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

Lahaina, Maui

5/2/2024 – 5/8/2024

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 1.2 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 (May 2 -May 8), WW Pump Station #4 (May 2 -May 8), Lahaina Intermediate School (May 2 -May 8), Lahaina Boys & Girls Club (May 2 -May 8).

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. 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).

Heavy metal samples from Leialii Hawaiian Homelands on May 2, 5, 6, 7, and 8 were not collected due to a fuse failure resulting in equipment malfunction. Of the metals samples able to be collected, low levels of heavy metals were detected in ambient air samples at all other 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

Basemap: ESRI ArcGIS World Street Map

Table 1
HDOH CAB Ambient Community Monitoring and Sampling
Analytical Sampling Results by Date
Maui Wildfire, Lahaina
5/2/2024-5/8/2024

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
5/2/2024	Leialii Hawaiian Homelands (AM-01)	<0.0027																
	WW Pump Station #4 (AM-02)	<0.0027	0.000132	0.000408	0.00679	0.0000174	ND	0.00252	0.000533	0.0423	0.00133	0.0154	0.00211	0.00193	0.000255	0.00000226	0.00200	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.000111	0.000261	0.00386	0.0000187	ND	0.00199	0.000377	0.0380	0.000722	0.0100	0.00180	0.00141	0.000227	0.00000195	0.00131	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0024	0.000118	0.000359	0.00450	0.0000129	ND	0.00225	0.000402	0.0279	0.00107	0.0124	0.00119	0.00144	0.000226	0.00000211	0.00132	ND
5/3/2024	Leialii Hawaiian Homelands (AM-01)	<0.0024	0.0000765	0.000938	0.00721	0.0000281	ND	0.00565	0.00146	0.229	0.000577	0.0318	0.0132	0.00501	0.000205	0.00000196	0.00337	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.000146	0.000376	0.00535	0.0000160	ND	0.00248	0.00101	0.0383	0.00106	0.0144	0.00236	0.00203	0.000172	0.00000158	0.00157	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.000113	0.000242	0.00421	0.0000254	ND	0.00237	0.000467	0.0338	0.000626	0.0118	0.00208	0.00136	0.000179	0.00000142	0.00131	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0024	0.000103	0.000382	0.00555	0.0000195	ND	0.00289	0.000575	0.0270	0.000999	0.0174	0.00119	0.00162	0.000189	0.00000174	0.00172	ND
5/4/2024	Leialii Hawaiian Homelands (AM-01)	<0.0024	0.0000555	0.00147	0.0172	0.0000704	0.0000643	0.0134	0.00417	0.140	0.00109	0.0861	0.00609	0.0106	0.000377	0.00000424	0.00990	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.000119	0.000641	0.00585	0.0000197	ND	0.00341	0.000675	0.0488	0.00147	0.0161	0.00219	0.00214	0.000182	0.00000252	0.00192	ND
	Lahaina Intermediate School (AM-03)	<0.0027	0.0000980	0.000669	0.0148	0.000252	ND	0.0137	0.00335	0.0401	0.00172	0.0662	0.00190	0.00768	0.000478	0.00000476	0.00838	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0027	0.000119	0.000707	0.00823	0.0000352	ND	0.00509	0.00102	0.0287	0.00207	0.0289	0.00105	0.00284	0.000240	0.00000317	0.00268	ND
5/5/2024	Leialii Hawaiian Homelands (AM-01)	<0.0024																
	WW Pump Station #4 (AM-02)	<0.0024	0.0000725	0.000315	0.00347	0.0000106	ND	0.00208	0.000327	0.0512	0.000827	0.00935	0.00242	0.00133	0.000128	0.00000126	0.00111	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000818	0.000233	0.00306	0.0000191	ND	0.00215	0.000390	0.0382	0.000568	0.00839	0.00205	0.00118	0.000137	0.00000131	0.000968	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0027	0.0000893	0.000519	0.00424	0.0000106	ND	0.00248	0.000356	0.0197	0.000890	0.0101	0.00119	0.00167	0.000132	0.00000121	0.00101	ND
5/6/2024	Leialii Hawaiian Homelands (AM-01)	<0.0024																
	WW Pump Station #4 (AM-02)	<0.0024	0.0000969	0.000228	0.00417	0.00000952	ND	0.00189	0.000329	0.0514	0.000593	0.00861	0.00232	0.00138	0.000163	0.00000159	0.00102	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000610	0.000192	0.00330	0.0000156	ND	0.00190	0.000288	0.0456	0.000780	0.00711	0.00215	0.00112	0.000138	0.00000142	0.000813	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0024	0.0000927	0.000499	0.00520	0.0000193	ND	0.00379	0.000649	0.0245	0.000950	0.0168	0.00124	0.00216	0.000190	0.00000176	0.00150	ND
5/7/2024	Leialii Hawaiian Homelands (AM-01)	<0.0024																
	WW Pump Station #4 (AM-02)	<0.0024	0.0000587	0.000215	0.00322	0.00000841	ND	0.00198	0.000246	0.0428	0.000693	0.00687	0.00202	0.000810	0.000119	0.00000105	0.000660	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000779	0.000231	0.00353	0.0000204	ND	0.00284	0.000405	0.0681	0.00130	0.00962	0.00235	0.00115	0.000138	0.00000122	0.00100	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0024	0.0000498	0.000319	0.00369	0.0000137	ND	0.00288	0.000431	0.0359	0.000832	0.0126	0.00209	0.00114	0.000139	0.00000142	0.00112	ND
5/8/2024	Leialii Hawaiian Homelands (AM-01)	<0.0024																
	WW Pump Station #4 (AM-02)	<0.0024	0.0000647	0.000240	0.00413	0.0000115	ND	0.00242	0.000375	0.0407	0.000642	0.00964	0.00206	0.00147	0.000194	0.00000182	0.00143	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.000104	0.000294	0.00423	0.0000193	ND	0.00309	0.000384	0.0758	0.00190	0.00969	0.00259	0.00158	0.000197	0.00000190	0.00148	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0024	0.000146	0.00115	0.0103	0.0000332	ND	0.00547	0.00119	0.0469	0.00216	0.0432	0.00187	0.00376	0.000309	0.00000308	0.00331	ND
95% Upper Confidence Limit[2]		NA	0.000110	0.000600	0.00707	0.0000370	NA	0.00471	0.000111	0.0651	0.00128	0.0262	0.00308	0.00312	0.000230	0.00000240	0.00283	NA

Notes:

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

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

s/cc = structures per cubic centimeter

ug/m3 = micrograms per cubic meter

NA = Not Applicable

ND = Not detected at or above the laboratory reporting limit

* Laboratory data provided in nanograms per cubic meter, however data shown in Table 1 has been converted to micrograms per cubic meter so data was comparable to SSALs

Heavy Metal samples were not collected due to equipment malfunction and fuse faliure.

Table 2
HDOH CAB Ambient Community Monitoring and Sampling
Particulate Monitoring Results for PM_{10}
Maui Wildfire, Lahaina
5/2/2024 - 5/8/2024

Screening Level		**150 µg/m^3**
5/2/2024	Leialii Hawaiian Homelands (AM-01)	9.8
	WW Pump Station #4 (AM-02)	8.6
	Lahaina Intermediate School (AM-03)	11
	Lahaina Boys & Girls Club (AM-04)	6.1
5/3/2024	Leialii Hawaiian Homelands (AM-01)	15
	WW Pump Station #4 (AM-02)	8.1
	Lahaina Intermediate School (AM-03)	11
	Lahaina Boys & Girls Club (AM-04)	7.2
5/4/2024	Leialii Hawaiian Homelands (AM-01)	12
	WW Pump Station #4 (AM-02)	8.2
	Lahaina Intermediate School (AM-03)	12
	Lahaina Boys & Girls Club (AM-04)	5.9
5/5/2024	Leialii Hawaiian Homelands (AM-01)	8.5
	WW Pump Station #4 (AM-02)	8.8
	Lahaina Intermediate School (AM-03)	9.7
	Lahaina Boys & Girls Club (AM-04)	6.9
5/6/2024	Leialii Hawaiian Homelands (AM-01)	12
	WW Pump Station #4 (AM-02)	7.6
	Lahaina Intermediate School (AM-03)	6.9
	Lahaina Boys & Girls Club (AM-04)	6.3
5/7/2024	Leialii Hawaiian Homelands (AM-01)	7.0
	WW Pump Station #4 (AM-02)	7.1
	Lahaina Intermediate School (AM-03)	7.4
	Lahaina Boys & Girls Club (AM-04)	5.9
5/8/2024	Leialii Hawaiian Homelands (AM-01)	13
	WW Pump Station #4 (AM-02)	10
	Lahaina Intermediate School (AM-03)	11
	Lahaina Boys & Girls Club (AM-04)	16

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 Leialii Hawaiian Homelands (AM-01) on 5/5 and 5/6 are based on a 23 hr. TWA because of equipment maintenance.

Results for Lahaina Boys & Girls Club (AM-04) on 5/2 are based on a 22 hr. TWA because of equipment maintenance.

Table 3
Maui Wildfire - Lahaina
Meteorological Data
5/2/2024-5/8/2024

Date	Station ID	Weather Station Name	Wind Speed (mph)	Wind Direction (angle)	Temperature (°F)	Rel Humidity (%)	Baro Pressure (mBar)
5/2/2024	AM-01	Leialii Hawaiian Homelands	1.0	SE	80	60	760.2
5/2/2024	AM-02	WW Pump Station #4	1.1	SSE	79	65	762.4
5/2/2024	AM-03	Lahaina Intermediate School	1.2	SE	76	69	753.1
5/2/2024	AM-04	Lahaina Boys & Girls Club	1.2	SSW	77	67	762.2
5/3/2024	AM-01	Leialii Hawaiian Homelands	1.6	ESE	80	56	759.8
5/3/2024	AM-02	WW Pump Station #4	1.3	SSE	78	63	762.0
5/3/2024	AM-03	Lahaina Intermediate School	1.4	SE	76	64	752.7
5/3/2024	AM-04	Lahaina Boys & Girls Club	1.5	SSE	77	63	761.7
5/4/2024	AM-01	Leialii Hawaiian Homelands	1.8	ESE	80	53	760.4
5/4/2024	AM-02	WW Pump Station #4	1.2	S	80	57	762.5
5/4/2024	AM-03	Lahaina Intermediate School	1.6	SSE	77	58	753.2
5/4/2024	AM-04	Lahaina Boys & Girls Club	1.8	SSW	78	57	762.2
5/5/2024	AM-01	Leialii Hawaiian Homelands	1.0	SSE	81	55	761.0
5/5/2024	AM-02	WW Pump Station #4	1.0	S	79	61	763.2
5/5/2024	AM-03	Lahaina Intermediate School	1.3	SSE	77	63	753.9
5/5/2024	AM-04	Lahaina Boys & Girls Club	1.5	S	78	61	762.9
5/6/2024	AM-01	Leialii Hawaiian Homelands	0.9	SE	80	58	761.1
5/6/2024	AM-02	WW Pump Station #4	1.0	SSE	78	64	763.3
5/6/2024	AM-03	Lahaina Intermediate School	1.2	SE	76	66	754.0
5/6/2024	AM-04	Lahaina Boys & Girls Club	1.3	S	77	64	763.0
5/7/2024	AM-01	Leialii Hawaiian Homelands	0.9	SE	80	60	760.4
5/7/2024	AM-02	WW Pump Station #4	1.1	SSE	78	66	762.6
5/7/2024	AM-03	Lahaina Intermediate School	1.1	SE	75	69	753.3
5/7/2024	AM-04	Lahaina Boys & Girls Club	1.2	S	76	66	762.3
5/8/2024	AM-01	Leialii Hawaiian Homelands	0.9	SE	80	62	759.4
5/8/2024	AM-02	WW Pump Station #4	1.1	SSE	78	67	761.6
5/8/2024	AM-03	Lahaina Intermediate School	1.2	SE	75	71	752.3
5/8/2024	AM-04	Lahaina Boys & Girls Club	1.2	S	76	68	761.3

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:	042409359
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Fires - Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	05/08/2024 10:00 AM
Analysis Date:	05/10/2024
Report Date:	05/15/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM01-050224-AB**		**Sample Description:**	**DK797622**
EMSL Sample Number:	042409359-0001		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	6961.7
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 %:	4			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0009**		**Limit of Detection (Structures/cc):**	**0.0027**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Robyn Ray
Approved Signatory

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

EMSL Order ID: 042409359
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042409359-0001 **Customer Sample:** MFL-AM01-050224-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
B1	A7	None Detected									
B1	E6	None Detected									
B1	I7	None Detected									
B2	C3	None Detected									
B2	F8	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:	042409359
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Fires - Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	05/08/2024 10:00 AM
Analysis Date:	05/10/2024
Report Date:	05/15/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM02-050224-AB** **Sample Description: DK797626**

EMSL Sample Number:	042409359-0002		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7074.3
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):	**0.0009**		**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: 042409359
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042409359-0002 **Customer Sample:** MFL-AM02-050224-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	D8	None Detected									
B5	H6	None Detected									
B6	I5	None Detected									
B6	E3	None Detected									
B6	C6	None Detected									

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

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EMSL Order:	042409359
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Fires - Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	05/08/2024 10:00 AM
Analysis Date:	05/10/2024
Report Date:	05/15/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM03-050224-AB** **Sample Description: DK797624**

EMSL Sample Number:	042409359-0003		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7338.0
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: 042409359
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Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042409359-0003 **Customer Sample:** MFL-AM03-050224-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	C3	None Detected									
C1	D6	None Detected									
C1	I7	None Detected									
C2	J5	None Detected									
C2	F8	None Detected									

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

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Customer PO:	1207085
Project ID:	N/A

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Received Date:	05/08/2024 10:00 AM
Analysis Date:	05/10/2024
Report Date:	05/15/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM04-050224-AB**		**Sample Description:**	**DK797627**
EMSL Sample Number:	042409359-0004		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7096.5
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 %:	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

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EMSL Order ID: 042409359
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042409359-0004 **Customer Sample:** MFL-AM04-050224-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
C5	G4	None Detected									
C5	D8	None Detected									
C5	B5	None Detected									
C6	A4	None Detected									
C6	E5	None Detected									

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

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

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

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Received Date:	05/08/2024 10:00 AM
Analysis Date:	05/14/2024
Report Date:	05/15/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-050224-AB** **Sample Description: DK797607**

EMSL Sample Number:	042409359-0005		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
Chi² 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: 042409359
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042409359-0005 **Customer Sample:** MFL-FB01-050224-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
D2	A4	None Detected									
D2	D8	None Detected									
D2	G3	None Detected									
D2	J5	None Detected									
D3	I4	None Detected									
D3	E5	None Detected									
D3	A7	None Detected									
D4	J4	None Detected									
D4	H8	None Detected									
D4	B3	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:	042409359
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Fires - Lahaina**

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Fax:	N/A
Received Date:	05/08/2024 10:00 AM
Analysis Date:	05/14/2024
Report Date:	05/15/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM01-050324-AB** **Sample Description: DK797630**

EMSL Sample Number:	042409359-0006		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7195.5
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 %:	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: 042409359
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042409359-0006 **Customer Sample:** MFL-AM01-050324-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
D6	A6	None Detected									
D6	D3	None Detected									
D7	B4	None Detected									
D7	F7	None Detected									
D7	I5	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:	042409359
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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Denver, CO, 80202

Project: **Maui Fires - Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	05/08/2024 10:00 AM
Analysis Date:	05/14/2024
Report Date:	05/15/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-050324-AB**		**Sample Description:**	**DK797604**
EMSL Sample Number:	042409359-0007		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7205.0
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 %:	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

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

EMSL Order ID: 042409359
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042409359-0007 **Customer Sample:** MFL-AM02-050324-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	C6	None Detected									
E1	E3	None Detected									
E1	H4	None Detected									
E2	A5	None Detected									
E2	D8	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:	042409359
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Fires - Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	05/08/2024 10:00 AM
Analysis Date:	05/14/2024
Report Date:	05/15/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-050324-AB**	**Sample Description:**	**DK797631**
EMSL Sample Number:	042409359-0008	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L) :	7308.0
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 %:	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

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EMSL Order ID: 042409359
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042409359-0008 **Customer Sample:** MFL-AM03-050324-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	I4	None Detected									
E5	F7	None Detected									
E5	B8	None Detected									
E6	H9	None Detected									
E6	D6	None Detected									

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

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EMSL Order:	042409359
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	05/08/2024 10:00 AM
Analysis Date:	05/14/2024
Report Date:	05/15/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM04-050324-AB** **Sample Description: DK797615**

EMSL Sample Number:	042409359-0009		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7259.5
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 %:	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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EMSL Order ID: 042409359
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042409359-0009 **Customer Sample:** MFL-AM04-050324-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	I5	None Detected									
F1	E3	None Detected									
F1	C7	None Detected									
F2	D2	None Detected									
F2	G7	None Detected									

