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

Lahaina, Maui

February 29 through March 6, 2024
[Report Updated: 8/23/2024]

Tetra Tech, Inc. (Tetra Tech) prepared a Community Air Monitoring and Sampling Plan (CAMSP) to address community air monitoring during debris removal operations in response to the 2023 Maui Wildfires. Air monitoring and sampling occurred from February 29 through March 6, 2024, at the four community locations across Lahaina listed below and shown on **Figure 1**:

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

The CAMSP addresses ambient community air monitoring and sampling to assess conditions and determine whether debris removal activities, managed by the U.S. Army Corps of Engineers (USACE), significantly affect air quality in Lahaina. The State of Hawaii Department of Health, Clean Air Branch (HDOH) receives acquired data via an online shared site, and information conveyed in these weekly reports. Air monitoring and sampling as prescribed in the CAMSP will continue until completion of debris removal activities or until HDOH advises otherwise.

Air quality monitoring for particulate matter proceeded at all four community locations over a 24-hour period each day in accordance with the CAMSP. Intent of ambient air monitoring was to assess presence of airborne particulates with particle size diameter of 10 micrometers (µm)—the size recognized as small enough for inhalation into a person's lungs. This particle size diameter is a parameter for health evaluations, identified as "PM_{10}". Monitoring for PM_{10} occurred 24 hours a day, 7 days a week from February 29 through March 6 at each community location. Monitoring results were compared to the National Ambient Air Quality Standard (NAAQS) for PM_{10}, which is a 24-hour time-weighted average of 150 µm per cubic meter ($\mu m/m^3$).

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

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

Air Monitoring Results:

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

Air Sampling Results

A total of 28 samples for asbestos fibers were collected throughout this reporting period. All analytical results were below the SSAL of 0.003 fibers per cubic centimeter (fibers/cc) and below the laboratory's analytical sensitivity. **Table 2** lists results. Notably, the laboratory commented "Numerous gypsum fibers present" regarding samples collected at the following monitoring stations:

- Leialii Hawaiian Homelands on February 29 through March 6
- WW Pump Station #4 on February 29 through March 6
- Lahaina Intermediate School on February 29 through March 6
- Lahaina Boys & Girls Club on February 29 through March 6

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

An exceedance of the nickel SSAL was reported for the March 4 sample at Leialii Hawaiian Homelands. The sample result was 0.0544 $\mu g/m^3$ as compared to the nickel SSAL of 0.02 $\mu g/m^3$. This sample was collected over an approximate 24-hour sampling period between March 3 and March 4, 2024. To determine possible sources of this exceedance, Tetra Tech utilized field observations, weather data, and crew dispatch information.

Particulate levels were relatively low on March 3, with the highest reading of 17.6 $\mu g/m^3$ noted at 11:00 am. Wind speeds were also generally low averaging about 1 mph, with an average wind direction originating from the southeast. Wind speeds were somewhat variable, with gusts up to 2.6 mph observed in 5 - 40 minute intervals. Two USACE debris crews were scheduled to work near the sample location on March 3, with one crew located approximately 600 ft south-southeast and the other approximately 1,000 ft south-southwest from the sampling location.

Particulate levels were relatively low on March 4, with the highest reading of 19.3 $\mu g/m^3$ noted at 9:00 am. USACE debris crews were scheduled to work at the same two properties on March 4 (approximately 600 and 1,000 ft away from the sampling location). Wind speeds were generally low with an average of 0.8 mph, and an average wind direction originating from the southeast. Wind speeds were somewhat variable, with gusts up to 2 mph observed in 5 - 40 minute intervals.

Based on the nature of the work, proximity of the debris removal activities to the sample location, and wind direction, there is a potential that debris removal operations were the cause of this exceedance. However, no obvious signs of visible dust, variance in work practices, or pertinent weather patterns were observed. General environmental factors which may have caused or contributed to this nickel exceedance include grinding/cutting any metal construction materials, fertilizers, burning of waste, tobacco smoke, and oil/coal burning power generators.

Except for this nickel exceedance, all ambient air samples from all community sampling locations yielded low levels of metals, all below SSALs.

