nickel	1.02		ng/l							

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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 2404094 - B4D3006										
Calibration Blank (2404094-CCB7) Contin				Prepared: 04/30/24 Analyzed: 05/01/24						
Selenium	3.47		ng/l							
Thallium	1.03		ng/l							
Vanadium	-47.0		ng/l							U
Zinc	25.8		ng/l							
Calibration Check (2404094-CCV1)				Prepared & Analyzed: 04/30/24						
Antimony	19900		ng/l	20000		99.6	90-110			
Arsenic	20000		ng/l	20000		99.8	90-110			
Barium	200000		ng/l	200000		99.9	90-110			
Beryllium	4920		ng/l	5000.0		98.5	90-110			
Cadmium	20300		ng/l	20000		101	90-110			
Chromium	250000		ng/l	240000		104	90-110			
Cobalt	51500		ng/l	50000		103	90-110			
Copper	2.06E6		ng/l	2.0000E6		103	90-110			
Lead	198000		ng/l	200000		99.1	90-110			
Manganese	513000		ng/l	500000		103	90-110			
Molybdenum	49300		ng/l	50000		98.6	90-110			
Nickel	124000		ng/l	120000		103	90-110			
Selenium	19900		ng/l	20000		99.6	90-110			
Thallium	506		ng/l	500.00		101	90-110			
Vanadium	20200		ng/l	20000		101	90-110			
Zinc	515000		ng/l	500000		103	90-110			
Calibration Check (2404094-CCV2)				Prepared & Analyzed: 04/30/24						
Antimony	19800		ng/l	20000		99.0	90-110			
Arsenic	20100		ng/l	20000		100	90-110			
Barium	199000		ng/l	200000		99.7	90-110			
Beryllium	4990		ng/l	5000.0		99.8	90-110			
Cadmium	20300		ng/l	20000		101	90-110			
Chromium	254000		ng/l	240000		106	90-110			
Cobalt	52500		ng/l	50000		105	90-110			
Copper	2.10E6		ng/l	2.0000E6		105	90-110			
Lead	198000		ng/l	200000		98.8	90-110			
Manganese	523000		ng/l	500000		105	90-110			
Molybdenum	50200		ng/l	50000		100	90-110			
Nickel	126000		ng/l	120000		105	90-110			
Selenium	19900		ng/l	20000		99.4	90-110			
Thallium	487		ng/l	500.00		97.5	90-110			
Vanadium	20700		ng/l	20000		104	90-110			
Zinc	518000		ng/l	500000		104	90-110			

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FILE #: 4205.00.003.001
REPORTED: 05/08/24 13:25
SUBMITTED: 04/29/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2404094 - B4D3006										
Calibration Check (2404094-CCV3)				Prepared & Analyzed: 04/30/24						
Antimony	19900		ng/l	20000		99.6	90-110			
Arsenic	19800		ng/l	20000		98.9	90-110			
Barium	200000		ng/l	200000		100	90-110			
Beryllium	4940		ng/l	5000.0		98.7	90-110			
Cadmium	20400		ng/l	20000		102	90-110			
Chromium	253000		ng/l	240000		105	90-110			
Cobalt	51800		ng/l	50000		104	90-110			
Copper	2.09E6		ng/l	2.0000E6		104	90-110			
Lead	199000		ng/l	200000		99.3	90-110			
Manganese	516000		ng/l	500000		103	90-110			
Molybdenum	50400		ng/l	50000		101	90-110			
Nickel	125000		ng/l	120000		104	90-110			
Selenium	19600		ng/l	20000		97.8	90-110			
Thallium	492		ng/l	500.00		98.5	90-110			
Vanadium	20500		ng/l	20000		103	90-110			
Zinc	516000		ng/l	500000		103	90-110			
Calibration Check (2404094-CCV4)				Prepared: 04/30/24 Analyzed: 05/01/24						
Antimony	20000		ng/l	20000		100	90-110			
Arsenic	19900		ng/l	20000		99.7	90-110			
Barium	198000		ng/l	200000		98.8	90-110			
Beryllium	4930		ng/l	5000.0		98.6	90-110			
Cadmium	20200		ng/l	20000		101	90-110			
Chromium	253000		ng/l	240000		105	90-110			
Cobalt	52200		ng/l	50000		104	90-110			
Copper	2.12E6		ng/l	2.0000E6		106	90-110			
Lead	198000		ng/l	200000		99.0	90-110			
Manganese	521000		ng/l	500000		104	90-110			
Molybdenum	50300		ng/l	50000		101	90-110			
Nickel	126000		ng/l	120000		105	90-110			
Selenium	19700		ng/l	20000		98.4	90-110			
Thallium	504		ng/l	500.00		101	90-110			
Vanadium	20400		ng/l	20000		102	90-110			
Zinc	518000		ng/l	500000		104	90-110			
Calibration Check (2404094-CCV5)				Prepared: 04/30/24 Analyzed: 05/01/24						
Antimony	19900		ng/l	20000		99.6	90-110			
Arsenic	20100		ng/l	20000		100	90-110			
Barium	200000		ng/l	200000		100	90-110			
Beryllium	5030		ng/l	5000.0		101	90-110			

[redacted]

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FILE #: 4205.00.003.001
REPORTED: 05/08/24 13:25
SUBMITTED: 04/29/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2404094 - B4D3006										
Calibration Check (2404094-CCV5) Contin					Prepared: 04/30/24 Analyzed: 05/01/24					
Cadmium	20300		ng/l	20000		101	90-110			
Chromium	258000		ng/l	240000		107	90-110			
Cobalt	52900		ng/l	50000		106	90-110			
Copper	2.14E6		ng/l	2.0000E6		107	90-110			
Lead	199000		ng/l	200000		99.3	90-110			
Manganese	528000		ng/l	500000		106	90-110			
Molybdenum	50800		ng/l	50000		102	90-110			
Nickel	128000		ng/l	120000		107	90-110			
Selenium	19600		ng/l	20000		97.8	90-110			
Thallium	486		ng/l	500.00		97.2	90-110			
Vanadium	20900		ng/l	20000		105	90-110			
Zinc	517000		ng/l	500000		103	90-110			
Calibration Check (2404094-CCV6)					Prepared: 04/30/24 Analyzed: 05/01/24					
Antimony	20000		ng/l	20000		99.8	90-110			
Arsenic	19900		ng/l	20000		99.7	90-110			
Barium	199000		ng/l	200000		99.3	90-110			
Beryllium	4940		ng/l	5000.0		98.7	90-110			
Cadmium	20200		ng/l	20000		101	90-110			
Chromium	256000		ng/l	240000		107	90-110			
Cobalt	52700		ng/l	50000		105	90-110			
Copper	2.13E6		ng/l	2.0000E6		106	90-110			
Lead	198000		ng/l	200000		99.0	90-110			
Manganese	523000		ng/l	500000		105	90-110			
Molybdenum	50600		ng/l	50000		101	90-110			
Nickel	127000		ng/l	120000		106	90-110			
Selenium	19800		ng/l	20000		98.8	90-110			
Thallium	498		ng/l	500.00		99.5	90-110			
Vanadium	20800		ng/l	20000		104	90-110			
Zinc	523000		ng/l	500000		105	90-110			
Calibration Check (2404094-CCV7)					Prepared: 04/30/24 Analyzed: 05/01/24					
Antimony	19800		ng/l	20000		99.1	90-110			
Arsenic	19800		ng/l	20000		99.1	90-110			
Barium	200000		ng/l	200000		99.9	90-110			
Beryllium	4910		ng/l	5000.0		98.3	90-110			
Cadmium	20100		ng/l	20000		100	90-110			
Chromium	256000		ng/l	240000		107	90-110			
Cobalt	52400		ng/l	50000		105	90-110			
Copper	2.11E6		ng/l	2.0000E6		106	90-110			