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

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EMSL Order:	042409359
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Phone:	(703) 489-2674
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Analysis Date:	05/14/2024
Report Date:	05/15/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-050324-AB** **Sample Description: DK797605**

EMSL Sample Number:	042409359-0010		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	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: 042409359
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042409359-0010 **Customer Sample:** MFL-FB01-050324-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	B6	None Detected									
F5	E9	None Detected									
F5	G3	None Detected									
F5	J4	None Detected									
F6	J7	None Detected									
F6	G3	None Detected									
F6	C4	None Detected									
F7	I8	None Detected									
F7	E4	None Detected									
F7	A6	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:	042409359
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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Project: **Maui Fires - Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
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Analysis Date:	05/14/2024
Report Date:	05/15/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM01-050424-AB**		**Sample Description:**	**DK797633**
EMSL Sample Number:	042409359-0011		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7166.6
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	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

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EMSL Order ID: 042409359
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042409359-0011 **Customer Sample:** MFL-AM01-050424-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	J4	None Detected									
G1	H9	None Detected									
G1	D5	None Detected									
G2	A7	None Detected									
G2	F6	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:	042409359
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Fires - Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	05/08/2024 10:00 AM
Analysis Date:	05/14/2024
Report Date:	05/15/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM02-050424-AB** **Sample Description: DK797601**

EMSL Sample Number:	042409359-0012		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7296.5
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

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EMSL Order ID: 042409359
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042409359-0012 **Customer Sample:** MFL-AM02-050424-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	B5	None Detected									
G5	G5	None Detected									
G5	J5	None Detected									
G6	H3	None Detected									
G6	F6	None Detected									

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

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

Attn: **Chelsea Saber**
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Phone:	(703) 489-2674
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Received Date:	05/08/2024 10:00 AM
Analysis Date:	05/14/2024
Report Date:	05/15/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM03-050424-AB** **Sample Description: DK797610**

EMSL Sample Number:	042409359-0013		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	6890.2
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 %:	8			
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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EMSL Order ID: 042409359
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042409359-0013 **Customer Sample:** MFL-AM03-050424-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
H1	J8	None Detected									
H1	F4	None Detected									
H1	A9	None Detected									
H2	H6	None Detected									
H2	D5	None Detected									

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

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Analysis Date:	05/14/2024
Report Date:	05/15/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM04-050424-AB** **Sample Description: DK797617**

EMSL Sample Number:	042409359-0014		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7049.6
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	7			
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: 042409359
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042409359-0014 **Customer Sample:** MFL-AM04-050424-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	A7	None Detected									
H5	F3	None Detected									
H5	J5	None Detected									
H6	I6	None Detected									
H6	E3	None Detected									

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

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EMSL Order:	042409359
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

Attn: **Chelsea Saber**
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Received Date:	05/08/2024 10:00 AM
Analysis Date:	05/14/2024
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ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-050424-AB** **Sample Description: DK797621**

EMSL Sample Number:	042409359-0015		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	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: 042409359
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042409359-0015 **Customer Sample:** MFL-FB01-050424-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	A3	None Detected									
I1	C8	None Detected									
I1	F6	None Detected									
I1	J9	None Detected									
I2	I7	None Detected									
I2	G4	None Detected									
I2	B8	None Detected									
I3	J7	None Detected									
I3	E7	None Detected									
I3	A7	None Detected									

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

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EMSL Order:	042409359
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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Analysis Date:	05/14/2024
Report Date:	05/15/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM01-050524-AB** **Sample Description: DK797611**

EMSL Sample Number:	042409359-0016		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7104.8
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	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

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EMSL Order ID: 042409359
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042409359-0016 **Customer Sample:** MFL-AM01-050524-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	B7	None Detected									
I5	D4	None Detected									
I5	I5	None Detected									
I6	C4	None Detected									
I6	G7	None Detected									

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

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EMSL Order:	042409359
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Fires - Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	05/08/2024 10:00 AM
Analysis Date:	05/14/2024
Report Date:	05/15/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM02-050524-AB** **Sample Description: DK797608**

EMSL Sample Number:	042409359-0017		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7289.8
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	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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EMSL Order ID: 042409359
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042409359-0017 **Customer Sample:** MFL-AM02-050524-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	B7	None Detected									
J1	E5	None Detected									
J1	J6	None Detected									
J2	D7	None Detected									
J2	E3	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:	042409359
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

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Received Date:	05/08/2024 10:00 AM
Analysis Date:	05/14/2024
Report Date:	05/15/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM03-050524-AB** **Sample Description: DK797629**

EMSL Sample Number:	042409359-0018		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7174.9
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:	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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EMSL Order ID: 042409359
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042409359-0018 **Customer Sample:** MFL-AM03-050524-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
J5	I4	None Detected									
J5	H9	None Detected									
J5	D6	None Detected									
J6	J3	None Detected									
J6	F6	None Detected									

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

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

Attn: **Chelsea Saber**
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Received Date:	05/08/2024 10:00 AM
Analysis Date:	05/14/2024
Report Date:	05/15/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM04-050524-AB**		**Sample Description:**	**DK797527**
EMSL Sample Number:	042409359-0019		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	6953.2
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 %:	7			
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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EMSL Order ID: 042409359
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042409359-0019 **Customer Sample:** MFL-AM04-050524-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
K1	J6	None Detected									
K1	E8	None Detected									
K1	B5	None Detected									
K2	C3	None Detected									
K2	F6	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:	042409359
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

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Fax:	N/A
Received Date:	05/08/2024 10:00 AM
Analysis Date:	05/14/2024
Report Date:	05/15/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-050524-AB** **Sample Description: DK797551**

EMSL Sample Number:	042409359-0020		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
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: 042409359
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042409359-0020 **Customer Sample:** MFL-FB01-050524-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
K5	I7	None Detected									
K5	G4	None Detected									
K5	D3	None Detected									
K5	B6	None Detected									
K6	J9	None Detected									
K6	E5	None Detected									
K6	A4	None Detected									
K7	I3	None Detected									
K7	G7	None Detected									
K7	A7	None Detected									

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

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EMSL Order ID: 042409359
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042409359-0021 **Customer Sample:** Lab Blank

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
A1	J7	None Detected									
A1	G3	None Detected									
A1	C5	None Detected									
A1	A2	None Detected									
A2	F7	None Detected									
A2	H9	None Detected									
A2	J3	None Detected									
A3	B2	None Detected									
A3	D4	None Detected									

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

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EMSL Order:	042409359
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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Received Date:	05/08/2024 10:00 AM
Analysis Date:	05/10/2024
Report Date:	05/15/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**Lab Blank**		**Sample Description:**	**Labblank**
EMSL Sample Number:	042409359-0021		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
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 %:	0			
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	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	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

Robyn Ray
Approved Signatory

OrderID: 042409359

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL Order Number / Lab Use Only

#042409359

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

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

Billing Information

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

Project Information

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

Turn-Around-Time (TAT)

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

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

Test Selection

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

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

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

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

Other Test (please specify)

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

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

RECEIVED
24 MAY -8 P12:11
EMSL CINNAMINSON NJ

*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-AM01-050224-AB		DK797622	6,961.685	05/02/24 1058
MFL-AM02-050224-AB		DK797626	7,074.281	05/02/24 1126
MFL-AM03-050224-AB		DK797624	7,337.973	05/02/24 1306
MFL-AM04-050224-AB		DK797627	7,096.490	05/02/24 1329
MFL-FB01-050224-AB		DK797607	0	05/02/24 ~~1329~~ 1200 LD
MFL-AM01-050324-AB		DK797630	7,195.464	05/03/24 1059
MFL-AM02-050324-AB		DK797604	7,204.955	05/03/24 1126
MFL-AM03-050324-AB		DK797631	7,308.000	05/03/24 1311

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

All samples received acceptable for analysis.

Method of Shipment: FED EX		Sample Condition Upon Receipt:	
Relinquished by: LD	Date/Time: 05/06/24 1100	Received by: FX	Date/Time: 5/8/24 10m
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.

OrderID: 042409359

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL Order Number / Lab Use Only

#042409359

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-AM04-050324-AB	DK797605	7,259.472	05/03/24 1334
MFL-FB01-050324-AB	DK797605	~~7,259~~ (LD) 0	05/03/24 ~~1334~~ (LD) 1206
MFL-AM01-050424-AB	DK797633	7,166.606	05/04/24 1107
MFL-AM02-050424-AB	DK797601	7,296.4596 LD	05/04/24 ~~1130~~ (LD) 1126
MFL-AM03-050424-AB	DK797610	6,890.214	05/04/24 1306
(LD) MFL-AM03-050424-AB			
MFL-AM04-050424-AB	DK797617	7,049.5906 LD	05/04/24 1328
MFL-FB01-050424-AB	DK797624	0	05/04/24 ~~1126~~ 1200 (LD)
MFL-AM01-050524-AB	DK797611	7,104.800	05/05/24 1101
MFL-AM02-050524-AB	DK797608	7,289.814	05/05/24 1126
MFL-AM03-050524-AB	DK797629	7,174.944	05/05/24 1311
MFL-AM04-050524-AB	DK797527	6,953.184	05/05/24 1332
MFL-FB01-~~050524-AB~~ (LD)	DK797551	0	05/05/24 1200

RECEIVED
EMSL
CINNAMINSON, NJ
24 MAY -8 PM 12:11

Method of Shipment: FED EX		Sample Condition Upon Receipt:	
Relinquished by:	Date/Time: 05/06/24 1100	Received by: FX	Date/Time: 5/8/24
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.)

Stage 1 Data Verification Checklist – Asbestos

HDOH CAB – Ambient Community Air Sampling – Lahaina

Task Order No. 23141

Reviewed by:
Kierra Johnson 05/16/2024 and Shanna Vasser 5/17/2024
Laboratory: EMSL Analytical, Inc. – North Cinnaminson, NJ
Collection date(s): 05/02/2024 – 05/05/2024
Report No: 42409359

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

Discrepancies: None.

Notes: None.

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

EMSL Order:	042409694
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Fires - Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	05/13/2024 09:15 AM
Analysis Date:	05/15/2024
Report Date:	05/17/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM01-050624-AB**		**Sample Description:**	**DK797531**
EMSL Sample Number:	042409694-0001		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7079.0
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 %:	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: 042409694
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042409694-0001 **Customer Sample:** MFL-AM01-050624-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
A5	J7	None Detected									
A5	E3	None Detected									
A5	A4	None Detected									
A6	H3	None Detected									
A6	D6	None Detected									

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

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

EMSL Order:	042409694
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Fires - Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	05/13/2024 09:15 AM
Analysis Date:	05/15/2024
Report Date:	05/17/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-050624-AB**		**Sample Description:**	**DK797528**
EMSL Sample Number:	042409694-0002		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7250.6
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	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

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: 042409694
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042409694-0002 **Customer Sample:** MFL-AM02-050624-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
B1	C5	None Detected									
B1	G2	None Detected									
B2	B5	None Detected									
B2	E5	None Detected									
B2	J7	None Detected									

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

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

EMSL Order:	042409694
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Fires - Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	05/13/2024 09:15 AM
Analysis Date:	05/15/2024
Report Date:	05/17/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-050624-AB**		**Sample Description:**	**DK797552**
EMSL Sample Number:	042409694-0003		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7219.2
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

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: 042409694
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042409694-0003 **Customer Sample:** MFL-AM03-050624-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	I6	None Detected									
B5	F3	None Detected									
B5	A4	None Detected									
B6	H2	None Detected									
B6	D7	None Detected									

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

EMSL Analytical, Inc.
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EMSL Order:	042409694
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Fires - Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	05/13/2024 09:15 AM
Analysis Date:	05/15/2024
Report Date:	05/17/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM04-050624-AB**		**Sample Description:**	**DK797554**
EMSL Sample Number:	042409694-0004		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7196.5
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

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Approved Signatory

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EMSL Order ID: 042409694
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042409694-0004 **Customer Sample:** MFL-AM04-050624-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	H5	None Detected									
C1	E2	None Detected									
C1	A7	None Detected									
C2	B4	None Detected									
C2	G6	None Detected									

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

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EMSL Order:	042409694
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Fires - Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	05/13/2024 09:15 AM
Analysis Date:	05/15/2024
Report Date:	05/17/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-FB01-050624-AB**		**Sample Description:**	**DK797521**
EMSL Sample Number:	042409694-0005		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:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	0			
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: 042409694
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042409694-0005 **Customer Sample:** MFL-FB01-050624-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
C5	A8	None Detected									
C5	E3	None Detected									
C5	H8	None Detected									
C5	J6	None Detected									
C6	I4	None Detected									
C6	G5	None Detected									
C6	B6	None Detected									
C7	H9	None Detected									
C7	F7	None Detected									
C7	C5	None Detected									

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

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EMSL Order:	042409694
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Fires - Lahaina**

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Received Date:	05/13/2024 09:15 AM
Analysis Date:	05/15/2024
Report Date:	05/17/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM01-050724-AB**		**Sample Description:**	**DK797549**
EMSL Sample Number:	042409694-0006		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7205.0
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 %:	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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EMSL Order ID: 042409694
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042409694-0006 **Customer Sample:** MFL-AM01-050724-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
D1	D7	None Detected									
D1	G8	None Detected									
D2	A4	None Detected									
D2	E8	None Detected									
D2	H5	None Detected									

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

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EMSL Order:	042409694
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Fires - Lahaina**

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Received Date:	05/13/2024 09:15 AM
Analysis Date:	05/15/2024
Report Date:	05/17/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-050724-AB**		**Sample Description:**	**DK797543**
EMSL Sample Number:	042409694-0007		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7208.9
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:	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:	**042409694**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042409694-0007 **Customer Sample:** MFL-AM02-050724-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	A5	None Detected									
D5	E7	None Detected									
D5	H4	None Detected									
D6	I6	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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Project: **Maui Fires - Lahaina**

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Analysis Date:	05/15/2024
Report Date:	05/17/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM03-050724-AB** **Sample Description: DK797536**

EMSL Sample Number:	042409694-0008		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7338.4
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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EMSL Order ID: 042409694
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042409694-0008 **Customer Sample:** MFL-AM03-050724-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	D8	None Detected									
E1	G6	None Detected									
E1	J3	None Detected									
E2	H8	None Detected									
E2	D4	None Detected									

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

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EMSL Order:	042409694
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Fires - Lahaina**

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Fax:	N/A
Received Date:	05/13/2024 09:15 AM
Analysis Date:	05/15/2024
Report Date:	05/17/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM04-050724-AB** **Sample Description: DK797586**

EMSL Sample Number:	042409694-0009		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7195.4
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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EMSL Order ID: 042409694
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042409694-0009 **Customer Sample:** MFL-AM04-050724-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	A6	None Detected									
E5	E4	None Detected									
E5	H7	None Detected									
E6	I5	None Detected									
E6	F6	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:	042409694
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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Received Date:	05/13/2024 09:15 AM
Analysis Date:	05/16/2024
Report Date:	05/17/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-050724-AB** **Sample Description: DK797534**

EMSL Sample Number:	042409694-0010		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	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: 042409694
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042409694-0010 **Customer Sample:** MFL-FB01-050724-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	J9	None Detected									
F1	J4	None Detected									
F1	F4	None Detected									
F1	C6	None Detected									
F2	D5	None Detected									
F2	G8	None Detected									
F2	J3	None Detected									
F3	B5	None Detected									
F3	E7	None Detected									
F3	I6	None Detected									

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

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Customer PO:	1207085
Project ID:	N/A

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Received Date:	05/13/2024 09:15 AM
Analysis Date:	05/16/2024
Report Date:	05/17/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM01-050824-AB** **Sample Description: DK797520**

EMSL Sample Number:	042409694-0011		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7195.3
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 %:	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

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EMSL Order ID: 042409694
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042409694-0011 **Customer Sample:** MFL-AM01-050824-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					
F8	J7	None Detected									
F8	E5	None Detected									
F8	A4	None Detected									
F6	C8	None Detected									
F6	G7	None Detected									

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

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EMSL Order:	042409694
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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Analysis Date:	05/16/2024
Report Date:	05/17/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-050824-AB**		**Sample Description:**	**DK797546**
EMSL Sample Number:	042409694-0012		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7283.8
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	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

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EMSL Order ID: 042409694
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042409694-0012 **Customer Sample:** MFL-AM02-050824-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
G1	I4	None Detected									
G1	E8	None Detected									
G1	A5	None Detected									
G2	D6	None Detected									
G2	H7	None Detected									

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

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EMSL Order:	042409694
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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Analysis Date:	05/17/2024
Report Date:	05/17/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-050824-AB**		**Sample Description:**	**DK797530**
EMSL Sample Number:	042409694-0013		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7183.7
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
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: 042409694
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042409694-0013 **Customer Sample:** MFL-AM03-050824-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	A5	None Detected									
G5	F8	None Detected									
G5	J4	None Detected									
G6	H8	None Detected									
G6	D6	None Detected									

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

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

EMSL Order:	042409694
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Fires - Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	05/13/2024 09:15 AM
Analysis Date:	05/17/2024
Report Date:	05/17/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM04-050824-AB** **Sample Description: DK797550**

EMSL Sample Number:	042409694-0014		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7230.0
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 %:	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: 042409694
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042409694-0014 **Customer Sample:** MFL-AM04-050824-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
H1	H7	None Detected									
H1	D3	None Detected									
H1	B6	None Detected									
H2	J6	None Detected									
H2	F4	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:	042409694
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Fires - Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	05/13/2024 09:15 AM
Analysis Date:	05/17/2024
Report Date:	05/17/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-050824-AB** **Sample Description:** **DK797539**

EMSL Sample Number:	042409694-0015		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.001			

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

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Robyn Ray
Approved Signatory

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

EMSL Order ID: 042409694
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042409694-0015 **Customer Sample:** MFL-FB01-050824-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	J5	None Detected									
H5	G3	None Detected									
H5	C5	None Detected									
H5	C8	None Detected									
H7	A2	None Detected									
H7	D6	None Detected									
H7	F9	None Detected									
H8	H3	None Detected									
H8	E7	None Detected									
H8	A6	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:	042409694
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Fires - Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	05/13/2024 09:15 AM
Analysis Date:	05/15/2024
Report Date:	05/17/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**Lab Blank**		**Sample Description:**	**Lab Blank**
EMSL Sample Number:	042409694-0016		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**N/A**		**Limit of Detection (Structures/cc):**	**N/A**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Robyn Ray
Approved Signatory

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

EMSL Order ID: 042409694
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042409694-0016 **Customer Sample:** Lab Blank

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
A1	I5	None Detected									
A1	G8	None Detected									
A1	D4	None Detected									
A1	A7	None Detected									
A2	C8	None Detected									
A2	F7	None Detected									
A2	J5	None Detected									
A3	A3	None Detected									
A3	E4	None Detected									
A3	J5	None Detected									

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

OrderID: 042409694

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

EMSL Order Number / Lab Use Only

#042409694

RECEIVED EMSL CINNAMINSON, N.J. 2024 MAY 13 A 11:32

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

Turn-Around-Time (TAT)

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

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

Test Selection

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

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

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

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

Other Test (please specify)

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

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

*Please call with your project-specific requirements.