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

After discussion with HDOH, the sample with exceeded nickel concentration was re-analyzed by the laboratory to verify concentrations. This report has been updated to incorporate the re-analyzed lab

results. The re-analyzed data are presented and discussed in the attached **Addendum to the Weekly Report.**

Meteorological Summary

Overall wind conditions during this weekly event averaged 1.2 miles per hour originating in a south, southeast direction. **Table 3** summarizes meteorological data**.**

Quality Control Summary:

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

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

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

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

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

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

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

State of Hawaii, Department of Health, Clean Air Branch
2023 Maui Wildfires

Addendum to Ambient Community Air Monitoring and Sampling Weekly Report
Lahaina, Maui
February 29 through March 6, 2024

The weekly report presenting community air monitoring and sampling results from February 29 through March 6, 2024, reported a nickel concentration of 0.0544 micrograms per cubic meter (µg/m^3) in the sample collected from the Leialii Hawaiian Homelands on March 4, 2024, which exceeded the Site Screening Action Levels (SSAL) of 0.02 µg/m^3, as presented in the CAMSP. No other samples showed exceedances of the SSAL. The sample was collected over an approximate 24-hour sampling period. This Addendum to the weekly report addresses the originally reported exceedance and the re-analyzed concentrations for the sample noted above.

Reported environmental conditions on March 4 included an average windspeed of 0.8 mile per hour (mph), generally originating from a southeast direction.

Particulate levels were relatively low on March 3, with the highest reading of 17.6 µg/m^3 noted at 11:00 am. Wind speeds were also generally low averaging about 1 mph, with an average wind direction originating from the southeast. Wind speeds were somewhat variable, with gusts up to 2.6 mph observed in 5 - 40 minute intervals. Two USACE debris crews were scheduled to work near the sample location on March 3, with one crew located approximately 600 ft south-southeast and the other approximately 1,000 ft south-southwest from the sampling location.

Particulate levels also were relatively low on March 4, with the highest reading of 19.3 µg/m^3 noted at 9:00 am. USACE debris crews were scheduled to work at the same two properties on March 4 (approximately 600 and 1,000 ft away from the sampling location). Wind speeds were generally low with an average of 0.8 mph, and an average wind direction originating from the southeast. Wind speeds were somewhat variable, with gusts up to 2 mph observed in 5 - 40 minute intervals.

Based on the nature of the work, proximity of the debris removal activities to the sample location, and wind direction, there is a potential that debris removal operations were the cause of this exceedance. However, no obvious signs of visible dust, variance in work practices, or pertinent weather patterns were observed. General environmental factors which may have caused or contributed to this nickel exceedance include grinding/cutting any metal construction materials, fertilizers, burning of waste, tobacco smoke, and oil/coal burning power generators.