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FILE #: 4205.00.003.001
REPORTED: 05/08/24 13:25
SUBMITTED: 04/29/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2404094 - B4D3006										
Calibration Check (2404094-CCV7) Contin					Prepared: 04/30/24 Analyzed: 05/01/24					
Lead	199000		ng/l	200000		99.4	90-110			
Manganese	523000		ng/l	500000		105	90-110			
Molybdenum	50500		ng/l	50000		101	90-110			
Nickel	126000		ng/l	120000		105	90-110			
Selenium	19500		ng/l	20000		97.5	90-110			
Thallium	491		ng/l	500.00		98.3	90-110			
Vanadium	20600		ng/l	20000		103	90-110			
Zinc	518000		ng/l	500000		104	90-110			
High Cal Check (2404094-HCV1)					Prepared & Analyzed: 04/30/24					
Antimony	39800		ng/l	40000		99.6	95-105			
Arsenic	39800		ng/l	40000		99.6	95-105			
Barium	399000		ng/l	400000		99.9	95-105			
Beryllium	10000		ng/l	10000		100	95-105			
Cadmium	39600		ng/l	40000		98.9	95-105			
Chromium	473000		ng/l	480000		98.5	95-105			
Cobalt	98200		ng/l	100000		98.2	95-105			
Copper	3.94E6		ng/l	4.0000E6		98.5	95-105			
Lead	402000		ng/l	400000		100	95-105			
Manganese	984000		ng/l	1.0000E6		98.4	95-105			
Molybdenum	99000		ng/l	100000		99.0	95-105			
Nickel	236000		ng/l	240000		98.2	95-105			
Selenium	39900		ng/l	40000		99.6	95-105			
Thallium	1020		ng/l	1000.0		102	95-105			
Vanadium	39600		ng/l	40000		99.1	95-105			
Zinc	980000		ng/l	1.0000E6		98.0	95-105			
Initial Cal Blank (2404094-ICB1)					Prepared & Analyzed: 04/30/24					
Antimony	0.625		ng/l							
Arsenic	0.186		ng/l							
Barium	0.823		ng/l							
Beryllium	0.330		ng/l							
Cadmium	0.0636		ng/l							
Chromium	4.13		ng/l							
Cobalt	0.355		ng/l							
Copper	82.0		ng/l							
Lead	15.7		ng/l							
Manganese	3.39		ng/l							
Molybdenum	7.63		ng/l							
Nickel	-0.223		ng/l							U

[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: 05/08/24 13:25
SUBMITTED: 04/29/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2404094 - B4D3006										
Initial Cal Blank (2404094-ICB1) Continu				Prepared & Analyzed: 04/30/24						
Selenium	-0.801		ng/l							U
Thallium	0.937		ng/l							
Vanadium	-41.9		ng/l							U
Zinc	12.1		ng/l							
Initial Cal Check (2404094-ICV1)				Prepared & Analyzed: 04/30/24						
Antimony	19700		ng/l	20000		98.5	90-110			
Arsenic	19700		ng/l	20000		98.5	90-110			
Barium	195000		ng/l	200000		97.7	90-110			
Beryllium	4940		ng/l	5000.0		98.7	90-110			
Cadmium	20500		ng/l	20000		103	90-110			
Chromium	239000		ng/l	240000		99.6	90-110			
Cobalt	49600		ng/l	50000		99.1	90-110			
Copper	2.07E6		ng/l	2.0000E6		104	90-110			
Lead	196000		ng/l	200000		98.2	90-110			
Manganese	495000		ng/l	500000		99.1	90-110			
Molybdenum	48300		ng/l	50000		96.6	90-110			
Nickel	122000		ng/l	120000		101	90-110			
Selenium	20100		ng/l	20000		101	90-110			
Thallium	516		ng/l	500.00		103	90-110			
Vanadium	19700		ng/l	20000		98.4	90-110			
Zinc	512000		ng/l	500000		102	90-110			
Interference Check A (2404094-IFA1)				Prepared & Analyzed: 04/30/24						
Antimony	0.00		ng/l				80-120			U
Arsenic	0.00		ng/l				80-120			U
Barium	0.00		ng/l				80-120			U
Beryllium	0.00		ng/l				80-120			U
Cadmium	0.00		ng/l				80-120			U
Chromium	0.00		ng/l				80-120			U
Cobalt	0.00		ng/l				80-120			U
Copper	0.00		ng/l				80-120			U
Lead	0.00		ng/l				80-120			U
Manganese	0.00		ng/l				80-120			U
Molybdenum	298000		ng/l	300000		99.3	80-120			
Nickel	0.00		ng/l				80-120			U
Selenium	0.00		ng/l				80-120			U
Thallium	0.00		ng/l				80-120			U
Vanadium	0.00		ng/l				80-120			U
Zinc	0.00		ng/l				80-120			U