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

Sample Number	Sample Location / Description	Volume, Area or Homogeneous Area	Date / Time Sampled (Air Monitoring Only)
MFL-AM01-050624-AB	DK797531	7,079.020	05/06/24 1059
MFL-AM02-050624-AB	DK797528	7,250.591	05/06/24 1120
MFL-AM03-050624-AB	DK797552	7,219.183	05/06/24 1307
MFL-AM04-050624-AB	DK797554	7,196.499	05/06/24 1330
MFL-FB01-050624-AB	DK797521	0	05/06/24 1200
MFL-AM01-050724-AB	DK797549	7,204.955	05/07/24 1104
MFL-AM02-050724-AB	DK797543	7,208.866	05/07/24 1123
MFL-AM03-050724-AB	DK797536	7,338.427	05/07/24 1305

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

All samples received acceptable for analysis.

Method of Shipment: Fed Ex

Relinquished by:	Date/Time: 05/06/24 1100	Sample Condition Upon Receipt: Received By: FX	Date/Time: 5/13/24 915am
Relinquished by:	Date/Time:	Received by:	Date/Time

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

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

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

Page 1 of 2

OrderID: 042409694

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL Order Number / Lab Use Only

#042409694

RECEIVED EMSL CINNAMINSON, N.J. 2024 MAY 13 A 11:32

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-AM04-050724-AB	DK797586	7,195.380	05/07/24 1328
MFL-FB01-050724-AB	DK797534	ø	05/07/24 1200
MFL-AM01-050824-AB	DK797520	7,195.346	05/08/24 1105
MFL-AM02-050824-AB	DK797546	7,283.796	05/08/24 1123
MFL-AM03-050824-AB	DK797530	7,183.673	05/08/24 1308
MFL-AM04-050824-AB	DK797550	7,229.968	05/08/24 1331
MFL-FB01-050824-AB	DK797539	ø	05/08/24 1200

Method of Shipment: FEDEX		Sample Condition Upon Receipt:	
Relinquished by:	Date/Time: 05/09/24 1100	Received by: FX	Date/Time: 5/13/24 915am
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 05/20/2024 and Shanna Vasse 05/21/2024
Laboratory: EMSL Analytical, Inc. – North Cinnaminson, NJ
Collection date(s): 05/06/2024 – 05/08/2024
Report No: 42409694

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

Discrepancies: None.

Notes: None.

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

May 21, 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 05/13/24 14:02.

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

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

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

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

Sincerely,

Julie Swift
Program Manager
julie.swift@erg.com

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 05/21/24 15:55
SUBMITTED: 05/13/24
AQS SITE CODE:
SITE CODE: Lahaina fires

ANALYTICAL REPORT FOR SAMPLES

SampleName	LabNumber	Matrix	Sampled	Received
MFL-AM02-050224-HM	4051340-02	Air	05/02/24 23:59	05/13/24 14:02
MFL-AM03-050224-HM	4051340-03	Air	05/02/24 23:59	05/13/24 14:02
MFL-AM04-050224-HM	4051340-04	Air	05/02/24 23:59	05/13/24 14:02
MFL-AM01-050324-HM	4051340-05	Air	05/03/24 23:59	05/13/24 14:02
MFL-AM02-050324-HM	4051340-06	Air	05/03/24 23:59	05/13/24 14:02
MFL-AM03-050324-HM	4051340-07	Air	05/03/24 23:59	05/13/24 14:02
MFL-AM04-050324-HM	4051340-08	Air	05/03/24 23:59	05/13/24 14:02
MFL-FB01-050324-HM	4051340-09	Air	05/03/24 00:00	05/13/24 14:02
MFL-AM01-050424-HM	4051340-10	Air	05/04/24 23:59	05/13/24 14:02
MFL-AM02-050424-HM	4051340-11	Air	05/04/24 23:59	05/13/24 14:02
MFL-AM03-050424-HM	4051340-12	Air	05/04/24 23:59	05/13/24 14:02
MFL-AM04-050424-HM	4051340-13	Air	05/04/24 23:59	05/13/24 14:02
MFL-AM02-050524-HM	4051340-15	Air	05/05/24 23:59	05/13/24 14:02
MFL-AM03-050524-HM/MS/I	4051340-16	Air	05/05/24 23:59	05/13/24 14:02
MFL-AM04-050524-HM	4051340-17	Air	05/05/24 23:59	05/13/24 14:02
MFL-FB01-050524-HM	4051340-18	Air	05/05/24 00:00	05/13/24 14:02
MFL-AM02-050624-HM	4051340-19	Air	05/06/24 23:59	05/13/24 14:02
MFL-AM03-050624-HM	4051340-20	Air	05/06/24 23:59	05/13/24 14:02
MFL-AM04-050624-HM	4051340-21	Air	05/06/24 23:59	05/13/24 14:02
MFL-AM02-050724-HM	4051340-22	Air	05/07/24 23:59	05/13/24 14:02
MFL-AM03-050724-HM	4051340-23	Air	05/07/24 23:59	05/13/24 14:02

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AQS SITE CODE:
SITE CODE: Lahaina fires

MFL-AM04-050724-HM	4051340-24	Air	05/07/24 23:59	05/13/24 14:02
MFL-FB01-050724-HM	4051340-25	Air	05/07/24 00:00	05/13/24 14:02
MFL-AM02-050824-HM	4051340-26	Air	05/08/24 23:59	05/13/24 14:02
MFL-AM03-050824-HM	4051340-27	Air	05/08/24 23:59	05/13/24 14:02
MFL-AM04-050824-HM	4051340-28	Air	05/08/24 23:59	05/13/24 14:02

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FILE #: 4205.00.003.001
REPORTED: 05/21/24 15:55
SUBMITTED: 05/13/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-050224-HM
Matrix: Air
Lab ID: 4051340-02
Sample Volume: 2003.91 m³
Filter ID:
Sampled: 05/02/24 23:59
Received: 05/13/24 14:02
Analysis Date: 05/14/24 21:40

Comments: Q8532998 - 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**	**0.132**	SL	**0.0313**
Arsenic	**7440-38-2**	**0.408**		**0.00761**
Barium	**7440-39-3**	**6.79**		**0.869**
Beryllium	**7440-41-7**	**0.0174**		**0.00260**
Cadmium	7440-43-9	0.0287	U	0.0602
Chromium	**7440-47-3**	**2.52**		**1.79**
Cobalt	**7440-48-4**	**0.533**		**0.0354**
Copper	**7440-50-8**	**42.3**		**2.14**
Lead	**7439-92-1**	**1.33**		**0.174**
Manganese	**7439-96-5**	**15.4**		**1.53**
Molybdenum	**7439-98-7**	**2.11**		**0.291**
Nickel	**7440-02-0**	**1.93**		**0.529**
Selenium	**7782-49-2**	**0.255**		**0.00727**
Thallium	**7440-28-0**	**0.00226**		**4.78E-4**
Vanadium	**7440-62-2**	**2.00**		**0.0430**
Zinc	7440-66-6	48.2	U	62.4

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FILE #: 4205.00.003.001
REPORTED: 05/21/24 15:55
SUBMITTED: 05/13/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-050224-HM **Lab ID:** 4051340-03 **Sampled:** 05/02/24 23:59
Matrix: Air **Sample Volume:** 1964.98 m³ **Received:** 05/13/24 14:02
Filter ID: **Analysis Date:** 05/15/24 00:29

Comments: Q8532995 - Received in good condition - nonhomogenous

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.111**	SL	**0.0320**
Arsenic	**7440-38-2**	**0.261**		**0.00776**
Barium	**7440-39-3**	**3.86**		**0.886**
Beryllium	**7440-41-7**	**0.0187**		**0.00265**
Cadmium	7440-43-9	0.0138	U	0.0614
Chromium	**7440-47-3**	**1.99**		**1.83**
Cobalt	**7440-48-4**	**0.377**		**0.0361**
Copper	**7440-50-8**	**38.0**		**2.18**
Lead	**7439-92-1**	**0.722**		**0.177**
Manganese	**7439-96-5**	**10.0**		**1.56**
Molybdenum	**7439-98-7**	**1.80**		**0.297**
Nickel	**7440-02-0**	**1.41**		**0.540**
Selenium	**7782-49-2**	**0.227**		**0.00742**
Thallium	**7440-28-0**	**0.00195**		**4.88E-4**
Vanadium	**7440-62-2**	**1.31**		**0.0438**
Zinc	7440-66-6	35.8	U	63.6

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FILE #: 4205.00.003.001
REPORTED: 05/21/24 15:55
SUBMITTED: 05/13/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-050224-HM
Matrix: Air
Lab ID: 4051340-04
Sample Volume: 1709.421 m³
Filter ID:
Sampled: 05/02/24 23:59
Received: 05/13/24 14:02
Analysis Date: 05/15/24 00:46

Comments: Q8532994 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.118**	SL	**0.0367**
Arsenic	**7440-38-2**	**0.359**		**0.00892**
Barium	**7440-39-3**	**4.50**		**1.02**
Beryllium	**7440-41-7**	**0.0129**		**0.00305**
Cadmium	7440-43-9	0.0630	U	0.0705
Chromium	**7440-47-3**	**2.25**		**2.10**
Cobalt	**7440-48-4**	**0.402**		**0.0415**
Copper	**7440-50-8**	**27.9**		**2.50**
Lead	**7439-92-1**	**1.07**		**0.204**
Manganese	**7439-96-5**	**12.4**		**1.80**
Molybdenum	**7439-98-7**	**1.19**		**0.342**
Nickel	**7440-02-0**	**1.44**		**0.621**
Selenium	**7782-49-2**	**0.226**		**0.00853**
Thallium	**7440-28-0**	**0.00211**		**5.61E-4**
Vanadium	**7440-62-2**	**1.32**		**0.0503**
Zinc	7440-66-6	37.6	U	73.1

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FILE #: 4205.00.003.001
REPORTED: 05/21/24 15:55
SUBMITTED: 05/13/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-050324-HM
Matrix: Air
Lab ID: 4051340-05
Sample Volume: 1932.131 m³
Filter ID:
Sampled: 05/03/24 23:59
Received: 05/13/24 14:02
Analysis Date: 05/15/24 01:01

Comments: Q8532991 - 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**	**0.0765**	SL	**0.0325**
Arsenic	**7440-38-2**	**0.938**		**0.00789**
Barium	**7440-39-3**	**7.21**		**0.901**
Beryllium	**7440-41-7**	**0.0281**		**0.00269**
Cadmium	7440-43-9	0.0184	U	0.0624
Chromium	**7440-47-3**	**5.65**		**1.86**
Cobalt	**7440-48-4**	**1.46**		**0.0367**
Copper	**7440-50-8**	**229**		**2.21**
Lead	**7439-92-1**	**0.577**		**0.180**
Manganese	**7439-96-5**	**31.8**		**1.59**
Molybdenum	**7439-98-7**	**13.2**		**0.302**
Nickel	**7440-02-0**	**5.01**		**0.549**
Selenium	**7782-49-2**	**0.205**		**0.00754**
Thallium	**7440-28-0**	**0.00196**		**4.96E-4**
Vanadium	**7440-62-2**	**3.37**		**0.0445**
Zinc	7440-66-6	38.4	U	64.7

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FILE #: 4205.00.003.001
REPORTED: 05/21/24 15:55
SUBMITTED: 05/13/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-050324-HM
Matrix: Air
Lab ID: 4051340-06
Sample Volume: 2020.827 m³
Filter ID:
Sampled: 05/03/24 23:59
Received: 05/13/24 14:02
Analysis Date: 05/15/24 01:33

Comments: Q8532990 - Received in good condition - refold

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.146**	SL	**0.0311**
Arsenic	**7440-38-2**	**0.376**		**0.00754**
Barium	**7440-39-3**	**5.35**		**0.861**
Beryllium	**7440-41-7**	**0.0160**		**0.00258**
Cadmium	7440-43-9	0.0146	U	0.0597
Chromium	**7440-47-3**	**2.48**		**1.78**
Cobalt	**7440-48-4**	**1.01**		**0.0351**
Copper	**7440-50-8**	**38.3**		**2.12**
Lead	**7439-92-1**	**1.06**		**0.172**
Manganese	**7439-96-5**	**14.4**		**1.52**
Molybdenum	**7439-98-7**	**2.36**		**0.289**
Nickel	**7440-02-0**	**2.03**		**0.525**
Selenium	**7782-49-2**	**0.172**		**0.00721**
Thallium	**7440-28-0**	**0.00158**		**4.74E-4**
Vanadium	**7440-62-2**	**1.57**		**0.0426**
Zinc	7440-66-6	34.1	U	61.8

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FILE #: 4205.00.003.001
REPORTED: 05/21/24 15:55
SUBMITTED: 05/13/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-050324-HM
Matrix: Air
Lab ID: 4051340-07
Sample Volume: 1986.421 m³
Filter ID:
Sampled: 05/03/24 23:59
Received: 05/13/24 14:02
Analysis Date: 05/15/24 01:47

Comments: Q8532989 - Received in good condition - nonhomogenous

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.113**	SL	**0.0316**
Arsenic	**7440-38-2**	**0.242**		**0.00767**
Barium	**7440-39-3**	**4.21**		**0.876**
Beryllium	**7440-41-7**	**0.0254**		**0.00262**
Cadmium	7440-43-9	0.0104	U	0.0607
Chromium	**7440-47-3**	**2.37**		**1.81**
Cobalt	**7440-48-4**	**0.467**		**0.0357**
Copper	**7440-50-8**	**33.8**		**2.15**
Lead	**7439-92-1**	**0.626**		**0.175**
Manganese	**7439-96-5**	**11.8**		**1.55**
Molybdenum	**7439-98-7**	**2.08**		**0.294**
Nickel	**7440-02-0**	**1.36**		**0.534**
Selenium	**7782-49-2**	**0.179**		**0.00734**
Thallium	**7440-28-0**	**0.00142**		**4.82E-4**
Vanadium	**7440-62-2**	**1.31**		**0.0433**
Zinc	7440-66-6	33.4	U	62.9

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SUBMITTED: 05/13/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-050324-HM
Matrix: Air
Lab ID: 4051340-08
Sample Volume: 1699.436 m³
Filter ID:
Sampled: 05/03/24 23:59
Received: 05/13/24 14:02
Analysis Date: 05/15/24 02:01