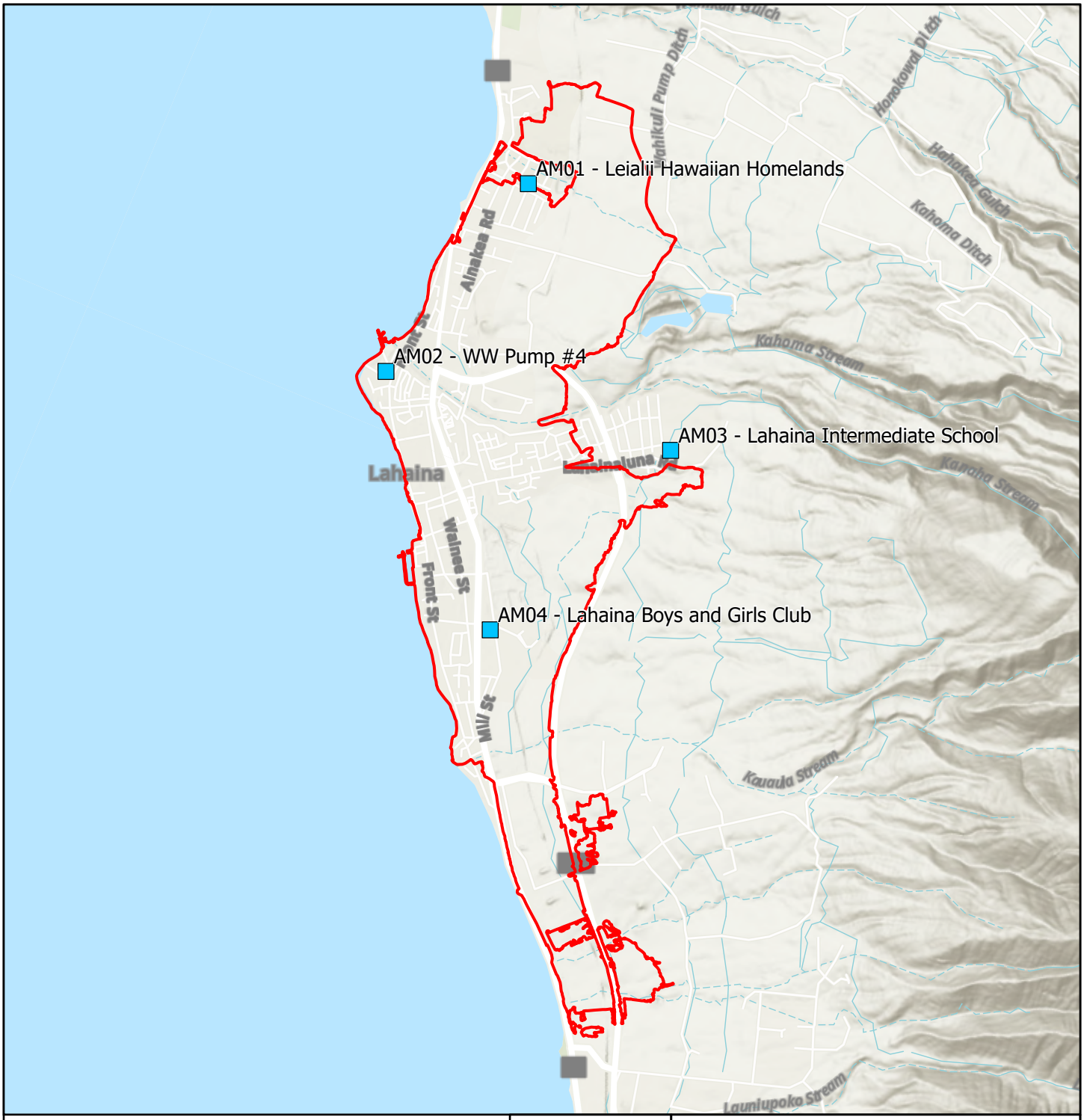
Following the reporting of the exceedance, and approval from HDOH, the nickel sample was re-analyzed by the laboratory to verify concentrations. A table showing the original results compared with the re-analyzed results can be found below:

Analyte		Nickel	Nickel (re-analysis)
Units		**µg/m^3**	**µg/m^3**
Screening Level*		0.02	0.02
3/4/2024	Leialii Hawaiian Homelands (AM-01)	**0.0544**	**0.0678**

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

The re-analysis showed some variance from the originally reported values and was able to verify the exceedance reported for the sample collected on March 4. A full table with the results for metals including the re-analyzed samples can be found in the Weekly Report in **Table 2**. The laboratory data sheets for re-analyzed metal samples results are included in the Weekly Report as **Appendix 1.**

Attachments



Air Sampling Locations

Lahaina Fire Perimeter

N

0 0.3 0.6
Miles

TETRA TECH

Figure 1
Air Sampling Locations

Hawaii DOH
2023 Lahaina Wildfire

Basemap: ESRI ArcGIS World Street Map

Table 1
HDOH CAB Ambient Community Monitoring and Sampling
Particulate Monitoring Results for PM_{10}
Maui Wildfire, Lahaina
2/29/2024 - 3/4/2024
[Report Updated: 8/23/2024]

Screening Level		**150 µg/m^3**
2/29/2024	Leialii Hawaiian Homelands (AM-01)	6.7
	WW Pump Station #4 (AM-02)	6.9
	Lahaina Intermediate School (AM-03)	8.1
	Lahaina Boys & Girls Club (AM-04)	5.5
3/1/2024	Leialii Hawaiian Homelands (AM-01)	7.6
	WW Pump Station #4 (AM-02)	9.5
	Lahaina Intermediate School (AM-03)	6.9
	Lahaina Boys & Girls Club (AM-04)	5.5
3/2/2024	Leialii Hawaiian Homelands (AM-01)	8.6
	WW Pump Station #4 (AM-02)	10
	Lahaina Intermediate School (AM-03)	7.3
	Lahaina Boys & Girls Club (AM-04)	6.6
3/3/2024	Leialii Hawaiian Homelands (AM-01)	6.1
	WW Pump Station #4 (AM-02)	7.8
	Lahaina Intermediate School (AM-03)	6.8
	Lahaina Boys & Girls Club (AM-04)	5.9
3/4/2024	Leialii Hawaiian Homelands (AM-01)	5.9
	WW Pump Station #4 (AM-02)	8.0
	Lahaina Intermediate School (AM-03)	7.4
	Lahaina Boys & Girls Club (AM-04)	7.0
3/5/2024	Leialii Hawaiian Homelands (AM-01)	7.6
	WW Pump Station #4 (AM-02)	13
	Lahaina Intermediate School (AM-03)	10
	Lahaina Boys & Girls Club (AM-04)	6.8
3/6/2024	Leialii Hawaiian Homelands (AM-01)	6.7
	WW Pump Station #4 (AM-02)	8.8
	Lahaina Intermediate School (AM-03)	7.6
	Lahaina Boys & Girls Club (AM-04)	5.9