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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 2404094 - B4D3006										
Interference Check B (2404094-IFB1)				Prepared & Analyzed: 04/30/24						
Antimony	19900		ng/l	20000		99.7	80-120			
Arsenic	20300		ng/l	20000		102	80-120			
Barium	203000		ng/l	200000		101	80-120			
Beryllium	5250		ng/l	5000.0		105	80-120			
Cadmium	18800		ng/l	20000		94.1	80-120			
Chromium	250000		ng/l	240000		104	80-120			
Cobalt	48800		ng/l	50000		97.7	80-120			
Copper	1.86E6		ng/l	2.0000E6		93.0	80-120			
Lead	204000		ng/l	200000		102	80-120			
Manganese	531000		ng/l	500000		106	80-120			
Molybdenum	345000		ng/l	350000		98.6	80-120			
Nickel	114000		ng/l	120000		95.2	80-120			
Selenium	19100		ng/l	20000		95.6	80-120			
Thallium	525		ng/l	500.00		105	80-120			
Vanadium	21900		ng/l	20000		110	80-120			
Zinc	445000		ng/l	500000		88.9	80-120			
Batch 2405002 - B4D3006										
Calibration Blank (2405002-CCB1)				Prepared & Analyzed: 05/01/24						
Antimony	0.659		ng/l							
Arsenic	0.776		ng/l							
Barium	2.16		ng/l							
Beryllium	0.247		ng/l							
Cadmium	0.184		ng/l							
Chromium	4.39		ng/l							
Cobalt	0.362		ng/l							
Copper	48.8		ng/l							
Lead	10.2		ng/l							
Manganese	7.75		ng/l							
Molybdenum	12.4		ng/l							
Nickel	-0.600		ng/l							U
Selenium	0.00885		ng/l							
Thallium	1.17		ng/l							
Vanadium	-40.1		ng/l							U
Zinc	2.03		ng/l							
Calibration Blank (2405002-CCB2)				Prepared & Analyzed: 05/01/24						
Antimony	0.658		ng/l							
Arsenic	0.106		ng/l							
Barium	0.629		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 2405002 - B4D3006										
Calibration Blank (2405002-CCB2) Contin				Prepared & Analyzed: 05/01/24						
Beryllium	0.0983		ng/l							
Cadmium	0.125		ng/l							
Chromium	3.75		ng/l							
Cobalt	0.128		ng/l							
Copper	27.8		ng/l							
Lead	6.36		ng/l							
Manganese	5.57		ng/l							
Molybdenum	5.13		ng/l							
Nickel	-1.31		ng/l							U
Selenium	-0.927		ng/l							U
Thallium	0.918		ng/l							
Vanadium	-41.3		ng/l							U
Zinc	-3.59		ng/l							U
Calibration Blank (2405002-CCB3)				Prepared & Analyzed: 05/01/24						
Antimony	0.670		ng/l							
Arsenic	0.244		ng/l							
Barium	1.97		ng/l							
Beryllium	-0.0542		ng/l							U
Cadmium	0.160		ng/l							
Chromium	3.82		ng/l							
Cobalt	0.175		ng/l							
Copper	21.3		ng/l							
Lead	6.42		ng/l							
Manganese	5.18		ng/l							
Molybdenum	6.07		ng/l							
Nickel	-0.843		ng/l							U
Selenium	-0.00745		ng/l							U
Thallium	1.16		ng/l							
Vanadium	-40.2		ng/l							U
Zinc	-4.26		ng/l							U
Calibration Blank (2405002-CCB4)				Prepared & Analyzed: 05/01/24						
Antimony	0.559		ng/l							
Arsenic	0.319		ng/l							
Barium	0.115		ng/l							
Beryllium	-0.513		ng/l							U
Cadmium	0.0118		ng/l							
Chromium	2.32		ng/l							
Cobalt	0.0634		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 2405002 - B4D3006										
Calibration Blank (2405002-CCB4) Contin				Prepared & Analyzed: 05/01/24						
Copper	22.5		ng/l							
Lead	7.43		ng/l							
Manganese	3.51		ng/l							
Molybdenum	5.38		ng/l							
Nickel	-1.20		ng/l							U
Selenium	-4.23		ng/l							U
Thallium	1.06		ng/l							
Vanadium	-41.9		ng/l							U
Zinc	4.81		ng/l							
Calibration Blank (2405002-CCB5)				Prepared: 05/01/24 Analyzed: 05/02/24						
Antimony	0.720		ng/l							
Arsenic	0.0824		ng/l							
Barium	0.622		ng/l							
Beryllium	-0.414		ng/l							U
Cadmium	-0.00628		ng/l							U
Chromium	4.29		ng/l							
Cobalt	0.0188		ng/l							
Copper	20.0		ng/l							
Lead	7.06		ng/l							
Manganese	3.28		ng/l							
Molybdenum	5.96		ng/l							
Nickel	-1.33		ng/l							U
Selenium	-10.2		ng/l							U
Thallium	1.12		ng/l							
Vanadium	-41.2		ng/l							U
Zinc	-7.34		ng/l							U
Calibration Check (2405002-CCV1)				Prepared & Analyzed: 05/01/24						
Antimony	20000		ng/l	20000		100	90-110			
Arsenic	19900		ng/l	20000		99.3	90-110			
Barium	196000		ng/l	200000		97.8	90-110			
Beryllium	4940		ng/l	5000.0		98.9	90-110			
Cadmium	20200		ng/l	20000		101	90-110			
Chromium	248000		ng/l	240000		103	90-110			
Cobalt	50700		ng/l	50000		101	90-110			
Copper	2.04E6		ng/l	2.0000E6		102	90-110			
Lead	194000		ng/l	200000		97.1	90-110			
Manganese	507000		ng/l	500000		101	90-110			
Molybdenum	49000		ng/l	50000		98.1	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 2405002 - B4D3006										
Calibration Check (2405002-CCV1) Contin					Prepared & Analyzed: 05/01/24					
Nickel	122000		ng/l	120000		101	90-110			
Selenium	20000		ng/l	20000		100	90-110			
Thallium	486		ng/l	500.00		97.2	90-110			
Vanadium	19500		ng/l	20000		97.6	90-110			
Zinc	510000		ng/l	500000		102	90-110			
Calibration Check (2405002-CCV2)					Prepared & Analyzed: 05/01/24					
Antimony	19900		ng/l	20000		99.6	90-110			
Arsenic	19700		ng/l	20000		98.3	90-110			
Barium	194000		ng/l	200000		96.9	90-110			
Beryllium	4960		ng/l	5000.0		99.3	90-110			
Cadmium	20400		ng/l	20000		102	90-110			
Chromium	242000		ng/l	240000		101	90-110			
Cobalt	50300		ng/l	50000		101	90-110			
Copper	2.04E6		ng/l	2.0000E6		102	90-110			
Lead	196000		ng/l	200000		97.9	90-110			
Manganese	497000		ng/l	500000		99.3	90-110			
Molybdenum	49300		ng/l	50000		98.6	90-110			
Nickel	121000		ng/l	120000		101	90-110			
Selenium	19600		ng/l	20000		98.2	90-110			
Thallium	488		ng/l	500.00		97.6	90-110			
Vanadium	19100		ng/l	20000		95.4	90-110			
Zinc	515000		ng/l	500000		103	90-110			
Calibration Check (2405002-CCV3)					Prepared & Analyzed: 05/01/24					
Antimony	19900		ng/l	20000		99.4	90-110			
Arsenic	19700		ng/l	20000		98.7	90-110			
Barium	195000		ng/l	200000		97.7	90-110			
Beryllium	4960		ng/l	5000.0		99.3	90-110			
Cadmium	20400		ng/l	20000		102	90-110			
Chromium	244000		ng/l	240000		102	90-110			
Cobalt	50700		ng/l	50000		101	90-110			
Copper	2.06E6		ng/l	2.0000E6		103	90-110			
Lead	196000		ng/l	200000		98.0	90-110			
Manganese	503000		ng/l	500000		101	90-110			
Molybdenum	49800		ng/l	50000		99.5	90-110			
Nickel	121000		ng/l	120000		101	90-110			
Selenium	19800		ng/l	20000		99.0	90-110			
Thallium	494		ng/l	500.00		98.9	90-110			
Vanadium	19200		ng/l	20000		95.8	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 2405002 - B4D3006										
Calibration Check (2405002-CCV3) Contin					Prepared & Analyzed: 05/01/24					
Zinc	517000		ng/l	500000		103	90-110			
Calibration Check (2405002-CCV4)					Prepared & Analyzed: 05/01/24					
Antimony	20100		ng/l	20000		100	90-110			
Arsenic	19500		ng/l	20000		97.7	90-110			
Barium	195000		ng/l	200000		97.5	90-110			
Beryllium	4910		ng/l	5000.0		98.2	90-110			
Cadmium	20400		ng/l	20000		102	90-110			
Chromium	244000		ng/l	240000		102	90-110			
Cobalt	50800		ng/l	50000		102	90-110			
Copper	2.07E6		ng/l	2.0000E6		103	90-110			
Lead	198000		ng/l	200000		98.8	90-110			
Manganese	502000		ng/l	500000		100	90-110			
Molybdenum	50000		ng/l	50000		100	90-110			
Nickel	121000		ng/l	120000		101	90-110			
Selenium	19700		ng/l	20000		98.7	90-110			
Thallium	490		ng/l	500.00		98.0	90-110			
Vanadium	19200		ng/l	20000		95.9	90-110			
Zinc	515000		ng/l	500000		103	90-110			
Calibration Check (2405002-CCV5)					Prepared: 05/01/24 Analyzed: 05/02/24					
Antimony	20100		ng/l	20000		100	90-110			
Arsenic	19700		ng/l	20000		98.5	90-110			
Barium	194000		ng/l	200000		97.1	90-110			
Beryllium	5000		ng/l	5000.0		100	90-110			
Cadmium	20500		ng/l	20000		102	90-110			
Chromium	249000		ng/l	240000		104	90-110			
Cobalt	51300		ng/l	50000		103	90-110			
Copper	2.08E6		ng/l	2.0000E6		104	90-110			
Lead	196000		ng/l	200000		97.9	90-110			
Manganese	511000		ng/l	500000		102	90-110			
Molybdenum	50400		ng/l	50000		101	90-110			
Nickel	123000		ng/l	120000		102	90-110			
Selenium	19400		ng/l	20000		97.1	90-110			
Thallium	484		ng/l	500.00		96.7	90-110			
Vanadium	19600		ng/l	20000		98.1	90-110			
Zinc	516000		ng/l	500000		103	90-110			
High Cal Check (2405002-HCV1)					Prepared & Analyzed: 05/01/24					
Antimony	40300		ng/l	40000		101	95-105			
Arsenic	39900		ng/l	40000		99.7	95-105			