Comments: Q8532988 - Received in good condition - nonhomogenous

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.103**	SL	**0.0370**
Arsenic	**7440-38-2**	**0.382**		**0.00897**
Barium	**7440-39-3**	**5.55**		**1.02**
Beryllium	**7440-41-7**	**0.0195**		**0.00306**
Cadmium	7440-43-9	0.0140	U	0.0709
Chromium	**7440-47-3**	**2.89**		**2.12**
Cobalt	**7440-48-4**	**0.575**		**0.0417**
Copper	**7440-50-8**	**27.0**		**2.52**
Lead	**7439-92-1**	**0.999**		**0.205**
Manganese	**7439-96-5**	**17.4**		**1.81**
Molybdenum	**7439-98-7**	**1.19**		**0.344**
Nickel	**7440-02-0**	**1.62**		**0.624**
Selenium	**7782-49-2**	**0.189**		**0.00858**
Thallium	**7440-28-0**	**0.00174**		**5.64E-4**
Vanadium	**7440-62-2**	**1.72**		**0.0506**
Zinc	7440-66-6	34.5	U	73.5

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FILE #: 4205.00.003.001
REPORTED: 05/21/24 15:55
SUBMITTED: 05/13/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-FB01-050324-HM
Matrix: Air
Lab ID: 4051340-09
Sample Volume: 1932.131 m³
Filter ID:
Sampled: 05/03/24 00:00
Received: 05/13/24 14:02
Analysis Date: 05/15/24 02:15

Comments: Q8532967 - 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	0.0186	SL, U	0.0325
Arsenic	7440-38-2	0.00485	U	0.00789
Barium	**7440-39-3**	**1.26**	FB-01	**0.901**
Beryllium	7440-41-7	5.69E-4	U	0.00269
Cadmium	7440-43-9	4.51E-4	U	0.0624
Chromium	7440-47-3	0.852	U	1.86
Cobalt	7440-48-4	0.0107	U	0.0367
Copper	7440-50-8	0.401	U	2.21
Lead	7439-92-1	0.0274	U	0.180
Manganese	7439-96-5	0.171	U	1.59
Molybdenum	7439-98-7	0.138	U	0.302
Nickel	7440-02-0	0.411	U	0.549
Selenium	7782-49-2	ND	U	0.00754
Thallium	7440-28-0	1.24E-4	U	4.96E-4
Vanadium	7440-62-2	0.0190	U	0.0445
Zinc	7440-66-6	21.6	U	64.7

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REPORTED: 05/21/24 15:55
SUBMITTED: 05/13/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-050424-HM
Matrix: Air
Lab ID: 4051340-10
Sample Volume: 2087.801 m³
Filter ID:
Sampled: 05/04/24 23:59
Received: 05/13/24 14:02
Analysis Date: 05/15/24 02:28

Comments: Q8532986 - Received in good condition - nonhomogenous

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0555**	SL	**0.0301**
Arsenic	**7440-38-2**	**1.47**		**0.00730**
Barium	**7440-39-3**	**17.2**		**0.834**
Beryllium	**7440-41-7**	**0.0704**		**0.00249**
Cadmium	**7440-43-9**	**0.0643**		**0.0577**
Chromium	**7440-47-3**	**13.4**		**1.72**
Cobalt	**7440-48-4**	**4.17**		**0.0340**
Copper	**7440-50-8**	**140**		**2.05**
Lead	**7439-92-1**	**1.09**		**0.167**
Manganese	**7439-96-5**	**86.1**		**1.47**
Molybdenum	**7439-98-7**	**6.09**		**0.280**
Nickel	**7440-02-0**	**10.6**		**0.508**
Selenium	**7782-49-2**	**0.377**		**0.00698**
Thallium	**7440-28-0**	**0.00424**		**4.59E-4**
Zinc	7440-66-6	28.7	U	59.8

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FILE #: 4205.00.003.001
REPORTED: 05/21/24 15:55
SUBMITTED: 05/13/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-050424-HM
Matrix: Air
Lab ID: 4051340-10RE1
Sample Volume: 2087.801 m³
Filter ID:
Sampled: 05/04/24 23:59
Received: 05/13/24 14:02
Analysis Date: 05/18/24 04:13

Comments: Q8532986 - Received in good condition - nonhomogenous

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Vanadium	**7440-62-2**	**9.90**	D	**0.0824**

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FILE #: 4205.00.003.001
REPORTED: 05/21/24 15:55
SUBMITTED: 05/13/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-050424-HM
Matrix: Air
Lab ID: 4051340-11
Sample Volume: 1980.225 m³
Filter ID:
Sampled: 05/04/24 23:59
Received: 05/13/24 14:02
Analysis Date: 05/15/24 02:46

Comments: Q8532985 - 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**	**0.119**	SL	**0.0317**
Arsenic	**7440-38-2**	**0.641**		**0.00770**
Barium	**7440-39-3**	**5.85**		**0.879**
Beryllium	**7440-41-7**	**0.0197**		**0.00263**
Cadmium	7440-43-9	0.0464	U	0.0609
Chromium	**7440-47-3**	**3.41**		**1.82**
Cobalt	**7440-48-4**	**0.675**		**0.0358**
Copper	**7440-50-8**	**48.8**		**2.16**
Lead	**7439-92-1**	**1.47**		**0.176**
Manganese	**7439-96-5**	**16.1**		**1.55**
Molybdenum	**7439-98-7**	**2.19**		**0.295**
Nickel	**7440-02-0**	**2.14**		**0.536**
Selenium	**7782-49-2**	**0.182**		**0.00736**
Thallium	**7440-28-0**	**0.00252**		**4.84E-4**
Vanadium	**7440-62-2**	**1.92**		**0.0435**
Zinc	7440-66-6	34.6	U	63.1

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 05/21/24 15:55
SUBMITTED: 05/13/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-050424-HM
Matrix: Air
Lab ID: 4051340-12
Sample Volume: 1905.217 m³
Filter ID:
Sampled: 05/04/24 23:59
Received: 05/13/24 14:02
Analysis Date: 05/15/24 03:53

Comments: Q8532984 - 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	**0.0330**
Arsenic	**7440-38-2**	**0.669**		**0.00800**
Barium	**7440-39-3**	**14.8**		**0.914**
Beryllium	**7440-41-7**	**0.252**		**0.00273**
Cadmium	7440-43-9	0.0322	U	0.0633
Chromium	**7440-47-3**	**13.7**		**1.89**
Cobalt	**7440-48-4**	**3.35**		**0.0372**
Copper	**7440-50-8**	**40.1**		**2.25**
Lead	**7439-92-1**	**1.72**		**0.183**
Manganese	**7439-96-5**	**66.2**		**1.61**
Molybdenum	**7439-98-7**	**1.90**		**0.307**
Nickel	**7440-02-0**	**7.68**		**0.557**
Selenium	**7782-49-2**	**0.478**	LL, QB-04	**0.00765**
Thallium	**7440-28-0**	**0.00476**		**5.03E-4**
Vanadium	**7440-62-2**	**8.38**		**0.0452**
Zinc	7440-66-6	36.2	U	65.6

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 05/21/24 15:55
SUBMITTED: 05/13/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-050424-HM
Matrix: Air
Lab ID: 4051340-13
Sample Volume: 1709.649 m³
Filter ID:
Sampled: 05/04/24 23:59
Received: 05/13/24 14:02
Analysis Date: 05/15/24 04:10

Comments: Q8532968 - Received in good condition - nonhomogenous

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.119**	SL	**0.0367**
Arsenic	**7440-38-2**	**0.707**		**0.00892**
Barium	**7440-39-3**	**8.23**		**1.02**
Beryllium	**7440-41-7**	**0.0352**		**0.00305**
Cadmium	7440-43-9	0.0458	U	0.0705
Chromium	**7440-47-3**	**5.09**		**2.10**
Cobalt	**7440-48-4**	**1.02**		**0.0415**
Copper	**7440-50-8**	**28.7**		**2.50**
Lead	**7439-92-1**	**2.07**		**0.204**
Manganese	**7439-96-5**	**28.9**		**1.80**
Molybdenum	**7439-98-7**	**1.05**		**0.342**
Nickel	**7440-02-0**	**2.84**		**0.620**
Selenium	**7782-49-2**	**0.240**	LL, QB-04	**0.00853**
Thallium	**7440-28-0**	**0.00317**		**5.61E-4**
Vanadium	**7440-62-2**	**2.68**		**0.0503**
Zinc	7440-66-6	46.4	U	73.1

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 05/21/24 15:55
SUBMITTED: 05/13/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-050524-HM
Matrix: Air
Lab ID: 4051340-15
Sample Volume: 2019.136 m³
Filter ID:
Sampled: 05/05/24 23:59
Received: 05/13/24 14:02
Analysis Date: 05/15/24 04:27

Comments: Q8532982 - 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**	**0.0725**	SL	**0.0311**
Arsenic	**7440-38-2**	**0.315**		**0.00755**
Barium	**7440-39-3**	**3.47**		**0.862**
Beryllium	**7440-41-7**	**0.0106**		**0.00258**
Cadmium	7440-43-9	0.0201	U	0.0597
Chromium	**7440-47-3**	**2.08**		**1.78**
Cobalt	**7440-48-4**	**0.327**		**0.0351**
Copper	**7440-50-8**	**51.2**		**2.12**
Lead	**7439-92-1**	**0.827**		**0.172**
Manganese	**7439-96-5**	**9.35**		**1.52**
Molybdenum	**7439-98-7**	**2.42**		**0.289**
Nickel	**7440-02-0**	**1.33**		**0.525**
Selenium	**7782-49-2**	**0.128**	LL, QB-04	**0.00722**
Thallium	**7440-28-0**	**0.00126**		**4.75E-4**
Vanadium	**7440-62-2**	**1.11**		**0.0426**
Zinc	7440-66-6	20.2	U	61.9

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 05/21/24 15:55
SUBMITTED: 05/13/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-050524-HM/MS/MS **Lab ID:** 4051340-16 **Sampled:** 05/05/24 23:59
Matrix: Air **Sample Volume:** 1979.825 m³ **Received:** 05/13/24 14:02
Filter ID: **Analysis Date:** 05/14/24 17:50

Comments: Q8532980 - Received in good condition - nonhomogenous, refold

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0818**	SL	**0.0317**
Arsenic	**7440-38-2**	**0.233**		**0.00770**
Barium	**7440-39-3**	**3.06**		**0.879**
Beryllium	**7440-41-7**	**0.0191**		**0.00263**
Cadmium	7440-43-9	0.0128	U	0.0609
Chromium	**7440-47-3**	**2.15**		**1.82**
Cobalt	**7440-48-4**	**0.390**		**0.0358**
Copper	**7440-50-8**	**38.2**		**2.16**
Lead	**7439-92-1**	**0.568**		**0.176**
Manganese	**7439-96-5**	**8.39**		**1.55**
Molybdenum	**7439-98-7**	**2.05**		**0.295**
Nickel	**7440-02-0**	**1.18**		**0.536**
Selenium	**7782-49-2**	**0.137**	LL, QB-04	**0.00736**
Thallium	**7440-28-0**	**0.00131**		**4.84E-4**
Vanadium	**7440-62-2**	**0.968**		**0.0435**
Zinc	7440-66-6	23.1	U	63.1

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 05/21/24 15:55
SUBMITTED: 05/13/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-050524-HM
Matrix: Air
Lab ID: 4051340-17
Sample Volume: 1817.836 m³
Filter ID:
Sampled: 05/05/24 23:59
Received: 05/13/24 14:02
Analysis Date: 05/15/24 04:42

Comments: Q8532978 - 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**	**0.0893**	SL	**0.0345**
Arsenic	**7440-38-2**	**0.519**		**0.00839**
Barium	**7440-39-3**	**4.24**		**0.958**
Beryllium	**7440-41-7**	**0.0106**		**0.00286**
Cadmium	7440-43-9	0.0153	U	0.0663
Chromium	**7440-47-3**	**2.48**		**1.98**
Cobalt	**7440-48-4**	**0.356**		**0.0390**
Copper	**7440-50-8**	**19.7**		**2.35**
Lead	**7439-92-1**	**0.890**		**0.192**
Manganese	**7439-96-5**	**10.1**		**1.69**
Molybdenum	**7439-98-7**	**1.19**		**0.321**
Nickel	**7440-02-0**	**1.67**		**0.584**
Selenium	**7782-49-2**	**0.132**	LL, QB-04	**0.00802**
Thallium	**7440-28-0**	**0.00121**		**5.27E-4**
Vanadium	**7440-62-2**	**1.01**		**0.0473**
Zinc	7440-66-6	24.4	U	68.7

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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: 05/21/24 15:55
SUBMITTED: 05/13/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-FB01-050524-HM
Matrix: Air
Lab ID: 4051340-18
Sample Volume: 2019.136 m³
Filter ID:
Sampled: 05/05/24 00:00
Received: 05/13/24 14:02
Analysis Date: 05/15/24 04:56

Comments: Q8532977 - 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	0.0174	SL, U	0.0311
Arsenic	7440-38-2	0.00491	U	0.00755
Barium	**7440-39-3**	**1.03**	FB-01	**0.862**
Beryllium	7440-41-7	5.90E-4	U	0.00258
Cadmium	7440-43-9	5.85E-4	U	0.0597
Chromium	7440-47-3	1.02	U	1.78
Cobalt	7440-48-4	0.0155	U	0.0351
Copper	7440-50-8	0.602	U	2.12
Lead	7439-92-1	0.0245	U	0.172
Manganese	7439-96-5	0.254	U	1.52
Molybdenum	7439-98-7	0.167	U	0.289
Nickel	**7440-02-0**	**0.559**	FB-01	**0.525**
Selenium	7782-49-2	ND	BR, LL, QB-04, U	0.00722
Thallium	7440-28-0	1.10E-4	U	4.75E-4
Vanadium	7440-62-2	0.0242	U	0.0426
Zinc	7440-66-6	13.3	U	61.9

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 05/21/24 15:55
SUBMITTED: 05/13/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-050624-HM
Matrix: Air
Lab ID: 4051340-19
Sample Volume: 2028.657 m³
Filter ID:
Sampled: 05/06/24 23:59
Received: 05/13/24 14:02
Analysis Date: 05/15/24 05:10

Comments: Q8532976 - Received in good condition - nonhomogenous

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0969**	SL	**0.0310**
Arsenic	**7440-38-2**	**0.228**		**0.00751**
Barium	**7440-39-3**	**4.17**		**0.858**
Beryllium	**7440-41-7**	**0.00952**		**0.00257**
Cadmium	7440-43-9	0.0136	U	0.0594
Chromium	**7440-47-3**	**1.89**		**1.77**
Cobalt	**7440-48-4**	**0.329**		**0.0350**
Copper	**7440-50-8**	**51.4**		**2.11**
Lead	**7439-92-1**	**0.593**		**0.172**
Manganese	**7439-96-5**	**8.61**		**1.52**
Molybdenum	**7439-98-7**	**2.32**		**0.288**
Nickel	**7440-02-0**	**1.38**		**0.523**
Selenium	**7782-49-2**	**0.163**	LL, QB-04	**0.00719**
Thallium	**7440-28-0**	**0.00159**		**4.72E-4**
Vanadium	**7440-62-2**	**1.02**		**0.0424**
Zinc	7440-66-6	44.0	U	61.6

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 05/21/24 15:55
SUBMITTED: 05/13/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-050624-HM
Matrix: Air
Lab ID: 4051340-20
Sample Volume: 2026.903 m³
Filter ID:
Sampled: 05/06/24 23:59
Received: 05/13/24 14:02
Analysis Date: 05/15/24 05:25

Comments: Q8532974 - 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**	**0.0610**	SL	**0.0310**
Arsenic	**7440-38-2**	**0.192**		**0.00752**
Barium	**7440-39-3**	**3.30**		**0.859**
Beryllium	**7440-41-7**	**0.0156**		**0.00257**
Cadmium	7440-43-9	0.00886	U	0.0595
Chromium	**7440-47-3**	**1.90**		**1.77**
Cobalt	**7440-48-4**	**0.288**		**0.0350**
Copper	**7440-50-8**	**45.6**		**2.11**
Lead	**7439-92-1**	**0.780**		**0.172**
Manganese	**7439-96-5**	**7.11**		**1.52**
Molybdenum	**7439-98-7**	**2.15**		**0.288**
Nickel	**7440-02-0**	**1.12**		**0.523**
Selenium	**7782-49-2**	**0.138**	LL, QB-04	**0.00719**
Thallium	**7440-28-0**	**0.00142**		**4.73E-4**
Vanadium	**7440-62-2**	**0.813**		**0.0425**
Zinc	7440-66-6	39.5	U	61.6

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 05/21/24 15:55
SUBMITTED: 05/13/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-050624-HM
Matrix: Air
Lab ID: 4051340-21
Sample Volume: 1821.348 m³
Filter ID:
Sampled: 05/06/24 23:59
Received: 05/13/24 14:02
Analysis Date: 05/15/24 05:38