Notes:

µg/m3 = micrograms per cubic meter

All Stations on February 18 are based off of a 23 hr TWA calculation

24 hour TWA calculation results are shown in two significant figures

Results are based on 24 hour TWA calculation

Results from Lahaina Intermediate School on 3/4 have been revised from previously submitted report.

Table 2
HDOH CAB Ambient Community Monitoring and Sampling
Analytical Sampling Results by Date
Maui Wildfire, Lahaina
2/29/2024-3/6/2024
[Report Updated: 8/23/2024]

Analyte		Asbestos	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Manganese	Molybdenum	Nickel	Nickel (re-analysis)	Selenium	Thallium
Units		**s/cc**	**µg/m³**	**µg/m³**	**µg/m³**	**µg/m³**	**µg/m³**	**µg/m³**	**µg/m³**	**µg/m³**	**µg/m³**	**µg/m³**	**µg/m³**	**µg/m³**	**µg/m³**	**µg/m³**	**µg/m³**
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	0.02	48	24
2/29/2024	Leialii Hawaiian Homelands (AM-01)	<0.0027	0.0000413	0.00119	0.00259	0.00000871	ND	0.00255	0.000292	0.0459	0.000464	0.00820	0.00259	0.000888		0.000102	0.00000119
	WW Pump Station #4 (AM-02)	<0.0024	0.0000895	0.000381	0.00512	0.0000151	ND	0.00285	0.000489	0.0360	0.000977	0.0125	0.00192	0.00185		0.000147	0.00000126
	Lahaina Intermediate School (AM-03)	<0.0027	0.0000427	0.000347	0.00279	0.0000138	ND	0.00214	0.000259	0.0326	0.000470	0.00660	0.00156	0.000781		0.000116	0.00000111
	Lahaina Boys & Girls Club (AM-04)	<0.0024	0.0000481	0.000161	0.00245	0.00000787	ND	0.00190	0.000211	0.0178	0.000669	0.00609	0.000903	0.000767		0.000113	0.000000826
3/1/2024	Leialii Hawaiian Homelands (AM-01)	<0.0028	0.0000342	0.000752	0.00244	0.00000695	ND	0.00223	0.000294	0.0548	0.000366	0.00733	0.00267	0.000844		0.000145	0.00000106
	WW Pump Station #4 (AM-02)	<0.0025	0.000181	0.000521	0.00562	0.0000121	0.0000706	0.00285	0.000321	0.0469	0.00128	0.0103	0.00225	0.00132		0.000188	0.00000125
	Lahaina Intermediate School (AM-03)	<0.0025	0.0000537	0.000212	0.00320	0.0000246	ND	0.00250	0.000391	0.0354	0.000506	0.00918	0.00193	0.00114		0.000170	0.00000109
	Lahaina Boys & Girls Club (AM-04)	<0.0025	0.0000444	0.000127	0.00226	0.00000578	ND	0.00184	0.000145	0.0180	0.000713	0.00443	0.000942	0.000658		0.000127	0.000000721
3/2/2024	Leialii Hawaiian Homelands (AM-01)	<0.0028	0.0000360	0.000551	0.00261	0.00000807	ND	0.00229	0.000291	0.0556	0.000440	0.00840	0.00278	0.000866		0.000134	0.00000127
	WW Pump Station #4 (AM-02)	<0.0025	0.000104	0.000657	0.00443	0.0000114	ND	0.00213	0.000276	0.0371	0.000916	0.00982	0.00195	0.000954		0.000163	0.00000134
	Lahaina Intermediate School (AM-03)	<0.0026	0.0000363	0.000186	0.00261	0.0000170	ND	0.00217	0.000296	0.0298	0.000442	0.00779	0.00184	0.000942		0.000146	0.00000124
	Lahaina Boys & Girls Club (AM-04)	<0.0025	0.0000440	0.000209	0.00311	0.0000105	ND	0.00224	0.000277	0.0233	0.000605	0.00846	0.00112	0.000952		0.000145	0.00000111