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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 2405002 - B4D3006										
High Cal Check (2405002-HCV1) Continue					Prepared & Analyzed: 05/01/24					
Barium	402000		ng/l	400000		101	95-105			
Beryllium	10100		ng/l	10000		101	95-105			
Cadmium	39700		ng/l	40000		99.4	95-105			
Chromium	467000		ng/l	480000		97.3	95-105			
Cobalt	97300		ng/l	100000		97.3	95-105			
Copper	3.87E6		ng/l	4.0000E6		96.7	95-105			
Lead	404000		ng/l	400000		101	95-105			
Manganese	975000		ng/l	1.0000E6		97.5	95-105			
Molybdenum	100000		ng/l	100000		100	95-105			
Nickel	231000		ng/l	240000		96.4	95-105			
Selenium	39900		ng/l	40000		99.6	95-105			
Thallium	1010		ng/l	1000.0		101	95-105			
Vanadium	39800		ng/l	40000		99.5	95-105			
Zinc	976000		ng/l	1.0000E6		97.6	95-105			
Initial Cal Blank (2405002-ICB1)					Prepared & Analyzed: 05/01/24					
Antimony	0.832		ng/l							
Arsenic	0.343		ng/l							
Barium	1.38		ng/l							
Beryllium	-0.0474		ng/l							U
Cadmium	0.173		ng/l							
Chromium	5.03		ng/l							
Cobalt	0.163		ng/l							
Copper	56.7		ng/l							
Lead	13.9		ng/l							
Manganese	6.96		ng/l							
Molybdenum	7.66		ng/l							
Nickel	-1.13		ng/l							U
Selenium	10.5		ng/l							
Thallium	0.993		ng/l							
Vanadium	-36.6		ng/l							U
Zinc	9.12		ng/l							
Initial Cal Check (2405002-ICV1)					Prepared & Analyzed: 05/01/24					
Antimony	20000		ng/l	20000		99.9	90-110			
Arsenic	19800		ng/l	20000		99.0	90-110			
Barium	197000		ng/l	200000		98.4	90-110			
Beryllium	5020		ng/l	5000.0		100	90-110			
Cadmium	20700		ng/l	20000		104	90-110			
Chromium	239000		ng/l	240000		99.4	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 2405002 - B4D3006										
Initial Cal Check (2405002-ICV1) Continu				Prepared & Analyzed: 05/01/24						
Cobalt	49700		ng/l	50000		99.4	90-110			
Copper	2.08E6		ng/l	2.0000E6		104	90-110			
Lead	195000		ng/l	200000		97.6	90-110			
Manganese	498000		ng/l	500000		99.5	90-110			
Molybdenum	49400		ng/l	50000		98.8	90-110			
Nickel	121000		ng/l	120000		101	90-110			
Selenium	20600		ng/l	20000		103	90-110			
Thallium	514		ng/l	500.00		103	90-110			
Vanadium	19200		ng/l	20000		96.0	90-110			
Zinc	516000		ng/l	500000		103	90-110			
Interference Check A (2405002-IFA1)				Prepared & Analyzed: 05/01/24						
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	293000		ng/l	300000		97.8	80-120			
Nickel	0.00		ng/l				80-120			U
Selenium	0.00		ng/l				80-120			U
Thallium	0.00		ng/l				80-120			U
Vanadium	0.00		ng/l				80-120			U
Zinc	0.00		ng/l				80-120			U
Interference Check B (2405002-IFB1)				Prepared & Analyzed: 05/01/24						
Antimony	20100		ng/l	20000		100	80-120			
Arsenic	20300		ng/l	20000		102	80-120			
Barium	204000		ng/l	200000		102	80-120			
Beryllium	5350		ng/l	5000.0		107	80-120			
Cadmium	19000		ng/l	20000		95.1	80-120			
Chromium	252000		ng/l	240000		105	80-120			
Cobalt	48400		ng/l	50000		96.8	80-120			
Copper	1.86E6		ng/l	2.0000E6		92.8	80-120			
Lead	201000		ng/l	200000		100	80-120			
Manganese	533000		ng/l	500000		107	80-120			