Comments: Q8532973 - 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**	**0.0927**	SL	**0.0345**
Arsenic	**7440-38-2**	**0.499**		**0.00837**
Barium	**7440-39-3**	**5.20**		**0.956**
Beryllium	**7440-41-7**	**0.0193**		**0.00286**
Cadmium	7440-43-9	0.0157	U	0.0662
Chromium	**7440-47-3**	**3.79**		**1.97**
Cobalt	**7440-48-4**	**0.649**		**0.0389**
Copper	**7440-50-8**	**24.5**		**2.35**
Lead	**7439-92-1**	**0.950**		**0.191**
Manganese	**7439-96-5**	**16.8**		**1.69**
Molybdenum	**7439-98-7**	**1.24**		**0.321**
Nickel	**7440-02-0**	**2.16**		**0.582**
Selenium	**7782-49-2**	**0.190**	LL, QB-04	**0.00800**
Thallium	**7440-28-0**	**0.00176**		**5.26E-4**
Vanadium	**7440-62-2**	**1.50**		**0.0473**
Zinc	7440-66-6	47.0	U	68.6

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 05/21/24 15:55
SUBMITTED: 05/13/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-050724-HM
Matrix: Air
Lab ID: 4051340-22
Sample Volume: 2074.204 m³
Filter ID:
Sampled: 05/07/24 23:59
Received: 05/13/24 14:02
Analysis Date: 05/15/24 05:52

Comments: Q9546685 - 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**	**0.0587**	SL	**0.0303**
Arsenic	**7440-38-2**	**0.215**		**0.00735**
Barium	**7440-39-3**	**3.22**		**0.839**
Beryllium	**7440-41-7**	**0.00841**		**0.00251**
Cadmium	7440-43-9	0.0110	U	0.0581
Chromium	**7440-47-3**	**1.98**		**1.73**
Cobalt	**7440-48-4**	**0.246**		**0.0342**
Copper	**7440-50-8**	**42.8**		**2.06**
Lead	**7439-92-1**	**0.693**		**0.168**
Manganese	**7439-96-5**	**6.87**		**1.48**
Molybdenum	**7439-98-7**	**2.02**		**0.282**
Nickel	**7440-02-0**	**0.810**		**0.511**
Selenium	**7782-49-2**	**0.119**	LL, QB-04	**0.00703**
Thallium	**7440-28-0**	**0.00105**		**4.62E-4**
Vanadium	**7440-62-2**	**0.660**		**0.0415**
Zinc	7440-66-6	25.6	U	60.2

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 05/21/24 15:55
SUBMITTED: 05/13/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-050724-HM
Matrix: Air
Lab ID: 4051340-23
Sample Volume: 1963.331 m³
Filter ID:
Sampled: 05/07/24 23:59
Received: 05/13/24 14:02
Analysis Date: 05/15/24 06:06

Comments: Q9546684 - Received in good condition - nonhomogenous

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0779**	SL	**0.0320**
Arsenic	**7440-38-2**	**0.231**		**0.00776**
Barium	**7440-39-3**	**3.53**		**0.887**
Beryllium	**7440-41-7**	**0.0204**		**0.00265**
Cadmium	7440-43-9	0.0131	U	0.0614
Chromium	**7440-47-3**	**2.84**		**1.83**
Cobalt	**7440-48-4**	**0.405**		**0.0361**
Copper	**7440-50-8**	**68.1**		**2.18**
Lead	**7439-92-1**	**1.30**		**0.177**
Manganese	**7439-96-5**	**9.62**		**1.57**
Molybdenum	**7439-98-7**	**2.35**		**0.298**
Nickel	**7440-02-0**	**1.15**		**0.540**
Selenium	**7782-49-2**	**0.138**	LL, QB-04	**0.00743**
Thallium	**7440-28-0**	**0.00122**		**4.88E-4**
Vanadium	**7440-62-2**	**1.00**		**0.0438**
Zinc	7440-66-6	29.8	U	63.6

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 05/21/24 15:55
SUBMITTED: 05/13/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-050724-HM
Matrix: Air
Lab ID: 4051340-24
Sample Volume: 1783.885 m³
Filter ID:
Sampled: 05/07/24 23:59
Received: 05/13/24 14:02
Analysis Date: 05/15/24 07:14

Comments: Q9546683 - 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**	**0.0498**	SL	**0.0352**
Arsenic	**7440-38-2**	**0.319**		**0.00855**
Barium	**7440-39-3**	**3.69**		**0.976**
Beryllium	**7440-41-7**	**0.0137**		**0.00292**
Cadmium	7440-43-9	0.0123	U	0.0676
Chromium	**7440-47-3**	**2.88**		**2.02**
Cobalt	**7440-48-4**	**0.431**		**0.0398**
Copper	**7440-50-8**	**35.9**		**2.40**
Lead	**7439-92-1**	**0.832**		**0.195**
Manganese	**7439-96-5**	**12.6**		**1.72**
Molybdenum	**7439-98-7**	**2.09**		**0.327**
Nickel	**7440-02-0**	**1.14**		**0.595**
Selenium	**7782-49-2**	**0.139**	LL, QB-04	**0.00817**
Thallium	**7440-28-0**	**0.00142**		**5.37E-4**
Vanadium	**7440-62-2**	**1.12**		**0.0482**
Zinc	7440-66-6	23.2	U	70.0

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 05/21/24 15:55
SUBMITTED: 05/13/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-FB01-050724-HM
Matrix: Air
Lab ID: 4051340-25
Sample Volume: 2074.204 m³
Filter ID:
Sampled: 05/07/24 00:00
Received: 05/13/24 14:02
Analysis Date: 05/15/24 07:29

Comments: Q9546682 - 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	0.00775	SL, U	0.0303
Arsenic	7440-38-2	0.00670	U	0.00735
Barium	7440-39-3	0.571	U	0.839
Beryllium	7440-41-7	0.00102	U	0.00251
Cadmium	7440-43-9	0.00154	U	0.0581
Chromium	7440-47-3	1.37	U	1.73
Cobalt	7440-48-4	0.0256	U	0.0342
Copper	7440-50-8	0.360	U	2.06
Lead	7439-92-1	0.0542	U	0.168
Manganese	7439-96-5	0.304	U	1.48
Molybdenum	7439-98-7	0.235	U	0.282
Nickel	7440-02-0	0.287	U	0.511
Selenium	7782-49-2	ND	BR, LL, QB-04, U	0.00703
Thallium	7440-28-0	1.14E-4	U	4.62E-4
Vanadium	7440-62-2	0.0160	U	0.0415
Zinc	7440-66-6	13.1	U	60.2

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

FILE #: 4205.00.003.001
REPORTED: 05/21/24 15:55
SUBMITTED: 05/13/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-050824-HM
Matrix: Air
Lab ID: 4051340-26
Sample Volume: 2014.906 m³
Filter ID:
Sampled: 05/08/24 23:59
Received: 05/13/24 14:02
Analysis Date: 05/15/24 07:43

Comments: Q9546681 - 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**	**0.0647**	SL	**0.0312**
Arsenic	**7440-38-2**	**0.240**		**0.00757**
Barium	**7440-39-3**	**4.13**		**0.864**
Beryllium	**7440-41-7**	**0.0115**		**0.00258**
Cadmium	7440-43-9	0.0120	U	0.0598
Chromium	**7440-47-3**	**2.42**		**1.78**
Cobalt	**7440-48-4**	**0.375**		**0.0352**
Copper	**7440-50-8**	**40.7**		**2.12**
Lead	**7439-92-1**	**0.642**		**0.173**
Manganese	**7439-96-5**	**9.64**		**1.53**
Molybdenum	**7439-98-7**	**2.06**		**0.290**
Nickel	**7440-02-0**	**1.47**		**0.526**
Selenium	**7782-49-2**	**0.194**	LL, QB-04	**0.00724**
Thallium	**7440-28-0**	**0.00182**		**4.76E-4**
Vanadium	**7440-62-2**	**1.43**		**0.0427**
Zinc	7440-66-6	16.9	U	62.0

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

FILE #: 4205.00.003.001
REPORTED: 05/21/24 15:55
SUBMITTED: 05/13/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-050824-HM
Matrix: Air
Lab ID: 4051340-27
Sample Volume: 1991.782 m³
Filter ID:
Sampled: 05/08/24 23:59
Received: 05/13/24 14:02
Analysis Date: 05/15/24 07:57

Comments: Q9546680 - 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	**0.0315**
Arsenic	**7440-38-2**	**0.294**		**0.00765**
Barium	**7440-39-3**	**4.23**		**0.874**
Beryllium	**7440-41-7**	**0.0193**		**0.00261**
Cadmium	7440-43-9	0.0211	U	0.0605
Chromium	**7440-47-3**	**3.09**		**1.81**
Cobalt	**7440-48-4**	**0.384**		**0.0356**
Copper	**7440-50-8**	**75.8**		**2.15**
Lead	**7439-92-1**	**1.90**		**0.175**
Manganese	**7439-96-5**	**9.69**		**1.54**
Molybdenum	**7439-98-7**	**2.59**		**0.293**
Nickel	**7440-02-0**	**1.58**		**0.533**
Selenium	**7782-49-2**	**0.197**	LL, QB-04	**0.00732**
Thallium	**7440-28-0**	**0.00190**		**4.81E-4**
Vanadium	**7440-62-2**	**1.48**		**0.0432**
Zinc	7440-66-6	33.3	U	62.7

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FILE #: 4205.00.003.001
REPORTED: 05/21/24 15:55
SUBMITTED: 05/13/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-050824-HM
Matrix: Air
Lab ID: 4051340-28
Sample Volume: 1782.39 m³
Filter ID:
Sampled: 05/08/24 23:59
Received: 05/13/24 14:02
Analysis Date: 05/15/24 08:13

Comments: Q8532960 - 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**	**0.146**	SL	**0.0352**
Arsenic	**7440-38-2**	**1.15**		**0.00855**
Barium	**7440-39-3**	**10.3**		**0.977**
Beryllium	**7440-41-7**	**0.0332**		**0.00292**
Cadmium	7440-43-9	0.0354	U	0.0676
Chromium	**7440-47-3**	**5.47**		**2.02**
Cobalt	**7440-48-4**	**1.19**		**0.0398**
Copper	**7440-50-8**	**46.9**		**2.40**
Lead	**7439-92-1**	**2.16**		**0.195**
Manganese	**7439-96-5**	**43.2**		**1.73**
Molybdenum	**7439-98-7**	**1.87**		**0.328**
Nickel	**7440-02-0**	**3.76**		**0.595**
Selenium	**7782-49-2**	**0.309**	LL, QB-04	**0.00818**
Thallium	**7440-28-0**	**0.00308**		**5.38E-4**
Vanadium	**7440-62-2**	**3.31**		**0.0483**
Zinc	7440-66-6	46.0	U	70.1

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

FILE #: 4205.00.003.001
REPORTED: 05/21/24 15:55
SUBMITTED: 05/13/24
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 2405044 - B4D1709										
Calibration Blank (2405044-CCB1)				Prepared & Analyzed: 05/14/24						
Antimony	3.78		ng/l							
Arsenic	4.17		ng/l							
Barium	1.43		ng/l							
Beryllium	0.177		ng/l							
Cadmium	0.339		ng/l							
Chromium	4.21		ng/l							
Cobalt	0.909		ng/l							
Copper	96.2		ng/l							
Lead	29.1		ng/l							
Manganese	9.03		ng/l							
Molybdenum	35.1		ng/l							
Nickel	1.63		ng/l							
Selenium	13.6		ng/l							
Thallium	1.08		ng/l							
Vanadium	-44.0		ng/l							U
Zinc	-2.39		ng/l							U
Calibration Blank (2405044-CCB2)				Prepared & Analyzed: 05/14/24						
Antimony	2.65		ng/l							
Arsenic	3.13		ng/l							
Barium	2.39		ng/l							
Beryllium	0.306		ng/l							
Cadmium	0.383		ng/l							
Chromium	1.97		ng/l							
Cobalt	0.702		ng/l							
Copper	78.7		ng/l							
Lead	16.4		ng/l							
Manganese	7.07		ng/l							
Molybdenum	12.2		ng/l							
Nickel	1.59		ng/l							
Selenium	6.32		ng/l							
Thallium	0.416		ng/l							
Vanadium	-45.1		ng/l							U
Zinc	8.72		ng/l							
Calibration Blank (2405044-CCB3)				Prepared: 05/14/24 Analyzed: 05/15/24						
Antimony	0.235		ng/l							
Arsenic	1.93		ng/l							
Barium	0.401		ng/l							
Beryllium	0.274		ng/l							

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FILE #: 4205.00.003.001
REPORTED: 05/21/24 15:55
SUBMITTED: 05/13/24
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 2405044 - B4D1709										
Calibration Blank (2405044-CCB3) Contin				Prepared: 05/14/24 Analyzed: 05/15/24						
Cadmium	9.72E-5		ng/l							
Chromium	0.444		ng/l							
Cobalt	0.0969		ng/l							
Copper	79.3		ng/l							
Lead	4.25		ng/l							
Manganese	1.82		ng/l							
Molybdenum	4.84		ng/l							
Nickel	0.0556		ng/l							
Selenium	-9.38		ng/l							U
Thallium	0.579		ng/l							
Vanadium	-44.3		ng/l							U
Zinc	172		ng/l							
Calibration Blank (2405044-CCB4)				Prepared: 05/14/24 Analyzed: 05/15/24						
Antimony	0.454		ng/l							
Arsenic	4.50		ng/l							
Barium	0.850		ng/l							
Beryllium	3.48E-5		ng/l							
Cadmium	0.0931		ng/l							
Chromium	0.125		ng/l							
Cobalt	0.366		ng/l							
Copper	72.2		ng/l							
Lead	3.15		ng/l							
Manganese	2.91		ng/l							
Molybdenum	4.31		ng/l							
Nickel	0.562		ng/l							
Selenium	-18.2		ng/l							U
Thallium	0.518		ng/l							
Vanadium	-45.7		ng/l							U
Zinc	-10.9		ng/l							U
Calibration Blank (2405044-CCB5)				Prepared: 05/14/24 Analyzed: 05/15/24						
Antimony	0.423		ng/l							
Arsenic	8.57		ng/l							
Barium	2.44		ng/l							
Beryllium	-0.135		ng/l							U
Cadmium	0.0991		ng/l							
Chromium	2.17		ng/l							
Cobalt	0.370		ng/l							
Copper	68.8		ng/l							

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FILE #: 4205.00.003.001
REPORTED: 05/21/24 15:55
SUBMITTED: 05/13/24
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 2405044 - B4D1709										
Calibration Blank (2405044-CCB5) Contin				Prepared: 05/14/24 Analyzed: 05/15/24						
Lead	3.06		ng/l							
Manganese	4.87		ng/l							
Molybdenum	3.12		ng/l							
Nickel	0.939		ng/l							
Selenium	-32.2		ng/l							LL, QB-04, U
Thallium	0.651		ng/l							
Vanadium	-44.5		ng/l							U
Zinc	-6.02		ng/l							U
Calibration Blank (2405044-CCB6)				Prepared: 05/14/24 Analyzed: 05/15/24						
Antimony	0.764		ng/l							
Arsenic	2.81		ng/l							
Barium	1.97		ng/l							
Beryllium	-0.00196		ng/l							U
Cadmium	0.270		ng/l							
Chromium	2.26		ng/l							
Cobalt	0.632		ng/l							
Copper	73.7		ng/l							
Lead	3.71		ng/l							
Manganese	6.07		ng/l							
Molybdenum	4.77		ng/l							
Nickel	1.05		ng/l							
Selenium	-42.4		ng/l							LL, QB-04, U
Thallium	0.731		ng/l							
Vanadium	-52.8		ng/l							U
Zinc	6.56		ng/l							
Calibration Check (2405044-CCV1)				Prepared & Analyzed: 05/14/24						
Antimony	19900		ng/l	20000		99.3	90-110			
Arsenic	19800		ng/l	20000		99.0	90-110			
Barium	213000		ng/l	200000		107	90-110			
Beryllium	4790		ng/l	5000.0		95.9	90-110			
Cadmium	19700		ng/l	20000		98.3	90-110			
Chromium	238000		ng/l	240000		99.1	90-110			
Cobalt	51500		ng/l	50000		103	90-110			
Copper	2.01E6		ng/l	2.0000E6		101	90-110			
Lead	195000		ng/l	200000		97.6	90-110			
Manganese	490000		ng/l	500000		97.9	90-110			
Molybdenum	48600		ng/l	50000		97.1	90-110			
Nickel	123000		ng/l	120000		103	90-110			