3/3/2024	Leialii Hawaiian Homelands (AM-01)	<0.0027	0.000109	0.00132	0.00344	0.00000762	ND	0.00249	0.000308	0.0623	0.000853	0.00845	0.00300	0.000897		0.000139	0.00000141
	WW Pump Station #4 (AM-02)	<0.0025	0.000211	0.00101	0.00765	0.0000250	ND	0.00370	0.000735	0.0697	0.00190	0.0228	0.00206	0.00213		0.000240	0.00000205
	Lahaina Intermediate School (AM-03)	<0.0026	0.0000326	0.000150	0.00163	0.00000730	ND	0.00187	0.000130	0.0360	0.000416	0.00365	0.00235	0.000660		0.000124	0.00000130
	Lahaina Boys & Girls Club (AM-04)	<0.0025	0.0000376	0.000153	0.00188	0.00000464	0.000646	0.00186	0.000116	0.0238	0.000383	0.00335	0.00123	0.000664		0.000106	0.000000928
3/4/2024	Leialii Hawaiian Homelands (AM-01)	<0.0027	0.0000471	0.000567	0.00248	0.00000583	ND	0.133	0.00165	0.0919	0.000908	0.0124	0.00473	**0.0544**	**0.0678**	0.000141	0.000000736
	WW Pump Station #4 (AM-02)	<0.0026	0.000124	0.000481	0.00413	0.0000104	ND	0.00215	0.000294	0.0369	0.000931	0.00822	0.00195	0.00103		0.000155	0.000000912
	Lahaina Intermediate School (AM-03)	<0.0025	0.0000500	0.000158	0.00220	0.0000170	ND	0.00207	0.000303	0.0360	0.000347	0.00750	0.00247	0.00101		0.000156	0.000000664
	Lahaina Boys & Girls Club (AM-04)	<0.0025	0.0000613	0.000240	0.00321	0.0000104	ND	0.00247	0.000270	0.0268	0.000719	0.00829	0.00134	0.000993		0.000152	0.000000924
3/5/2024	Leialii Hawaiian Homelands (AM-01)	<0.0027	0.0000718	0.00102	0.00385	0.0000128	ND	0.00642	0.000556	0.0621	0.000624	0.0134	0.00270	0.00260		0.000170	0.00000137
	WW Pump Station #4 (AM-02)	<0.0026	0.000148	0.000986	0.00672	0.0000239	0.000100	0.00422	0.000751	0.0507	0.00197	0.0216	0.00209	0.00247		0.000234	0.00000181
	Lahaina Intermediate School (AM-03)	<0.0025	0.0000545	0.000207	0.00318	0.0000224	ND	0.00300	0.000446	0.0397	0.000410	0.0110	0.00274	0.00125		0.000177	0.00000142
	Lahaina Boys & Girls Club (AM-04)	<0.0025	0.0000500	0.000206	0.00237	0.00000732	ND	0.00209	0.000202	0.0185	0.000549	0.00605	0.00124	0.000705		0.000147	0.000000993
3/6/2024	Leialii Hawaiian Homelands (AM-01)	<0.0025	0.0000633	0.000906	0.00584	0.0000243	ND	0.00741	0.00111	0.0411	0.000744	0.0319	0.00152	0.00303		0.000217	0.00000234
	WW Pump Station #4 (AM-02)	<0.0026	0.000159	0.00114	0.0109	0.0000451	0.000169	0.00665	0.00173	0.0396	0.00274	0.0460	0.00132	0.00519		0.000299	0.00000298
	Lahaina Intermediate School (AM-03)	<0.0025	0.0000453	0.000429	0.00816	0.000172	ND	0.00947	0.00213	0.0413	0.000707	0.0421	0.00204	0.00483		0.000376	0.00000276
	Lahaina Boys & Girls Club (AM-04)	<0.0025	0.0000779	0.000512	0.00430	0.0000195	0.000334	0.00336	0.000762	0.0224	0.00141	0.0173	0.000992	0.00163		0.000163	0.00000182
95% Upper Confidence Limit[2]		NA	0.0000900	0.000740	0.00469	0.0000240	0.00213	0.00683	0.000710	0.0471	0.00101	0.0164	0.00232	0.00328		0.000190	0.00000160