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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: 05/08/24 13:25
SUBMITTED: 04/29/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2405002 - B4D3006										
Interference Check B (2405002-IFB1) Co					Prepared & Analyzed: 05/01/24					
Molybdenum	341000		ng/l	350000		97.4	80-120			
Nickel	113000		ng/l	120000		94.4	80-120			
Selenium	19200		ng/l	20000		96.0	80-120			
Thallium	514		ng/l	500.00		103	80-120			
Vanadium	21400		ng/l	20000		107	80-120			
Zinc	449000		ng/l	500000		89.7	80-120			
Batch B4D3006 - ICP-MS Extraction										
Blank (B4D3006-BLK1)					Prepared & Analyzed: 04/30/24					
Antimony	ND	0.0386	ng/m³ Air							SL, U
Arsenic	ND	0.00937	ng/m³ Air							U
Barium	ND	1.07	ng/m³ Air							QB-01, U
Beryllium	ND	0.00320	ng/m³ Air							U
Cadmium	ND	0.0741	ng/m³ Air							U
Chromium	ND	2.21	ng/m³ Air							U
Cobalt	ND	0.0436	ng/m³ Air							U
Copper	ND	2.63	ng/m³ Air							U
Lead	ND	0.214	ng/m³ Air							U
Manganese	ND	1.89	ng/m³ Air							U
Molybdenum	ND	0.359	ng/m³ Air							U
Nickel	ND	0.652	ng/m³ Air							U
Selenium	ND	0.00896	ng/m³ Air							U
Thallium	ND	5.89E-4	ng/m³ Air							U
Vanadium	ND	0.0529	ng/m³ Air							U
Zinc	ND	76.8	ng/m³ Air							U
LCS (B4D3006-BS1)					Prepared & Analyzed: 04/30/24					
Antimony	0.712	0.0386	ng/m³ Air	1.3829		51.5	80-120			SL
Arsenic	2.58	0.00937	ng/m³ Air	2.7658		93.3	80-120			
Barium	27.5	1.07	ng/m³ Air	27.658		99.3	80-120			QB-01
Beryllium	1.28	0.00320	ng/m³ Air	1.3829		92.7	80-120			
Cadmium	1.40	0.0741	ng/m³ Air	1.3829		101	80-120			
Chromium	15.3	2.21	ng/m³ Air	13.829		111	80-120			
Cobalt	1.41	0.0436	ng/m³ Air	1.3829		102	80-120			
Copper	29.1	2.63	ng/m³ Air	27.658		105	80-120			
Lead	12.9	0.214	ng/m³ Air	13.829		93.2	80-120			
Manganese	7.97	1.89	ng/m³ Air	8.2975		96.1	80-120			
Molybdenum	1.42	0.359	ng/m³ Air	1.3829		102	80-120			
Nickel	3.28	0.652	ng/m³ Air	2.7658		118	80-120			
Selenium	2.62	0.00896	ng/m³ Air	2.7658		94.9	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 B4D3006 - ICP-MS Extraction										
LCS (B4D3006-BS1) Continued					Prepared & Analyzed: 04/30/24					
Thallium	0.132	5.89E-4	ng/m³ Air	0.13829		95.3	80-120			
Vanadium	2.65	0.0529	ng/m³ Air	2.7658		95.8	80-120			
Zinc	140	76.8	ng/m³ Air	82.975		168	80-120			
LCS (B4D3006-BS2)					Prepared & Analyzed: 04/30/24					
Antimony	0.681	0.0386	ng/m³ Air	1.3829		49.3	80-120			SL
Arsenic	2.61	0.00937	ng/m³ Air	2.7658		94.4	80-120			
Barium	27.2	1.07	ng/m³ Air	27.658		98.3	80-120			QB-01
Beryllium	1.28	0.00320	ng/m³ Air	1.3829		92.6	80-120			
Cadmium	1.38	0.0741	ng/m³ Air	1.3829		99.7	80-120			
Chromium	15.5	2.21	ng/m³ Air	13.829		112	80-120			
Cobalt	1.42	0.0436	ng/m³ Air	1.3829		103	80-120			
Copper	29.7	2.63	ng/m³ Air	27.658		107	80-120			
Lead	13.1	0.214	ng/m³ Air	13.829		94.4	80-120			
Manganese	8.00	1.89	ng/m³ Air	8.2975		96.4	80-120			
Molybdenum	1.42	0.359	ng/m³ Air	1.3829		103	80-120			
Nickel	3.28	0.652	ng/m³ Air	2.7658		119	80-120			
Selenium	2.59	0.00896	ng/m³ Air	2.7658		93.5	80-120			
Thallium	0.135	5.89E-4	ng/m³ Air	0.13829		97.7	80-120			
Vanadium	2.70	0.0529	ng/m³ Air	2.7658		97.6	80-120			
Zinc	138	76.8	ng/m³ Air	82.975		166	80-120			
Duplicate (B4D3006-DUP1)					**Source: 4042941-19** Prepared & Analyzed: 04/30/24					
Antimony	0.0602	0.0314	ng/m³ Air		0.0636			5.45	10	SL
Arsenic	0.647	0.00763	ng/m³ Air		0.662			2.32	10	
Barium	4.27	0.872	ng/m³ Air		3.84			10.6	10	QB-01
Beryllium	0.0136	0.00261	ng/m³ Air		0.0140			2.95	10	
Cadmium	ND	0.0604	ng/m³ Air		ND				10	U
Chromium	2.92	1.80	ng/m³ Air		2.65			9.44	10	
Cobalt	0.597	0.0355	ng/m³ Air		0.563			5.94	10	
Copper	73.3	2.14	ng/m³ Air		70.3			4.09	10	
Lead	0.497	0.174	ng/m³ Air		0.451			9.57	10	
Manganese	15.3	1.54	ng/m³ Air		14.6			4.61	10	
Molybdenum	2.35	0.292	ng/m³ Air		2.30			2.16	10	
Nickel	2.13	0.531	ng/m³ Air		2.00			6.20	10	
Selenium	0.169	0.00730	ng/m³ Air		0.167			1.09	10	
Thallium	0.00252	4.80E-4	ng/m³ Air		0.00258			2.10	10	
Vanadium	1.51	0.0431	ng/m³ Air		1.43			5.46	10	
Zinc	ND	62.6	ng/m³ Air		ND				10	U
Duplicate (B4D3006-DUP2)					**Source: 4042941-02** Prepared & Analyzed: 04/30/24					

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FILE #: 4205.00.003.001
REPORTED: 05/08/24 13:25
SUBMITTED: 04/29/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4D3006 - ICP-MS Extraction										
Duplicate (B4D3006-DUP2) Continued			**Source: 4042941-02**		Prepared & Analyzed: 04/30/24					
Antimony	0.195	0.0306	ng/m³ Air		0.185			5.56	10	SL
Arsenic	0.295	0.00742	ng/m³ Air		0.284			3.64	10	
Barium	5.70	0.847	ng/m³ Air		5.45			4.49	10	QB-01
Beryllium	0.0122	0.00253	ng/m³ Air		0.0126			3.30	10	
Cadmium	ND	0.0587	ng/m³ Air		ND				10	U
Chromium	2.04	1.75	ng/m³ Air		2.16			5.69	10	
Cobalt	0.367	0.0345	ng/m³ Air		0.377			2.66	10	
Copper	35.9	2.08	ng/m³ Air		35.3			1.76	10	
Lead	0.985	0.169	ng/m³ Air		1.07			8.64	10	
Manganese	12.0	1.50	ng/m³ Air		12.1			0.897	10	
Molybdenum	1.48	0.284	ng/m³ Air		1.47			0.698	10	
Nickel	1.39	0.516	ng/m³ Air		1.45			4.34	10	
Selenium	0.161	0.00709	ng/m³ Air		0.166			3.37	10	
Thallium	9.49E-4	4.66E-4	ng/m³ Air		9.82E-4			3.43	10	
Vanadium	1.12	0.0419	ng/m³ Air		1.16			3.41	10	
Zinc	ND	60.8	ng/m³ Air		ND				10	U
Duplicate (B4D3006-DUP3)			**Source: 4042941-25**		Prepared: 04/30/24 Analyzed: 05/01/24					
Antimony	0.0829	0.0347	ng/m³ Air		0.0826			0.305	10	SL
Arsenic	0.253	0.00841	ng/m³ Air		0.251			0.631	10	
Barium	2.98	0.961	ng/m³ Air		2.98			0.0409	10	QB-01
Beryllium	0.0144	0.00287	ng/m³ Air		0.0143			0.293	10	
Cadmium	ND	0.0665	ng/m³ Air		ND				10	U
Chromium	2.27	1.98	ng/m³ Air		2.27			0.0869	10	
Cobalt	0.336	0.0392	ng/m³ Air		0.336			0.181	10	
Copper	82.8	2.36	ng/m³ Air		82.4			0.511	10	
Lead	0.531	0.192	ng/m³ Air		0.527			0.734	10	
Manganese	8.58	1.70	ng/m³ Air		8.50			0.957	10	
Molybdenum	2.41	0.322	ng/m³ Air		2.33			3.23	10	
Nickel	1.23	0.585	ng/m³ Air		1.22			0.704	10	
Selenium	0.124	0.00805	ng/m³ Air		0.131			5.35	10	
Thallium	0.00121	5.29E-4	ng/m³ Air		0.00120			1.17	10	
Vanadium	0.801	0.0475	ng/m³ Air		0.804			0.376	10	
Zinc	ND	69.0	ng/m³ Air		ND				10	U
Duplicate (B4D3006-DUP4)			**Source: 4042941-12**		Prepared: 04/30/24 Analyzed: 05/01/24					
Antimony	0.0640	0.0325	ng/m³ Air		0.0645			0.698	10	SL
Arsenic	0.130	0.00790	ng/m³ Air		0.127			1.97	10	
Barium	2.31	0.902	ng/m³ Air		2.30			0.551	10	QB-01
Beryllium	0.00871	0.00270	ng/m³ Air		0.00891			2.27	10	