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FILE #: 4205.00.003.001
REPORTED: 05/21/24 15:55
SUBMITTED: 05/13/24
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 2405044 - B4D1709										
Calibration Check (2405044-CCV1) Contin					Prepared & Analyzed: 05/14/24					
Selenium	20000		ng/l	20000		100	90-110			
Thallium	494		ng/l	500.00		98.9	90-110			
Vanadium	19600		ng/l	20000		97.9	90-110			
Zinc	503000		ng/l	500000		101	90-110			
Calibration Check (2405044-CCV2)					Prepared & Analyzed: 05/14/24					
Antimony	20200		ng/l	20000		101	90-110			
Arsenic	20100		ng/l	20000		100	90-110			
Barium	217000		ng/l	200000		109	90-110			
Beryllium	5020		ng/l	5000.0		100	90-110			
Cadmium	20100		ng/l	20000		100	90-110			
Chromium	239000		ng/l	240000		99.7	90-110			
Cobalt	51200		ng/l	50000		102	90-110			
Copper	2.01E6		ng/l	2.0000E6		100	90-110			
Lead	198000		ng/l	200000		99.2	90-110			
Manganese	490000		ng/l	500000		98.1	90-110			
Molybdenum	49600		ng/l	50000		99.1	90-110			
Nickel	123000		ng/l	120000		102	90-110			
Selenium	20300		ng/l	20000		102	90-110			
Thallium	494		ng/l	500.00		98.9	90-110			
Vanadium	19800		ng/l	20000		99.2	90-110			
Zinc	510000		ng/l	500000		102	90-110			
Calibration Check (2405044-CCV3)					Prepared & Analyzed: 05/14/24					
Antimony	19800		ng/l	20000		99.1	90-110			
Arsenic	19700		ng/l	20000		98.5	90-110			
Barium	212000		ng/l	200000		106	90-110			
Beryllium	5110		ng/l	5000.0		102	90-110			
Cadmium	19800		ng/l	20000		98.8	90-110			
Chromium	236000		ng/l	240000		98.2	90-110			
Cobalt	50900		ng/l	50000		102	90-110			
Copper	1.99E6		ng/l	2.0000E6		99.4	90-110			
Lead	195000		ng/l	200000		97.6	90-110			
Manganese	486000		ng/l	500000		97.2	90-110			
Molybdenum	49000		ng/l	50000		98.1	90-110			
Nickel	122000		ng/l	120000		102	90-110			
Selenium	19900		ng/l	20000		99.6	90-110			
Thallium	480		ng/l	500.00		95.9	90-110			
Vanadium	19500		ng/l	20000		97.7	90-110			
Zinc	502000		ng/l	500000		100	90-110			

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 05/21/24 15:55
SUBMITTED: 05/13/24
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 2405044 - B4D1709										
Calibration Check (2405044-CCV4)				Prepared: 05/14/24 Analyzed: 05/15/24						
Antimony	20700		ng/l	20000		103	90-110			
Arsenic	20500		ng/l	20000		102	90-110			
Barium	220000		ng/l	200000		110	90-110			
Beryllium	5100		ng/l	5000.0		102	90-110			
Cadmium	20400		ng/l	20000		102	90-110			
Chromium	243000		ng/l	240000		101	90-110			
Cobalt	52500		ng/l	50000		105	90-110			
Copper	2.06E6		ng/l	2.0000E6		103	90-110			
Lead	201000		ng/l	200000		101	90-110			
Manganese	502000		ng/l	500000		100	90-110			
Molybdenum	51000		ng/l	50000		102	90-110			
Nickel	126000		ng/l	120000		105	90-110			
Selenium	20400		ng/l	20000		102	90-110			
Thallium	482		ng/l	500.00		96.3	90-110			
Vanadium	20200		ng/l	20000		101	90-110			
Zinc	520000		ng/l	500000		104	90-110			
Calibration Check (2405044-CCV5)				Prepared: 05/14/24 Analyzed: 05/15/24						
Antimony	20800		ng/l	20000		104	90-110			
Arsenic	20400		ng/l	20000		102	90-110			
Barium	218000		ng/l	200000		109	90-110			
Beryllium	5140		ng/l	5000.0		103	90-110			
Cadmium	20500		ng/l	20000		103	90-110			
Chromium	245000		ng/l	240000		102	90-110			
Cobalt	52100		ng/l	50000		104	90-110			
Copper	2.07E6		ng/l	2.0000E6		103	90-110			
Lead	201000		ng/l	200000		100	90-110			
Manganese	502000		ng/l	500000		100	90-110			
Molybdenum	51200		ng/l	50000		102	90-110			
Nickel	125000		ng/l	120000		104	90-110			
Selenium	20500		ng/l	20000		102	90-110			
Thallium	474		ng/l	500.00		94.7	90-110			
Vanadium	20300		ng/l	20000		102	90-110			
Zinc	521000		ng/l	500000		104	90-110			
Calibration Check (2405044-CCV6)				Prepared: 05/14/24 Analyzed: 05/15/24						
Antimony	20400		ng/l	20000		102	90-110			
Arsenic	20200		ng/l	20000		101	90-110			
Barium	213000		ng/l	200000		107	90-110			
Beryllium	4900		ng/l	5000.0		97.9	90-110			

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: 05/21/24 15:55
SUBMITTED: 05/13/24
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 2405044 - B4D1709										
Calibration Check (2405044-CCV6) Contin					Prepared: 05/14/24 Analyzed: 05/15/24					
Cadmium	20500		ng/l	20000		102	90-110			
Chromium	247000		ng/l	240000		103	90-110			
Cobalt	52000		ng/l	50000		104	90-110			
Copper	2.07E6		ng/l	2.0000E6		104	90-110			
Lead	201000		ng/l	200000		101	90-110			
Manganese	503000		ng/l	500000		101	90-110			
Molybdenum	51900		ng/l	50000		104	90-110			
Nickel	125000		ng/l	120000		105	90-110			
Selenium	20100		ng/l	20000		100	90-110			
Thallium	472		ng/l	500.00		94.5	90-110			
Vanadium	20200		ng/l	20000		101	90-110			
Zinc	524000		ng/l	500000		105	90-110			
High Cal Check (2405044-HCV1)					Prepared & Analyzed: 05/14/24					
Antimony	40100		ng/l	40000		100	95-105			
Arsenic	39600		ng/l	40000		99.1	95-105			
Barium	396000		ng/l	400000		99.0	95-105			
Beryllium	10000		ng/l	10000		100	95-105			
Cadmium	39800		ng/l	40000		99.4	95-105			
Chromium	476000		ng/l	480000		99.1	95-105			
Cobalt	97800		ng/l	100000		97.8	95-105			
Copper	3.93E6		ng/l	4.0000E6		98.1	95-105			
Lead	397000		ng/l	400000		99.2	95-105			
Manganese	997000		ng/l	1.0000E6		99.7	95-105			
Molybdenum	100000		ng/l	100000		100	95-105			
Nickel	233000		ng/l	240000		97.2	95-105			
Selenium	39800		ng/l	40000		99.5	95-105			
Thallium	973		ng/l	1000.0		97.3	95-105			
Vanadium	39700		ng/l	40000		99.2	95-105			
Zinc	993000		ng/l	1.0000E6		99.3	95-105			
Initial Cal Blank (2405044-ICB1)					Prepared & Analyzed: 05/14/24					
Antimony	2.17		ng/l							
Arsenic	4.02		ng/l							
Barium	2.17		ng/l							
Beryllium	0.330		ng/l							
Cadmium	0.228		ng/l							
Chromium	2.36		ng/l							
Cobalt	0.628		ng/l							
Copper	76.9		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 2405044 - B4D1709										
Initial Cal Blank (2405044-ICB1) Continu				Prepared & Analyzed: 05/14/24						
Lead	37.8		ng/l							
Manganese	6.83		ng/l							
Molybdenum	20.1		ng/l							
Nickel	1.39		ng/l							
Selenium	-1.69		ng/l							U
Thallium	1.18		ng/l							
Vanadium	-45.1		ng/l							U
Zinc	8.43		ng/l							
Initial Cal Check (2405044-ICV1)				Prepared & Analyzed: 05/14/24						
Antimony	19800		ng/l	20000		99.1	90-110			
Arsenic	20000		ng/l	20000		99.8	90-110			
Barium	210000		ng/l	200000		105	90-110			
Beryllium	5030		ng/l	5000.0		101	90-110			
Cadmium	20700		ng/l	20000		104	90-110			
Chromium	240000		ng/l	240000		100	90-110			
Cobalt	50900		ng/l	50000		102	90-110			
Copper	2.04E6		ng/l	2.0000E6		102	90-110			
Lead	197000		ng/l	200000		98.7	90-110			
Manganese	494000		ng/l	500000		98.9	90-110			
Molybdenum	49900		ng/l	50000		99.8	90-110			
Nickel	124000		ng/l	120000		104	90-110			
Selenium	20500		ng/l	20000		103	90-110			
Thallium	506		ng/l	500.00		101	90-110			
Vanadium	20200		ng/l	20000		101	90-110			
Zinc	509000		ng/l	500000		102	90-110			
Interference Check A (2405044-IFA1)				Prepared & Analyzed: 05/14/24						
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	285000		ng/l	300000		95.1	80-120			
Nickel	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 2405044 - B4D1709										
Interference Check A (2405044-IFA1) Co					Prepared & Analyzed: 05/14/24					
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 (2405044-IFB1)					Prepared & Analyzed: 05/14/24					
Antimony	20100		ng/l	20000		101	80-120			
Arsenic	20300		ng/l	20000		101	80-120			
Barium	213000		ng/l	200000		106	80-120			
Beryllium	4950		ng/l	5000.0		99.0	80-120			
Cadmium	19200		ng/l	20000		96.0	80-120			
Chromium	232000		ng/l	240000		96.8	80-120			
Cobalt	50800		ng/l	50000		102	80-120			
Copper	1.89E6		ng/l	2.0000E6		94.5	80-120			
Lead	203000		ng/l	200000		102	80-120			
Manganese	505000		ng/l	500000		101	80-120			
Molybdenum	341000		ng/l	350000		97.3	80-120			
Nickel	118000		ng/l	120000		98.7	80-120			
Selenium	19100		ng/l	20000		95.5	80-120			
Thallium	502		ng/l	500.00		100	80-120			
Vanadium	18800		ng/l	20000		94.0	80-120			
Zinc	466000		ng/l	500000		93.1	80-120			
Batch 2405054 - B4D1903										
Calibration Blank (2405054-CCB1)					Prepared: 05/16/24 Analyzed: 05/17/24					
Antimony	1.07		ng/l							
Arsenic	9.10		ng/l							
Barium	2.76		ng/l							
Beryllium	0.350		ng/l							
Cadmium	0.220		ng/l							
Chromium	2.87		ng/l							
Cobalt	1.15		ng/l							
Copper	265		ng/l							
Lead	10.3		ng/l							
Manganese	13.0		ng/l							
Molybdenum	19.6		ng/l							
Nickel	1.51		ng/l							
Selenium	-4.00		ng/l							LJ, QX, U
Thallium	1.30		ng/l							
Vanadium	-63.3		ng/l							U

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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2405054 - B4D1903										
Calibration Blank (2405054-CCB1) Contin				Prepared: 05/16/24 Analyzed: 05/17/24						
Zinc	22.2		ng/l							
Calibration Blank (2405054-CCB2)				Prepared: 05/16/24 Analyzed: 05/17/24						
Antimony	0.428		ng/l							
Arsenic	12.6		ng/l							
Barium	1.46		ng/l							
Beryllium	0.0625		ng/l							
Cadmium	0.178		ng/l							
Chromium	1.25		ng/l							
Cobalt	0.592		ng/l							
Copper	71.4		ng/l							
Lead	5.90		ng/l							
Manganese	7.76		ng/l							
Molybdenum	1.02		ng/l							
Nickel	1.48		ng/l							
Selenium	-21.8		ng/l							LJ, QX, U
Thallium	1.29		ng/l							
Vanadium	-68.7		ng/l							U
Zinc	3.81		ng/l							
Calibration Blank (2405054-CCB3)				Prepared: 05/16/24 Analyzed: 05/18/24						
Antimony	0.533		ng/l							
Arsenic	14.0		ng/l							
Barium	4.63		ng/l							
Beryllium	-0.0702		ng/l							U
Cadmium	0.429		ng/l							
Chromium	2.44		ng/l							
Cobalt	0.745		ng/l							
Copper	64.9		ng/l							
Lead	5.69		ng/l							
Manganese	10.9		ng/l							
Molybdenum	1.00		ng/l							
Nickel	3.70		ng/l							
Selenium	-2.26		ng/l							LJ, QX, U
Thallium	1.14		ng/l							
Vanadium	-73.9		ng/l							U
Zinc	4.48		ng/l							
Calibration Blank (2405054-CCB4)				Prepared: 05/16/24 Analyzed: 05/18/24						
Antimony	0.621		ng/l							
Arsenic	14.0		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 2405054 - B4D1903										
Calibration Blank (2405054-CCB4) Contin				Prepared: 05/16/24 Analyzed: 05/18/24						
Barium	2.33		ng/l							
Beryllium	-0.488		ng/l							U
Cadmium	0.263		ng/l							
Chromium	0.676		ng/l							
Cobalt	0.466		ng/l							
Copper	13.5		ng/l							
Lead	4.38		ng/l							
Manganese	5.80		ng/l							
Molybdenum	1.86		ng/l							
Nickel	3.33		ng/l							
Selenium	-7.38		ng/l							LJ, QX, U
Thallium	1.09		ng/l							
Vanadium	-74.7		ng/l							U
Zinc	4.05		ng/l							
Calibration Blank (2405054-CCB5)				Prepared: 05/16/24 Analyzed: 05/18/24						
Antimony	0.565		ng/l							
Arsenic	10.3		ng/l							
Barium	1.46		ng/l							
Beryllium	-0.218		ng/l							U
Cadmium	0.260		ng/l							
Chromium	-0.574		ng/l							U
Cobalt	0.125		ng/l							
Copper	-0.724		ng/l							U
Lead	3.52		ng/l							
Manganese	3.61		ng/l							
Molybdenum	-0.631		ng/l							U
Nickel	3.00		ng/l							
Selenium	6.50		ng/l							LJ, QX
Thallium	1.27		ng/l							
Vanadium	-77.1		ng/l							U
Zinc	14.7		ng/l							
Calibration Check (2405054-CCV1)				Prepared: 05/16/24 Analyzed: 05/17/24						
Antimony	19600		ng/l	20000		98.1	90-110			
Arsenic	19900		ng/l	20000		99.4	90-110			
Barium	196000		ng/l	200000		97.9	90-110			
Beryllium	4770		ng/l	5000.0		95.4	90-110			
Cadmium	19900		ng/l	20000		99.4	90-110			
Chromium	237000		ng/l	240000		98.8	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 2405054 - B4D1903										
Calibration Check (2405054-CCV1) Contin					Prepared: 05/16/24 Analyzed: 05/17/24					
Cobalt	51200		ng/l	50000		102	90-110			
Copper	2.03E6		ng/l	2.0000E6		102	90-110			
Lead	196000		ng/l	200000		98.1	90-110			
Manganese	504000		ng/l	500000		101	90-110			
Molybdenum	49000		ng/l	50000		98.1	90-110			
Nickel	124000		ng/l	120000		103	90-110			
Selenium	19800		ng/l	20000		98.8	90-110			LJ, QX
Thallium	475		ng/l	500.00		94.9	90-110			
Vanadium	19500		ng/l	20000		97.5	90-110			
Zinc	505000		ng/l	500000		101	90-110			
Calibration Check (2405054-CCV2)					Prepared: 05/16/24 Analyzed: 05/17/24					
Antimony	19800		ng/l	20000		99.1	90-110			
Arsenic	19800		ng/l	20000		98.8	90-110			
Barium	198000		ng/l	200000		99.0	90-110			
Beryllium	4790		ng/l	5000.0		95.7	90-110			
Cadmium	19900		ng/l	20000		99.4	90-110			
Chromium	238000		ng/l	240000		99.2	90-110			
Cobalt	49900		ng/l	50000		99.9	90-110			
Copper	2.01E6		ng/l	2.0000E6		101	90-110			
Lead	196000		ng/l	200000		98.2	90-110			
Manganese	497000		ng/l	500000		99.4	90-110			
Molybdenum	49500		ng/l	50000		98.9	90-110			
Nickel	120000		ng/l	120000		100	90-110			
Selenium	19900		ng/l	20000		99.3	90-110			LJ, QX
Thallium	463		ng/l	500.00		92.5	90-110			
Vanadium	19700		ng/l	20000		98.4	90-110			
Zinc	503000		ng/l	500000		101	90-110			
Calibration Check (2405054-CCV3)					Prepared: 05/16/24 Analyzed: 05/17/24					
Antimony	20000		ng/l	20000		100	90-110			
Arsenic	19900		ng/l	20000		99.5	90-110			
Barium	198000		ng/l	200000		99.0	90-110			
Beryllium	4840		ng/l	5000.0		96.7	90-110			
Cadmium	20000		ng/l	20000		100	90-110			
Chromium	239000		ng/l	240000		99.8	90-110			
Cobalt	50200		ng/l	50000		100	90-110			
Copper	2.03E6		ng/l	2.0000E6		101	90-110			
Lead	198000		ng/l	200000		98.8	90-110			
Manganese	506000		ng/l	500000		101	90-110			