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

Asbestos sample results for 2/29 at all stations were updated by the lab after correcting a formula error for concentrations

Metals Exceedance

Table 2
HDOH CAB Ambient Community Monitoring and Sampling
Analytical Sampling Results by Date
Maui Wildfire, Lahaina
2/29/2024-3/6/2024
[Report Updated: 8/23/2024]

Vanadium	Zinc
µg/m^3	µg/m^3
0.24	1200
0.000790	ND
0.00129	ND
0.000626	ND
0.000553	ND
0.000736	ND
0.000983	ND
0.000931	ND
0.000418	ND
0.000867	ND
0.000925	ND
0.000815	ND
0.000819	ND
0.000795	ND
0.00216	ND
0.000335	ND
0.000290	ND
0.00127	ND
0.000973	ND
0.000867	ND
0.000864	ND
0.00133	ND
0.00211	ND
0.00107	ND
0.000543	ND
0.00287	ND
0.00457	ND
0.00509	ND
0.00138	ND
0.00166	NA

Table 3
State of Hawaii, Department of Health, Clean Air Branch
Meteorological Data
Maui Wildfires, Lahaina
February 29 through March 6, 2024
[Report Updated: 8/23/2024]

Date	Station ID	Weather Station Name	Wind Speed (mph)	Wind Direction (angle)	Temperature (°F)	Rel Humidity (%)	Baro Pressure (mBar)
2/29/2024	AM-01	Leialii Hawaiian Homelands	1.0	SE	77	60	762.1
2/29/2024	AM-02	WW Pump Station #4	1.0	SSE	76	63	764.1
2/29/2024	AM-03	Lahaina Intermediate School	1.1	SE	76	67	754.7
2/29/2024	AM-04	Lahaina Boys & Girls Club	1.2	S	77	64	763.9
3/1/2024	AM-01	Leialii Hawaiian Homelands	1.0	ESE	77	58	762.7
3/1/2024	AM-02	WW Pump Station #4	0.9	SE	74	66	764.9
3/1/2024	AM-03	Lahaina Intermediate School	1.1	SE	76	65	755.2
3/1/2024	AM-04	Lahaina Boys & Girls Club	1.1	S	76	65	764.5
3/2/2024	AM-01	Leialii Hawaiian Homelands	0.9	ESE	76	58	762.7
3/2/2024	AM-02	WW Pump Station #4	1.0	SSE	76	61	764.7
3/2/2024	AM-03	Lahaina Intermediate School	1.0	SE	76	63	755.3
3/2/2024	AM-04	Lahaina Boys & Girls Club	1.1	S	75	64	764.5
3/3/2024	AM-01	Leialii Hawaiian Homelands	1.0	SE	76	62	762.3
3/3/2024	AM-02	WW Pump Station #4	0.8	S	76	67	764.3
3/3/2024	AM-03	Lahaina Intermediate School	1.0	SE	76	67	754.8
3/3/2024	AM-04	Lahaina Boys & Girls Club	1.0	SSE	76	67	764.0
3/4/2024	AM-01	Leialii Hawaiian Homelands	0.8	SE	79	64	762.4
3/4/2024	AM-02	WW Pump Station #4	1.0	S	78	69	764.4
3/4/2024	AM-03	Lahaina Intermediate School	1.1	SSE	78	73	754.9
3/4/2024	AM-04	Lahaina Boys & Girls Club	1.2	S	78	70	764.1
3/5/2024	AM-01	Leialii Hawaiian Homelands	2.1	ESE	77	52	762.5
3/5/2024	AM-02	WW Pump Station #4	1.5	SE	78	54	764.4
3/5/2024	AM-03	Lahaina Intermediate School	1.5	SE	78	56	754.9
3/5/2024	AM-04	Lahaina Boys & Girls Club	1.4	SSE	78	55	764.1
3/6/2024	AM-01	Leialii Hawaiian Homelands	2.2	SSE	75	57	762.1
3/6/2024	AM-02	WW Pump Station #4	1.6	SE	77	55	764.1
3/6/2024	AM-03	Lahaina Intermediate School	1.7	SSE	76	59	754.5
3/6/2024	AM-04	Lahaina Boys & Girls Club	1.6	SSW	78	54	763.7