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FILE #: 4205.00.003.001
REPORTED: 05/08/24 13:25
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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 B4D3006 - ICP-MS Extraction										
Duplicate (B4D3006-DUP4) Continued		**Source: 4042941-12**		Prepared: 04/30/24 Analyzed: 05/01/24						
Cadmium	ND	0.0625	ng/m³ Air		ND				10	U
Chromium	ND	1.86	ng/m³ Air		ND				10	U
Cobalt	0.195	0.0368	ng/m³ Air		0.193			0.749	10	
Copper	52.4	2.22	ng/m³ Air		52.0			0.747	10	
Lead	0.443	0.180	ng/m³ Air		0.448			1.15	10	
Manganese	5.13	1.59	ng/m³ Air		5.07			1.06	10	
Molybdenum	2.45	0.303	ng/m³ Air		2.46			0.621	10	
Nickel	1.00	0.550	ng/m³ Air		0.996			0.543	10	
Selenium	0.148	0.00755	ng/m³ Air		0.148			0.0669	10	
Thallium	0.00111	4.96E-4	ng/m³ Air		0.00117			5.08	10	
Vanadium	0.569	0.0446	ng/m³ Air		0.557			2.15	10	
Zinc	ND	64.7	ng/m³ Air		ND				10	U
Duplicate (B4D3006-DUP5)		**Source: 4042941-19R**		Prepared: 04/30/24 Analyzed: 05/01/24						
Antimony	0.0612	0.0314	ng/m³ Air		0.0640			4.52	10	
Arsenic	0.647	0.00763	ng/m³ Air		0.653			0.925	10	
Barium	4.25	0.872	ng/m³ Air		3.78			11.8	10	
Beryllium	0.0134	0.00261	ng/m³ Air		0.0135			0.907	10	
Cadmium	ND	0.0604	ng/m³ Air		ND				10	U
Chromium	2.83	1.80	ng/m³ Air		2.58			9.30	10	
Cobalt	0.591	0.0355	ng/m³ Air		0.558			5.70	10	
Copper	73.0	2.14	ng/m³ Air		70.7			3.07	10	
Lead	0.499	0.174	ng/m³ Air		0.452			10.0	10	
Manganese	15.1	1.54	ng/m³ Air		14.4			4.85	10	
Molybdenum	2.42	0.292	ng/m³ Air		2.33			3.65	10	
Nickel	2.09	0.531	ng/m³ Air		1.99			5.38	10	
Selenium	0.175	0.00730	ng/m³ Air		0.171			2.74	10	
Thallium	0.00243	4.80E-4	ng/m³ Air		0.00256			5.32	10	
Vanadium	1.44	0.0431	ng/m³ Air		1.37			5.15	10	
Zinc	ND	62.6	ng/m³ Air		ND				10	U
Matrix Spike (B4D3006-MS1)		**Source: 4042941-19**		Prepared & Analyzed: 04/30/24						
Antimony	0.643	0.0314	ng/m³ Air	1.1266	0.0636	51.4	80-120			SL
Arsenic	2.70	0.00763	ng/m³ Air	2.2532	0.662	90.6	80-120			
Barium	24.7	0.872	ng/m³ Air	22.532	3.84	92.7	80-120			QB-01
Beryllium	1.08	0.00261	ng/m³ Air	1.1266	0.0140	94.6	80-120			
Cadmium	1.10	0.0604	ng/m³ Air	1.1266	ND	98.1	80-120			
Chromium	14.9	1.80	ng/m³ Air	11.266	2.65	109	80-120			
Cobalt	1.75	0.0355	ng/m³ Air	1.1266	0.563	105	80-120			
Copper	97.4	2.14	ng/m³ Air	22.532	70.3	120	80-120			QM-07

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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 B4D3006 - ICP-MS Extraction										
Matrix Spike (B4D3006-MS1) Continued Source: 4042941-19 Prepared & Analyzed: 04/30/24										
Lead	10.9	0.174	ng/m³ Air	11.266	0.451	93.1	80-120			
Manganese	21.7	1.54	ng/m³ Air	6.7597	14.6	105	80-120			
Molybdenum	3.27	0.292	ng/m³ Air	1.1266	2.30	86.1	80-120			
Nickel	4.41	0.531	ng/m³ Air	2.2532	2.00	107	80-120			
Selenium	2.17	0.00730	ng/m³ Air	2.2532	0.167	88.8	80-120			
Thallium	0.107	4.80E-4	ng/m³ Air	0.11266	0.00258	93.1	80-120			
Vanadium	3.76	0.0431	ng/m³ Air	2.2532	1.43	103	80-120			
Zinc	96.8	62.6	ng/m³ Air	67.597	ND	143	80-120			
Matrix Spike (B4D3006-MS2) Source: 4042941-02 Prepared & Analyzed: 04/30/24										
Antimony	0.769	0.0306	ng/m³ Air	1.0947	0.185	53.4	80-120			SL
Arsenic	2.31	0.00742	ng/m³ Air	2.1894	0.284	92.5	80-120			
Barium	26.3	0.847	ng/m³ Air	21.894	5.45	95.0	80-120			QB-01
Beryllium	1.05	0.00253	ng/m³ Air	1.0947	0.0126	94.3	80-120			
Cadmium	1.08	0.0587	ng/m³ Air	1.0947	ND	98.3	80-120			
Chromium	14.5	1.75	ng/m³ Air	10.947	2.16	113	80-120			
Cobalt	1.55	0.0345	ng/m³ Air	1.0947	0.377	107	80-120			
Copper	60.9	2.08	ng/m³ Air	21.894	35.3	117	80-120			
Lead	11.0	0.169	ng/m³ Air	10.947	1.07	91.0	80-120			
Manganese	19.1	1.50	ng/m³ Air	6.5681	12.1	107	80-120			
Molybdenum	2.36	0.284	ng/m³ Air	1.0947	1.47	81.5	80-120			
Nickel	3.81	0.516	ng/m³ Air	2.1894	1.45	108	80-120			
Selenium	2.05	0.00709	ng/m³ Air	2.1894	0.166	86.0	80-120			
Thallium	0.0998	4.66E-4	ng/m³ Air	0.10947	9.82E-4	90.3	80-120			
Vanadium	3.51	0.0419	ng/m³ Air	2.1894	1.16	107	80-120			
Zinc	112	60.8	ng/m³ Air	65.681	ND	170	80-120			
Matrix Spike (B4D3006-MS3) Source: 4042941-19R Prepared: 04/30/24 Analyzed: 05/01/24										
Antimony	0.643	0.0314	ng/m³ Air	1.1266	0.0640	51.4	80-120			SL
Arsenic	2.69	0.00763	ng/m³ Air	2.2532	0.653	90.6	80-120			
Barium	24.9	0.872	ng/m³ Air	22.532	3.78	93.6	80-120			QB-01
Beryllium	1.08	0.00261	ng/m³ Air	1.1266	0.0135	94.8	80-120			
Cadmium	1.12	0.0604	ng/m³ Air	1.1266	ND	99.1	80-120			
Chromium	14.8	1.80	ng/m³ Air	11.266	2.58	108	80-120			
Cobalt	1.74	0.0355	ng/m³ Air	1.1266	0.558	105	80-120			
Copper	96.9	2.14	ng/m³ Air	22.532	70.7	116	80-120			
Lead	11.0	0.174	ng/m³ Air	11.266	0.452	93.3	80-120			
Manganese	21.6	1.54	ng/m³ Air	6.7597	14.4	107	80-120			
Molybdenum	3.30	0.292	ng/m³ Air	1.1266	2.33	86.2	80-120			
Nickel	4.38	0.531	ng/m³ Air	2.2532	1.99	106	80-120			