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2405054 - B4D1903										
Calibration Check (2405054-CCV3) Contin				Prepared: 05/16/24 Analyzed: 05/17/24						
Molybdenum	49500		ng/l	50000		99.1	90-110			
Nickel	121000		ng/l	120000		100	90-110			
Selenium	20000		ng/l	20000		100	90-110			LJ, QX
Thallium	458		ng/l	500.00		91.5	90-110			
Vanadium	19800		ng/l	20000		98.8	90-110			
Zinc	508000		ng/l	500000		102	90-110			
Calibration Check (2405054-CCV4)				Prepared: 05/16/24 Analyzed: 05/18/24						
Antimony	20400		ng/l	20000		102	90-110			
Arsenic	20200		ng/l	20000		101	90-110			
Barium	200000		ng/l	200000		100	90-110			
Beryllium	4860		ng/l	5000.0		97.2	90-110			
Cadmium	20300		ng/l	20000		102	90-110			
Chromium	243000		ng/l	240000		101	90-110			
Cobalt	50600		ng/l	50000		101	90-110			
Copper	2.05E6		ng/l	2.0000E6		103	90-110			
Lead	198000		ng/l	200000		99.2	90-110			
Manganese	511000		ng/l	500000		102	90-110			
Molybdenum	49900		ng/l	50000		99.8	90-110			
Nickel	122000		ng/l	120000		101	90-110			
Selenium	20000		ng/l	20000		100	90-110			LJ, QX
Thallium	458		ng/l	500.00		91.6	90-110			
Vanadium	19800		ng/l	20000		99.2	90-110			
Zinc	518000		ng/l	500000		104	90-110			
Calibration Check (2405054-CCV5)				Prepared: 05/16/24 Analyzed: 05/18/24						
Antimony	20200		ng/l	20000		101	90-110			
Arsenic	20100		ng/l	20000		101	90-110			
Barium	200000		ng/l	200000		99.8	90-110			
Beryllium	4960		ng/l	5000.0		99.2	90-110			
Cadmium	20100		ng/l	20000		100	90-110			
Chromium	239000		ng/l	240000		99.7	90-110			
Cobalt	50000		ng/l	50000		99.9	90-110			
Copper	2.04E6		ng/l	2.0000E6		102	90-110			
Lead	197000		ng/l	200000		98.7	90-110			
Manganese	503000		ng/l	500000		101	90-110			
Molybdenum	49500		ng/l	50000		99.1	90-110			
Nickel	120000		ng/l	120000		100	90-110			
Selenium	20100		ng/l	20000		100	90-110			LJ, QX
Thallium	455		ng/l	500.00		90.9	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 2405054 - B4D1903										
Calibration Check (2405054-CCV5) Contin				Prepared: 05/16/24 Analyzed: 05/18/24						
Vanadium	19600		ng/l	20000		97.8	90-110			
Zinc	510000		ng/l	500000		102	90-110			
High Cal Check (2405054-HCV1)				Prepared: 05/16/24 Analyzed: 05/17/24						
Antimony	39500		ng/l	40000		98.8	95-105			
Arsenic	39600		ng/l	40000		99.0	95-105			
Barium	388000		ng/l	400000		97.1	95-105			
Beryllium	10400		ng/l	10000		104	95-105			
Cadmium	39200		ng/l	40000		98.0	95-105			
Chromium	473000		ng/l	480000		98.4	95-105			
Cobalt	98300		ng/l	100000		98.3	95-105			
Copper	3.95E6		ng/l	4.0000E6		98.8	95-105			
Lead	393000		ng/l	400000		98.3	95-105			
Manganese	987000		ng/l	1.0000E6		98.7	95-105			
Molybdenum	98900		ng/l	100000		98.9	95-105			
Nickel	236000		ng/l	240000		98.1	95-105			
Selenium	39000		ng/l	40000		97.4	95-105			LJ, QX
Thallium	984		ng/l	1000.0		98.4	95-105			
Vanadium	39500		ng/l	40000		98.8	95-105			
Zinc	985000		ng/l	1.0000E6		98.5	95-105			
Initial Cal Blank (2405054-ICB1)				Prepared: 05/16/24 Analyzed: 05/17/24						
Antimony	0.744		ng/l							
Arsenic	3.90		ng/l							
Barium	1.04		ng/l							
Beryllium	-0.0446		ng/l							U
Cadmium	0.120		ng/l							
Chromium	1.29		ng/l							
Cobalt	0.518		ng/l							
Copper	188		ng/l							
Lead	6.40		ng/l							
Manganese	5.79		ng/l							
Molybdenum	2.83		ng/l							
Nickel	-1.50		ng/l							U
Selenium	-18.6		ng/l							LJ, QX, U
Thallium	0.319		ng/l							
Vanadium	-72.1		ng/l							U
Zinc	7.20		ng/l							
Initial Cal Check (2405054-ICV1)				Prepared: 05/16/24 Analyzed: 05/17/24						
Antimony	19700		ng/l	20000		98.3	90-110			

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1777 Sentry Pkwy, Bldg 12
Blue Bell, PA 19422
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FILE #: 4205.00.003.001
REPORTED: 05/21/24 15:55
SUBMITTED: 05/13/24
AQS SITE CODE:
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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2405054 - B4D1903										
Initial Cal Check (2405054-ICV1) Continu					Prepared: 05/16/24 Analyzed: 05/17/24					
Arsenic	19800		ng/l	20000		98.8	90-110			
Barium	198000		ng/l	200000		99.2	90-110			
Beryllium	5070		ng/l	5000.0		101	90-110			
Cadmium	20400		ng/l	20000		102	90-110			
Chromium	235000		ng/l	240000		97.9	90-110			
Cobalt	49800		ng/l	50000		99.5	90-110			
Copper	2.03E6		ng/l	2.0000E6		102	90-110			
Lead	196000		ng/l	200000		98.2	90-110			
Manganese	496000		ng/l	500000		99.1	90-110			
Molybdenum	49300		ng/l	50000		98.6	90-110			
Nickel	122000		ng/l	120000		102	90-110			
Selenium	20400		ng/l	20000		102	90-110			LJ, QX
Thallium	495		ng/l	500.00		98.9	90-110			
Vanadium	19900		ng/l	20000		99.3	90-110			
Zinc	505000		ng/l	500000		101	90-110			
Interference Check A (2405054-IFA1)					Prepared: 05/16/24 Analyzed: 05/17/24					
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	299000		ng/l	300000		99.5	80-120			
Nickel	0.00		ng/l				80-120			U
Selenium	0.00		ng/l				80-120			LJ, QX, U
Thallium	0.00		ng/l				80-120			U
Vanadium	0.00		ng/l				80-120			U
Zinc	0.00		ng/l				80-120			U
Interference Check B (2405054-IFB1)					Prepared: 05/16/24 Analyzed: 05/17/24					
Antimony	20200		ng/l	20000		101	80-120			
Arsenic	20300		ng/l	20000		102	80-120			
Barium	197000		ng/l	200000		98.3	80-120			
Beryllium	4610		ng/l	5000.0		92.2	80-120			
Cadmium	19500		ng/l	20000		97.5	80-120			

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2405054 - B4D1903										
Interference Check B (2405054-IFB1) Co				Prepared: 05/16/24 Analyzed: 05/17/24						
Chromium	231000		ng/l	240000		96.2	80-120			
Cobalt	49300		ng/l	50000		98.7	80-120			
Copper	1.90E6		ng/l	2.0000E6		95.0	80-120			
Lead	204000		ng/l	200000		102	80-120			
Manganese	508000		ng/l	500000		102	80-120			
Molybdenum	353000		ng/l	350000		101	80-120			
Nickel	116000		ng/l	120000		96.3	80-120			
Selenium	18900		ng/l	20000		94.7	80-120			LJ, QX
Thallium	498		ng/l	500.00		99.7	80-120			
Vanadium	19500		ng/l	20000		97.5	80-120			
Zinc	465000		ng/l	500000		93.0	80-120			
Batch B4E1406 - ICP-MS Extraction										
Blank (B4E1406-BLK1)				Prepared & Analyzed: 05/14/24						
Antimony	ND	0.0386	ng/m³ Air							SL, U
Arsenic	ND	0.00937	ng/m³ Air							U
Barium	ND	1.07	ng/m³ Air							U
Beryllium	ND	0.00320	ng/m³ Air							U
Cadmium	ND	0.0741	ng/m³ Air							U
Chromium	ND	2.21	ng/m³ Air							U
Cobalt	ND	0.0436	ng/m³ Air							U
Copper	ND	2.63	ng/m³ Air							U
Lead	ND	0.214	ng/m³ Air							U
Manganese	ND	1.89	ng/m³ Air							U
Molybdenum	ND	0.359	ng/m³ Air							U
Nickel	ND	0.652	ng/m³ Air							U
Selenium	ND	0.00896	ng/m³ Air							U
Thallium	ND	5.89E-4	ng/m³ Air							U
Vanadium	ND	0.0529	ng/m³ Air							U
Zinc	ND	76.8	ng/m³ Air							U
LCS (B4E1406-BS1)				Prepared & Analyzed: 05/14/24						
Antimony	0.697	0.0386	ng/m³ Air	1.3829		50.4	80-120			SL
Arsenic	2.68	0.00937	ng/m³ Air	2.7658		96.8	80-120			
Barium	30.2	1.07	ng/m³ Air	27.658		109	80-120			
Beryllium	1.33	0.00320	ng/m³ Air	1.3829		96.4	80-120			
Cadmium	1.31	0.0741	ng/m³ Air	1.3829		94.6	80-120			
Chromium	14.9	2.21	ng/m³ Air	13.829		108	80-120			
Cobalt	1.43	0.0436	ng/m³ Air	1.3829		104	80-120			
Copper	28.4	2.63	ng/m³ Air	27.658		103	80-120			

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4E1406 - ICP-MS Extraction										
LCS (B4E1406-BS1) Continued				Prepared & Analyzed: 05/14/24						
Lead	13.6	0.214	ng/m³ Air	13.829		98.1	80-120			
Manganese	8.01	1.89	ng/m³ Air	8.2975		96.5	80-120			
Molybdenum	1.54	0.359	ng/m³ Air	1.3829		111	80-120			
Nickel	3.04	0.652	ng/m³ Air	2.7658		110	80-120			
Selenium	2.74	0.00896	ng/m³ Air	2.7658		98.9	80-120			
Thallium	0.132	5.89E-4	ng/m³ Air	0.13829		95.6	80-120			
Vanadium	2.73	0.0529	ng/m³ Air	2.7658		98.7	80-120			
Zinc	128	76.8	ng/m³ Air	82.975		154	80-120			
LCS (B4E1406-BS2)				Prepared & Analyzed: 05/14/24						
Antimony	0.660	0.0386	ng/m³ Air	1.3829		47.7	80-120			SL
Arsenic	2.58	0.00937	ng/m³ Air	2.7658		93.1	80-120			
Barium	29.0	1.07	ng/m³ Air	27.658		105	80-120			
Beryllium	1.27	0.00320	ng/m³ Air	1.3829		92.1	80-120			
Cadmium	1.26	0.0741	ng/m³ Air	1.3829		90.9	80-120			
Chromium	14.7	2.21	ng/m³ Air	13.829		106	80-120			
Cobalt	1.46	0.0436	ng/m³ Air	1.3829		105	80-120			
Copper	28.0	2.63	ng/m³ Air	27.658		101	80-120			
Lead	13.1	0.214	ng/m³ Air	13.829		94.9	80-120			
Manganese	7.77	1.89	ng/m³ Air	8.2975		93.6	80-120			
Molybdenum	1.51	0.359	ng/m³ Air	1.3829		109	80-120			
Nickel	3.12	0.652	ng/m³ Air	2.7658		113	80-120			
Selenium	2.65	0.00896	ng/m³ Air	2.7658		95.6	80-120			
Thallium	0.129	5.89E-4	ng/m³ Air	0.13829		93.5	80-120			
Vanadium	2.63	0.0529	ng/m³ Air	2.7658		95.2	80-120			
Zinc	122	76.8	ng/m³ Air	82.975		147	80-120			
Duplicate (B4E1406-DUP1)		**Source: 4051340-16**		Prepared & Analyzed: 05/14/24						
Antimony	0.0849	0.0317	ng/m³ Air		0.0818			3.79	10	SL
Arsenic	0.206	0.00770	ng/m³ Air		0.233			12.5	10	
Barium	3.00	0.879	ng/m³ Air		3.06			1.73	10	
Beryllium	0.0188	0.00263	ng/m³ Air		0.0191			1.82	10	
Cadmium	ND	0.0609	ng/m³ Air		ND				10	U
Chromium	2.11	1.82	ng/m³ Air		2.15			1.92	10	
Cobalt	0.356	0.0358	ng/m³ Air		0.390			9.16	10	
Copper	38.3	2.16	ng/m³ Air		38.2			0.357	10	
Lead	0.562	0.176	ng/m³ Air		0.568			1.07	10	
Manganese	8.29	1.55	ng/m³ Air		8.39			1.13	10	
Molybdenum	2.10	0.295	ng/m³ Air		2.05			2.49	10	
Nickel	1.16	0.536	ng/m³ Air		1.18			2.39	10	

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4E1406 - ICP-MS Extraction										
Duplicate (B4E1406-DUP1) Continued			**Source: 4051340-16**		Prepared & Analyzed: 05/14/24					
Selenium	0.132	0.00736	ng/m³ Air		0.137			3.92	10	
Thallium	0.00125	4.84E-4	ng/m³ Air		0.00131			4.36	10	
Vanadium	0.945	0.0435	ng/m³ Air		0.968			2.39	10	
Zinc	ND	63.1	ng/m³ Air		ND				10	U
Duplicate (B4E1406-DUP2)			**Source: 4051340-02**		Prepared & Analyzed: 05/14/24					
Antimony	0.142	0.0313	ng/m³ Air		0.132			7.60	10	SL
Arsenic	0.437	0.00761	ng/m³ Air		0.408			6.73	10	
Barium	6.88	0.869	ng/m³ Air		6.79			1.27	10	
Beryllium	0.0178	0.00260	ng/m³ Air		0.0174			1.84	10	
Cadmium	ND	0.0602	ng/m³ Air		ND				10	U
Chromium	2.42	1.79	ng/m³ Air		2.52			4.36	10	
Cobalt	0.571	0.0354	ng/m³ Air		0.533			6.82	10	
Copper	43.9	2.14	ng/m³ Air		42.3			3.75	10	
Lead	1.34	0.174	ng/m³ Air		1.33			0.760	10	
Manganese	16.5	1.53	ng/m³ Air		15.4			6.84	10	
Molybdenum	2.21	0.291	ng/m³ Air		2.11			4.18	10	
Nickel	1.98	0.529	ng/m³ Air		1.93			2.50	10	
Selenium	0.270	0.00727	ng/m³ Air		0.255			5.72	10	
Thallium	0.00224	4.78E-4	ng/m³ Air		0.00226			0.937	10	
Vanadium	2.04	0.0430	ng/m³ Air		2.00			2.09	10	
Zinc	ND	62.4	ng/m³ Air		ND				10	U
Duplicate (B4E1406-DUP3)			**Source: 4051340-28**		Prepared: 05/14/24 Analyzed: 05/15/24					
Antimony	0.145	0.0352	ng/m³ Air		0.146			0.914	10	SL
Arsenic	1.15	0.00855	ng/m³ Air		1.15			0.287	10	
Barium	10.2	0.977	ng/m³ Air		10.3			1.32	10	
Beryllium	0.0341	0.00292	ng/m³ Air		0.0332			2.87	10	
Cadmium	ND	0.0676	ng/m³ Air		ND				10	U
Chromium	5.44	2.02	ng/m³ Air		5.47			0.514	10	
Cobalt	1.20	0.0398	ng/m³ Air		1.19			0.717	10	
Copper	46.9	2.40	ng/m³ Air		46.9			0.0427	10	
Lead	2.14	0.195	ng/m³ Air		2.16			0.521	10	
Manganese	43.2	1.73	ng/m³ Air		43.2			0.0469	10	
Molybdenum	1.87	0.328	ng/m³ Air		1.87			0.288	10	
Nickel	3.76	0.595	ng/m³ Air		3.76			0.0698	10	
Selenium	0.311	0.00818	ng/m³ Air		0.309			0.600	10	LL, QB-04
Thallium	0.00292	5.38E-4	ng/m³ Air		0.00308			5.42	10	
Vanadium	3.29	0.0483	ng/m³ Air		3.31			0.738	10	
Zinc	ND	70.1	ng/m³ Air		ND				10	U