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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: 05/08/24 13:25
SUBMITTED: 04/29/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4D3006 - ICP-MS Extraction										
Matrix Spike (B4D3006-MS3) Continued Source: 4042941-19R Prepared: 04/30/24 Analyzed: 05/01/24										
Selenium	2.17	0.00730	ng/m³ Air	2.2532	0.171	88.5	80-120			
Thallium	0.105	4.80E-4	ng/m³ Air	0.11266	0.00256	91.4	80-120			
Vanadium	3.62	0.0431	ng/m³ Air	2.2532	1.37	100	80-120			
Zinc	97.5	62.6	ng/m³ Air	67.597	ND	144	80-120			
Matrix Spike Dup (B4D3006-MSD1) Source: 4042941-19 Prepared & Analyzed: 04/30/24										
Antimony	0.636	0.0314	ng/m³ Air	1.1266	0.0636	50.8	80-120	1.05	20	SL
Arsenic	2.64	0.00763	ng/m³ Air	2.2532	0.662	87.6	80-120	2.52	20	
Barium	25.1	0.872	ng/m³ Air	22.532	3.84	94.3	80-120	1.43	20	QB-01
Beryllium	1.09	0.00261	ng/m³ Air	1.1266	0.0140	95.1	80-120	0.533	20	
Cadmium	1.10	0.0604	ng/m³ Air	1.1266	ND	97.9	80-120	0.162	20	
Chromium	14.8	1.80	ng/m³ Air	11.266	2.65	108	80-120	0.683	20	
Cobalt	1.75	0.0355	ng/m³ Air	1.1266	0.563	106	80-120	0.0431	20	
Copper	99.8	2.14	ng/m³ Air	22.532	70.3	131	80-120	2.39	20	QM-07
Lead	10.9	0.174	ng/m³ Air	11.266	0.451	92.6	80-120	0.530	20	
Manganese	21.9	1.54	ng/m³ Air	6.7597	14.6	108	80-120	1.14	20	
Molybdenum	3.37	0.292	ng/m³ Air	1.1266	2.30	95.3	80-120	3.13	20	
Nickel	4.39	0.531	ng/m³ Air	2.2532	2.00	106	80-120	0.517	20	
Selenium	2.16	0.00730	ng/m³ Air	2.2532	0.167	88.3	80-120	0.465	20	
Thallium	0.107	4.80E-4	ng/m³ Air	0.11266	0.00258	93.0	80-120	0.0937	20	
Vanadium	3.74	0.0431	ng/m³ Air	2.2532	1.43	102	80-120	0.493	20	
Zinc	101	62.6	ng/m³ Air	67.597	ND	149	80-120	3.73	20	
Matrix Spike Dup (B4D3006-MSD2) Source: 4042941-02 Prepared & Analyzed: 04/30/24										
Antimony	0.792	0.0306	ng/m³ Air	1.0947	0.185	55.5	80-120	2.94	20	SL
Arsenic	2.33	0.00742	ng/m³ Air	2.1894	0.284	93.6	80-120	1.02	20	
Barium	26.5	0.847	ng/m³ Air	21.894	5.45	96.3	80-120	1.08	20	QB-01
Beryllium	1.08	0.00253	ng/m³ Air	1.0947	0.0126	97.7	80-120	3.44	20	
Cadmium	1.06	0.0587	ng/m³ Air	1.0947	ND	96.9	80-120	1.45	20	
Chromium	15.0	1.75	ng/m³ Air	10.947	2.16	118	80-120	3.77	20	
Cobalt	1.58	0.0345	ng/m³ Air	1.0947	0.377	110	80-120	2.53	20	
Copper	62.8	2.08	ng/m³ Air	21.894	35.3	126	80-120	3.11	20	QM-07
Lead	11.2	0.169	ng/m³ Air	10.947	1.07	92.7	80-120	1.65	20	
Manganese	19.6	1.50	ng/m³ Air	6.5681	12.1	114	80-120	2.53	20	
Molybdenum	2.47	0.284	ng/m³ Air	1.0947	1.47	91.8	80-120	4.64	20	
Nickel	3.97	0.516	ng/m³ Air	2.1894	1.45	115	80-120	4.05	20	
Selenium	2.11	0.00709	ng/m³ Air	2.1894	0.166	88.9	80-120	3.05	20	
Thallium	0.102	4.66E-4	ng/m³ Air	0.10947	9.82E-4	92.1	80-120	2.02	20	
Vanadium	3.61	0.0419	ng/m³ Air	2.1894	1.16	112	80-120	2.92	20	
Zinc	108	60.8	ng/m³ Air	65.681	ND	165	80-120	3.50	20	

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REPORTED: 05/08/24 13:25
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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 B4D3006 - ICP-MS Extraction										
Matrix Spike Dup (B4D3006-MSD3)			**Source: 4042941-19R**		Prepared: 04/30/24		Analyzed: 05/01/24			
Antimony	0.632	0.0314	ng/m³ Air	1.1266	0.0640	50.4	80-120	1.69	20	
Arsenic	2.62	0.00763	ng/m³ Air	2.2532	0.653	87.4	80-120	2.70	20	
Barium	24.5	0.872	ng/m³ Air	22.532	3.78	92.1	80-120	1.34	20	
Beryllium	1.08	0.00261	ng/m³ Air	1.1266	0.0135	94.9	80-120	0.0577	20	
Cadmium	1.09	0.0604	ng/m³ Air	1.1266	ND	97.1	80-120	2.00	20	
Chromium	14.8	1.80	ng/m³ Air	11.266	2.58	108	80-120	0.0652	20	
Cobalt	1.74	0.0355	ng/m³ Air	1.1266	0.558	105	80-120	0.00880	20	
Copper	99.7	2.14	ng/m³ Air	22.532	70.7	128	80-120	2.88	20	
Lead	11.0	0.174	ng/m³ Air	11.266	0.452	93.3	80-120	0.0293	20	
Manganese	21.9	1.54	ng/m³ Air	6.7597	14.4	110	80-120	1.03	20	
Molybdenum	3.42	0.292	ng/m³ Air	1.1266	2.33	96.3	80-120	3.39	20	
Nickel	4.35	0.531	ng/m³ Air	2.2532	1.99	105	80-120	0.871	20	
Selenium	2.16	0.00730	ng/m³ Air	2.2532	0.171	88.2	80-120	0.324	20	
Thallium	0.105	4.80E-4	ng/m³ Air	0.11266	0.00256	90.8	80-120	0.647	20	
Vanadium	3.63	0.0431	ng/m³ Air	2.2532	1.37	100	80-120	0.231	20	
Zinc	102	62.6	ng/m³ Air	67.597	ND	151	80-120	4.64	20	
Post Spike (B4D3006-PS1)			**Source: 4042941-19**		Prepared & Analyzed: 04/30/24					
Antimony	0.286	0.0314	ng/m³ Air	0.22532	0.0636	98.5	75-125			SL
Arsenic	1.73	0.00763	ng/m³ Air	1.1266	0.662	94.9	75-125			
Barium	5.98	0.872	ng/m³ Air	2.2532	3.84	94.8	75-125			QB-01
Beryllium	0.236	0.00261	ng/m³ Air	0.22532	0.0140	98.6	75-125			
Cadmium	0.123	0.0604	ng/m³ Air	0.11266	ND	110	75-125			
Chromium	4.07	1.80	ng/m³ Air	1.1266	2.65	125	75-125			PS-01
Cobalt	0.828	0.0355	ng/m³ Air	0.22532	0.563	118	75-125			
Copper	85.6	2.14	ng/m³ Air	11.266	70.3	135	75-125			A-01
Lead	21.5	0.174	ng/m³ Air	22.532	0.451	93.5	75-125			
Manganese	17.8	1.54	ng/m³ Air	2.2532	14.6	141	75-125			A-01
Molybdenum	3.19	0.292	ng/m³ Air	1.1266	2.30	79.2	75-125			
Nickel	4.55	0.531	ng/m³ Air	2.2532	2.00	113	75-125			
Selenium	1.18	0.00730	ng/m³ Air	1.1266	0.167	90.1	75-125			
Thallium	0.0563	4.80E-4	ng/m³ Air	5.6331E-2	0.00258	95.3	75-125			
Vanadium	2.70	0.0431	ng/m³ Air	1.1266	1.43	113	75-125			
Zinc	ND	62.6	ng/m³ Air	22.532	ND		75-125			U
Post Spike (B4D3006-PS2)			**Source: 4042941-02**		Prepared & Analyzed: 04/30/24					
Antimony	0.406	0.0306	ng/m³ Air	0.21894	0.185	101	75-125			SL
Arsenic	1.33	0.00742	ng/m³ Air	1.0947	0.284	95.7	75-125			
Barium	7.62	0.847	ng/m³ Air	2.1894	5.45	99.3	75-125			QB-01
Beryllium	0.230	0.00253	ng/m³ Air	0.21894	0.0126	99.3	75-125			

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AQS SITE CODE:
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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4D3006 - ICP-MS Extraction										
Post Spike (B4D3006-PS2) Continued			**Source: 4042941-02**		Prepared & Analyzed: 04/30/24					
Cadmium	0.121	0.0587	ng/m³ Air	0.10947	ND	111	75-125			
Chromium	3.48	1.75	ng/m³ Air	1.0947	2.16	120	75-125			
Cobalt	0.620	0.0345	ng/m³ Air	0.21894	0.377	111	75-125			
Copper	48.1	2.08	ng/m³ Air	10.947	35.3	116	75-125			
Lead	21.6	0.169	ng/m³ Air	21.894	1.07	93.6	75-125			
Manganese	14.7	1.50	ng/m³ Air	2.1894	12.1	121	75-125			
Molybdenum	2.39	0.284	ng/m³ Air	1.0947	1.47	84.3	75-125			
Nickel	3.84	0.516	ng/m³ Air	2.1894	1.45	109	75-125			
Selenium	1.15	0.00709	ng/m³ Air	1.0947	0.166	89.6	75-125			
Thallium	0.0539	4.66E-4	ng/m³ Air	5.4734E-2	9.82E-4	96.7	75-125			
Vanadium	2.40	0.0419	ng/m³ Air	1.0947	1.16	114	75-125			
Zinc	66.5	60.8	ng/m³ Air	21.894	ND	304	75-125			
Post Spike (B4D3006-PS3)			**Source: 4042941-19R**		Prepared: 04/30/24 Analyzed: 05/01/24					
Antimony	0.291	0.0314	ng/m³ Air	0.22532	0.0640	101	75-125			
Arsenic	1.73	0.00763	ng/m³ Air	1.1266	0.653	95.9	75-125			
Barium	5.94	0.872	ng/m³ Air	2.2532	3.78	96.0	75-125			
Beryllium	0.237	0.00261	ng/m³ Air	0.22532	0.0135	99.2	75-125			
Cadmium	0.125	0.0604	ng/m³ Air	0.11266	ND	111	75-125			
Chromium	3.99	1.80	ng/m³ Air	1.1266	2.58	125	75-125			
Cobalt	0.821	0.0355	ng/m³ Air	0.22532	0.558	117	75-125			
Copper	85.5	2.14	ng/m³ Air	11.266	70.7	131	75-125			
Lead	22.2	0.174	ng/m³ Air	22.532	0.452	96.4	75-125			
Manganese	17.7	1.54	ng/m³ Air	2.2532	14.4	146	75-125			
Molybdenum	3.30	0.292	ng/m³ Air	1.1266	2.33	86.1	75-125			
Nickel	4.41	0.531	ng/m³ Air	2.2532	1.99	108	75-125			
Selenium	1.21	0.00730	ng/m³ Air	1.1266	0.171	92.2	75-125			
Thallium	0.0569	4.80E-4	ng/m³ Air	5.6331E-2	0.00256	96.5	75-125			
Vanadium	2.65	0.0431	ng/m³ Air	1.1266	1.37	113	75-125			
Zinc	ND	62.6	ng/m³ Air	22.532	ND		75-125			U
Dilution Check (B4D3006-SRL1)			**Source: 4042941-19**		Prepared & Analyzed: 04/30/24					
Antimony	ND	0.157	ng/m³ Air		ND				10	SL, U
Arsenic	0.672	0.0382	ng/m³ Air		0.662			1.51	10	
Barium	ND	4.36	ng/m³ Air		ND				10	QB-01, U
Beryllium	0.0151	0.0130	ng/m³ Air		0.0140			7.11	10	
Cadmium	ND	0.302	ng/m³ Air		ND				10	U
Chromium	ND	9.00	ng/m³ Air		ND				10	U
Cobalt	0.595	0.178	ng/m³ Air		0.563			5.61	10	
Copper	74.7	10.7	ng/m³ Air		70.3			6.02	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 B4D3006 - ICP-MS Extraction										
Dilution Check (B4D3006-SRL1) Continue			**Source: 4042941-19**		Prepared & Analyzed: 04/30/24					
Lead	ND	0.872	ng/m³ Air		ND				10	U
Manganese	15.7	7.70	ng/m³ Air		14.6			7.02	10	
Molybdenum	2.61	1.46	ng/m³ Air		2.30			12.6	10	
Nickel	ND	2.66	ng/m³ Air		ND				10	U
Selenium	0.179	0.0365	ng/m³ Air		0.167			6.97	10	
Thallium	0.00345	0.00240	ng/m³ Air		0.00258			28.9	10	
Vanadium	1.48	0.215	ng/m³ Air		1.43			3.15	10	
Zinc	ND	313	ng/m³ Air		ND				10	U
Dilution Check (B4D3006-SRL2)			**Source: 4042941-02**		Prepared & Analyzed: 04/30/24					
Antimony	0.179	0.153	ng/m³ Air		0.185			3.14	10	SL
Arsenic	0.296	0.0371	ng/m³ Air		0.284			3.90	10	
Barium	5.53	4.23	ng/m³ Air		5.45			1.40	10	QB-01
Beryllium	ND	0.0127	ng/m³ Air		ND				10	U
Cadmium	ND	0.293	ng/m³ Air		ND				10	U
Chromium	ND	8.75	ng/m³ Air		ND				10	U
Cobalt	0.390	0.173	ng/m³ Air		0.377			3.43	10	
Copper	37.2	10.4	ng/m³ Air		35.3			5.05	10	
Lead	1.11	0.847	ng/m³ Air		1.07			3.44	10	
Manganese	12.5	7.48	ng/m³ Air		12.1			3.37	10	
Molybdenum	1.60	1.42	ng/m³ Air		1.47			8.63	10	
Nickel	ND	2.58	ng/m³ Air		ND				10	U
Selenium	0.188	0.0355	ng/m³ Air		0.166			11.9	10	
Thallium	ND	0.00233	ng/m³ Air		ND				10	U
Vanadium	1.16	0.209	ng/m³ Air		1.16			0.516	10	
Zinc	ND	304	ng/m³ Air		ND				10	U

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Notes and Definitions

U	Under Detection Limit
SL	The spike recovery was outside acceptance limits. Reported value may be biased low.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD.
QB-01	Analyte exceeds method blank criteria
PS-01	Post Spike exceeds DQO criteria.
FB-01	Analyte exceeds Field Blank criteria.
A-01	Parent sample >4x post spike amount
ND	Analyte NOT DETECTED
NR	Not Reported
MDL	Method Detection Limit
RPD	Relative Percent Difference

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

Stage 1 Data Verification Checklist – Metals

HDOH CAB – Ambient Community Air Sampling – Lahaina

Task Order No. 23141

Reviewed by:
Kierra Johnson 05/09/2024 and Shanna Vasser 05/10/2024
Laboratory: Eastern Research Group – Morrisville, NC
Collection date(s): 04/15/2024 and 04/18/2024 – 04/24/2024
Report No: 4042941

√	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 barium in MFL-FB01-041924-HM and MFL-FB01-042124-HM.

Notes:

1. Samples MFL-AM04-042424-HM and MFL-AM02-041524-HM had sample volumes below the acceptance criteria.