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4E1406 - ICP-MS Extraction										
Duplicate (B4E1406-DUP4)		**Source: 4051340-05**		Prepared: 05/14/24 Analyzed: 05/15/24						
Antimony	0.0760	0.0325	ng/m³ Air		0.0765			0.612	10	SL
Arsenic	0.933	0.00789	ng/m³ Air		0.938			0.577	10	
Barium	7.13	0.901	ng/m³ Air		7.21			1.14	10	
Beryllium	0.0274	0.00269	ng/m³ Air		0.0281			2.36	10	
Cadmium	ND	0.0624	ng/m³ Air		ND				10	U
Chromium	5.60	1.86	ng/m³ Air		5.65			0.860	10	
Cobalt	1.45	0.0367	ng/m³ Air		1.46			0.942	10	
Copper	228	2.21	ng/m³ Air		229			0.255	10	
Lead	0.575	0.180	ng/m³ Air		0.577			0.330	10	
Manganese	31.6	1.59	ng/m³ Air		31.8			0.338	10	
Molybdenum	13.2	0.302	ng/m³ Air		13.2			0.620	10	
Nickel	4.99	0.549	ng/m³ Air		5.01			0.549	10	
Selenium	0.197	0.00754	ng/m³ Air		0.205			4.09	10	
Thallium	0.00195	4.96E-4	ng/m³ Air		0.00196			0.433	10	
Vanadium	3.37	0.0445	ng/m³ Air		3.37			0.0372	10	
Zinc	ND	64.7	ng/m³ Air		ND				10	U
Matrix Spike (B4E1406-MS1)		**Source: 4051340-16**		Prepared & Analyzed: 05/14/24						
Antimony	0.682	0.0317	ng/m³ Air	1.1365	0.0818	52.8	80-120			SL
Arsenic	2.36	0.00770	ng/m³ Air	2.2729	0.233	93.6	80-120			
Barium	27.3	0.879	ng/m³ Air	22.729	3.06	107	80-120			
Beryllium	1.08	0.00263	ng/m³ Air	1.1365	0.0191	93.1	80-120			
Cadmium	1.06	0.0609	ng/m³ Air	1.1365	ND	92.9	80-120			
Chromium	12.9	1.82	ng/m³ Air	11.365	2.15	94.4	80-120			
Cobalt	1.48	0.0358	ng/m³ Air	1.1365	0.390	95.8	80-120			
Copper	59.7	2.16	ng/m³ Air	22.729	38.2	94.6	80-120			
Lead	11.7	0.176	ng/m³ Air	11.365	0.568	98.2	80-120			
Manganese	14.3	1.55	ng/m³ Air	6.8188	8.39	86.3	80-120			
Molybdenum	3.14	0.295	ng/m³ Air	1.1365	2.05	95.6	80-120			
Nickel	3.37	0.536	ng/m³ Air	2.2729	1.18	96.0	80-120			
Selenium	2.34	0.00736	ng/m³ Air	2.2729	0.137	97.1	80-120			
Thallium	0.109	4.84E-4	ng/m³ Air	0.11365	0.00131	94.7	80-120			
Vanadium	3.12	0.0435	ng/m³ Air	2.2729	0.968	94.8	80-120			
Zinc	90.8	63.1	ng/m³ Air	68.188	ND	133	80-120			
Matrix Spike (B4E1406-MS2)		**Source: 4051340-02**		Prepared & Analyzed: 05/14/24						
Antimony	0.757	0.0313	ng/m³ Air	1.1228	0.132	55.7	80-120			SL
Arsenic	2.54	0.00761	ng/m³ Air	2.2456	0.408	95.1	80-120			
Barium	30.7	0.869	ng/m³ Air	22.456	6.79	107	80-120			
Beryllium	1.19	0.00260	ng/m³ Air	1.1228	0.0174	104	80-120			

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Batch B4E1406 - ICP-MS Extraction										
Matrix Spike (B4E1406-MS2) Continued Source: 4051340-02 Prepared & Analyzed: 05/14/24										
Cadmium	1.06	0.0602	ng/m³ Air	1.1228	ND	94.3	80-120			
Chromium	13.2	1.79	ng/m³ Air	11.228	2.52	95.2	80-120			
Cobalt	1.68	0.0354	ng/m³ Air	1.1228	0.533	102	80-120			
Copper	63.6	2.14	ng/m³ Air	22.456	42.3	95.0	80-120			
Lead	12.4	0.174	ng/m³ Air	11.228	1.33	98.4	80-120			
Manganese	21.6	1.53	ng/m³ Air	6.7368	15.4	92.7	80-120			
Molybdenum	3.16	0.291	ng/m³ Air	1.1228	2.11	92.7	80-120			
Nickel	4.15	0.529	ng/m³ Air	2.2456	1.93	98.9	80-120			
Selenium	2.41	0.00727	ng/m³ Air	2.2456	0.255	95.9	80-120			
Thallium	0.108	4.78E-4	ng/m³ Air	0.11228	0.00226	94.3	80-120			
Vanadium	4.11	0.0430	ng/m³ Air	2.2456	2.00	93.7	80-120			
Zinc	106	62.4	ng/m³ Air	67.368	ND	157	80-120			
Matrix Spike Dup (B4E1406-MSD1) Source: 4051340-16 Prepared & Analyzed: 05/14/24										
Antimony	0.720	0.0317	ng/m³ Air	1.1365	0.0818	56.1	80-120	5.31	20	SL
Arsenic	2.40	0.00770	ng/m³ Air	2.2729	0.233	95.3	80-120	1.60	20	
Barium	27.7	0.879	ng/m³ Air	22.729	3.06	109	80-120	1.68	20	
Beryllium	0.995	0.00263	ng/m³ Air	1.1365	0.0191	85.9	80-120	7.92	20	
Cadmium	1.08	0.0609	ng/m³ Air	1.1365	ND	94.7	80-120	1.90	20	
Chromium	13.2	1.82	ng/m³ Air	11.365	2.15	97.6	80-120	2.77	20	
Cobalt	1.49	0.0358	ng/m³ Air	1.1365	0.390	96.6	80-120	0.581	20	
Copper	58.4	2.16	ng/m³ Air	22.729	38.2	89.2	80-120	2.10	20	
Lead	11.8	0.176	ng/m³ Air	11.365	0.568	99.0	80-120	0.787	20	
Manganese	14.5	1.55	ng/m³ Air	6.8188	8.39	89.3	80-120	1.41	20	
Molybdenum	3.20	0.295	ng/m³ Air	1.1365	2.05	101	80-120	2.04	20	
Nickel	3.37	0.536	ng/m³ Air	2.2729	1.18	96.3	80-120	0.203	20	
Selenium	2.38	0.00736	ng/m³ Air	2.2729	0.137	98.7	80-120	1.50	20	
Thallium	0.112	4.84E-4	ng/m³ Air	0.11365	0.00131	97.3	80-120	2.69	20	
Vanadium	3.17	0.0435	ng/m³ Air	2.2729	0.968	97.1	80-120	1.61	20	
Zinc	85.7	63.1	ng/m³ Air	68.188	ND	126	80-120	5.77	20	
Matrix Spike Dup (B4E1406-MSD2) Source: 4051340-02 Prepared & Analyzed: 05/14/24										
Antimony	0.755	0.0313	ng/m³ Air	1.1228	0.132	55.6	80-120	0.195	20	SL
Arsenic	2.61	0.00761	ng/m³ Air	2.2456	0.408	97.8	80-120	2.39	20	
Barium	31.1	0.869	ng/m³ Air	22.456	6.79	108	80-120	1.09	20	
Beryllium	1.13	0.00260	ng/m³ Air	1.1228	0.0174	98.8	80-120	5.41	20	
Cadmium	1.06	0.0602	ng/m³ Air	1.1228	ND	94.8	80-120	0.540	20	
Chromium	13.4	1.79	ng/m³ Air	11.228	2.52	96.5	80-120	1.09	20	
Cobalt	1.69	0.0354	ng/m³ Air	1.1228	0.533	103	80-120	0.891	20	
Copper	66.5	2.14	ng/m³ Air	22.456	42.3	108	80-120	4.39	20	

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

FILE #: 4205.00.003.001
REPORTED: 05/21/24 15:55
SUBMITTED: 05/13/24
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 B4E1406 - ICP-MS Extraction										
Matrix Spike Dup (B4E1406-MSD2) Contir		**Source: 4051340-02**			Prepared & Analyzed: 05/14/24					
Lead	12.4	0.174	ng/m³ Air	11.228	1.33	98.8	80-120	0.369	20	
Manganese	21.8	1.53	ng/m³ Air	6.7368	15.4	95.0	80-120	0.696	20	
Molybdenum	3.29	0.291	ng/m³ Air	1.1228	2.11	104	80-120	4.04	20	
Nickel	4.17	0.529	ng/m³ Air	2.2456	1.93	99.9	80-120	0.526	20	
Selenium	2.48	0.00727	ng/m³ Air	2.2456	0.255	99.1	80-120	2.94	20	
Thallium	0.109	4.78E-4	ng/m³ Air	0.11228	0.00226	94.8	80-120	0.582	20	
Vanadium	4.17	0.0430	ng/m³ Air	2.2456	2.00	96.7	80-120	1.62	20	
Zinc	104	62.4	ng/m³ Air	67.368	ND	154	80-120	1.80	20	
Post Spike (B4E1406-PS1)		**Source: 4051340-16**			Prepared & Analyzed: 05/14/24					
Antimony	0.306	0.0317	ng/m³ Air	0.22729	0.0818	98.7	75-125			SL
Arsenic	1.31	0.00770	ng/m³ Air	1.1365	0.233	94.4	75-125			
Barium	5.48	0.879	ng/m³ Air	2.2729	3.06	106	75-125			
Beryllium	0.238	0.00263	ng/m³ Air	0.22729	0.0191	96.4	75-125			
Cadmium	0.124	0.0609	ng/m³ Air	0.11365	ND	109	75-125			
Chromium	3.20	1.82	ng/m³ Air	1.1365	2.15	91.8	75-125			
Cobalt	0.605	0.0358	ng/m³ Air	0.22729	0.390	94.4	75-125			
Copper	48.9	2.16	ng/m³ Air	11.365	38.2	94.3	75-125			
Lead	23.0	0.176	ng/m³ Air	22.729	0.568	98.8	75-125			
Manganese	10.3	1.55	ng/m³ Air	2.2729	8.39	84.2	75-125			
Molybdenum	3.09	0.295	ng/m³ Air	1.1365	2.05	91.1	75-125			
Nickel	3.42	0.536	ng/m³ Air	2.2729	1.18	98.3	75-125			
Selenium	1.25	0.00736	ng/m³ Air	1.1365	0.137	97.6	75-125			
Thallium	0.0572	4.84E-4	ng/m³ Air	5.6823E-2	0.00131	98.3	75-125			
Vanadium	2.05	0.0435	ng/m³ Air	1.1365	0.968	94.9	75-125			
Zinc	ND	63.1	ng/m³ Air	22.729	ND		75-125			U
Post Spike (B4E1406-PS2)		**Source: 4051340-02**			Prepared & Analyzed: 05/14/24					
Antimony	0.361	0.0313	ng/m³ Air	0.22456	0.132	102	75-125			SL
Arsenic	1.50	0.00761	ng/m³ Air	1.1228	0.408	96.9	75-125			
Barium	9.31	0.869	ng/m³ Air	2.2456	6.79	112	75-125			
Beryllium	0.234	0.00260	ng/m³ Air	0.22456	0.0174	96.3	75-125			
Cadmium	0.141	0.0602	ng/m³ Air	0.11228	ND	125	75-125			
Chromium	3.67	1.79	ng/m³ Air	1.1228	2.52	102	75-125			
Cobalt	0.774	0.0354	ng/m³ Air	0.22456	0.533	107	75-125			
Copper	54.7	2.14	ng/m³ Air	11.228	42.3	111	75-125			
Lead	23.7	0.174	ng/m³ Air	22.456	1.33	99.7	75-125			
Manganese	17.8	1.53	ng/m³ Air	2.2456	15.4	109	75-125			
Molybdenum	3.23	0.291	ng/m³ Air	1.1228	2.11	98.9	75-125			
Nickel	4.26	0.529	ng/m³ Air	2.2456	1.93	104	75-125			

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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 B4E1406 - ICP-MS Extraction										
Post Spike (B4E1406-PS2) Continued		**Source: 4051340-02**		Prepared & Analyzed: 05/14/24						
Selenium	1.32	0.00727	ng/m³ Air	1.1228	0.255	95.0	75-125			
Thallium	0.0563	4.78E-4	ng/m³ Air	5.6140E-2	0.00226	96.3	75-125			
Vanadium	3.10	0.0430	ng/m³ Air	1.1228	2.00	97.7	75-125			
Zinc	72.6	62.4	ng/m³ Air	22.456	ND	323	75-125			
Dilution Check (B4E1406-SRL1)		**Source: 4051340-16**		Prepared & Analyzed: 05/14/24						
Antimony	ND	0.159	ng/m³ Air		ND				10	SL, U
Arsenic	0.231	0.0385	ng/m³ Air		0.233			0.857	10	
Barium	ND	4.40	ng/m³ Air		ND				10	U
Beryllium	0.0188	0.0131	ng/m³ Air		0.0191			1.80	10	
Cadmium	ND	0.304	ng/m³ Air		ND				10	U
Chromium	ND	9.08	ng/m³ Air		ND				10	U
Cobalt	0.388	0.179	ng/m³ Air		0.390			0.629	10	
Copper	39.4	10.8	ng/m³ Air		38.2			3.11	10	
Lead	ND	0.879	ng/m³ Air		ND				10	U
Manganese	8.32	7.77	ng/m³ Air		8.39			0.800	10	
Molybdenum	2.00	1.48	ng/m³ Air		2.05			2.35	10	
Nickel	ND	2.68	ng/m³ Air		ND				10	U
Selenium	0.137	0.0368	ng/m³ Air		0.137			0.0297	10	
Thallium	0.00271	0.00242	ng/m³ Air		ND			69.6	10	
Vanadium	0.967	0.217	ng/m³ Air		0.968			0.113	10	
Zinc	ND	316	ng/m³ Air		ND				10	U
Dilution Check (B4E1406-SRL2)		**Source: 4051340-02**		Prepared & Analyzed: 05/14/24						
Antimony	ND	0.157	ng/m³ Air		ND				10	SL, U
Arsenic	0.406	0.0380	ng/m³ Air		0.408			0.573	10	
Barium	6.71	4.34	ng/m³ Air		6.79			1.22	10	
Beryllium	0.0181	0.0130	ng/m³ Air		0.0174			3.64	10	
Cadmium	ND	0.301	ng/m³ Air		ND				10	U
Chromium	ND	8.97	ng/m³ Air		ND				10	U
Cobalt	0.535	0.177	ng/m³ Air		0.533			0.390	10	
Copper	45.2	10.7	ng/m³ Air		42.3			6.70	10	
Lead	1.29	0.869	ng/m³ Air		1.33			3.05	10	
Manganese	15.5	7.67	ng/m³ Air		15.4			0.860	10	
Molybdenum	2.11	1.46	ng/m³ Air		2.11			0.255	10	
Nickel	ND	2.65	ng/m³ Air		ND				10	U
Selenium	0.267	0.0364	ng/m³ Air		0.255			4.42	10	
Thallium	0.00420	0.00239	ng/m³ Air		ND			59.9	10	
Vanadium	1.98	0.215	ng/m³ Air		2.00			1.05	10	
Zinc	ND	312	ng/m³ Air		ND				10	U

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REPORTED: 05/21/24 15:55
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AQS SITE CODE:
SITE CODE: Lahaina fires

Notes and Definitions

U	Under Detection Limit
SL	The spike recovery was outside acceptance limits. Reported value may be biased low.
QX	Compound does not meet QC criteria. Results should be considered an estimate.
QB-04	Analyte exceeds continuing calibration blank criteria
LL	Analyte identified; Reported value may be biased low.
LJ	Identification of analyte is acceptable; reported value is an estimate.
FB-01	Analyte exceeds Field Blank criteria.
D	This result obtained by dilution.
BR	Sample Value Below Acceptable Range
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 05/23/2024 and Shanna Vasser 05/24/2024
Laboratory: Eastern Research Group – Morrisville, NC
Collection date(s): 05/02/2024 – 05/08/2024
Report No: 4051340

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

Discrepancies:

4. MFL-AM01-050224-HM and MFL-AM01-050524-HM were listed on the CoC, crossed out, voided, and not shipped to the laboratory due to insufficient sample volume. MFL-AM01-050624-HM, MFL-AM-01-050724-HM, and MFL-AM01-050824-HM were not included on the CoC, sampled, or sent to the laboratory. No results were present in the laboratory report for any of these samples.
13. Field blank detections above the method detection limit were reported for barium in MFL-FB01-050324-HM and barium and nickel in MFL-FB01-050524-HM

Notes:

2. The laboratory stated that all samples were received in acceptable condition unless otherwise noted. MFL-AM03-050224-HM, MFL-AM03-050324-HM, MFL-AM04-050324-HM, MFL-AM01-050424-HM, MFL-AM04-050424-HM, MFL-AM03-050524-HM/MS/MS, MFL-AM02-

050624-HM, and MFL-AM03-050724-HM were nonhomogeneous samples. MFL-AM02-050324-HM and MFL-AM03-050524-HM/MS/MS were refolding samples. There were no additional details; therefore, it is assumed the other samples met method criteria for analysis.

7. MFL-AM01-050424-HM was analyzed at a two-fold dilution for vanadium.