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

Appendix 1

Please note, comments pertaining to gypsum may be mentioned in the lab reports below. Gypsum is a common material used in drywall, plaster and cement so its presence in the sample filters is likely due to debris removal operations or other disturbances of built-environment fire debris. A more in-depth discussion can be found in the attached weekly report.

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

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EMSL Order:	042404634
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 / 103S864023206**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	03/06/2024 09:45 AM
Analysis Date:	03/07/2024
Report Date:	04/23/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM01-022924-AB**

EMSL Sample Number:	042404634-0001		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7040.7
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0009**		**Limit of Detection (Structures/cc):**	**0.0027**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Numerous gypsum fibers present.

Robyn Ray
Approved Signatory

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EMSL Order ID:	**042404634**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S864023206**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042404634-0001 **Customer Sample:** MFL-AM01-022924-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	F7	None Detected									
H5	B8	None Detected									
H6	B3	None Detected									
H6	I2	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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ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM02-022924-AB**

EMSL Sample Number:	042404634-0002		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:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	5			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Numerous gypsum fibers present.

Robyn Ray
Approved Signatory

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Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S864023206**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042404634-0002 **Customer Sample:** MFL-AM02-022924-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
I2	J9	None Detected									
I2	G7	None Detected									
I2	D8	None Detected									
I3	B3	None Detected									
I3	H2	None Detected									

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

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ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM03-022924-AB**

EMSL Sample Number:	042404634-0003		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	6767.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0009**		**Limit of Detection (Structures/cc):**	**0.0027**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Numerous gypsum fibers present.

Robyn Ray
Approved Signatory

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Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S864023206**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042404634-0003 **Customer Sample:** MFL-AM03-022924-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	I10	None Detected									
I5	G8	None Detected									
I5	C7	None Detected									
I6	C4	None Detected									
I6	H3	None Detected									

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

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Project ID:	N/A

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ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM04-022924-AB**

EMSL Sample Number:	042404634-0004		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7087.2
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
Chi² Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	5			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Numerous gypsum fibers present.

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Approved Signatory

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Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S864023206**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042404634-0004 **Customer Sample:** MFL-AM04-022924-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	B3	None Detected									
J1	F4	None Detected									
J1	I5	None Detected									
J2	I7	None Detected									
J2	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:	042404634
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Project ID:	N/A

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ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-022924-AB**

EMSL Sample Number:	042404634-0005		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**N/A**		**Limit of Detection (Structures/cc):**	**N/A**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Robyn Ray
Approved Signatory

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

EMSL Order ID:	**042404634**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S864023206**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042404634-0005 **Customer Sample:** MFL-FB01-022924-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	J6	None Detected									
J5	H5	None Detected									
J5	F4	None Detected									
J5	D5	None Detected									
J5	B6	None Detected									
J6	A8	None Detected									
J6	C7	None Detected									
J6	E7	None Detected									
J6	G10	None Detected									
J7	J1	None Detected									

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

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

EMSL Order:	042404634
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 / 103S864023206**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	03/06/2024 09:45 AM
Analysis Date:	03/07/2024
Report Date:	04/23/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

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

EMSL Sample Number:	042404634-0006		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.001			

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

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Robyn Ray
Approved Signatory

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

EMSL Order ID: 042404634
Client: Tetra Tech
Project ID: Maui Fires - Lahaina / 103S864023206

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042404634-0006 **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					
H2	A5	None Detected									
H2	C6	None Detected									
H2	E7	None Detected									
H2	G8	None Detected									
H2	I6	None Detected									
H4	A7	None Detected									
H4	C7	None Detected									
H4	E8	None Detected									
H4	G7	None Detected									
H4	I6	None Detected									

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

OrderID: 042404634

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL Order Number / Lab Use Only

#042404634

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 / 1035864023206
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:	Elise Kenyon Sublette
Sampled By Signature:	
No. of Samples in Shipment	5

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
2024 MAR -6 A 11:14
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-AM01-022924-AB		7,040.726	02/29/24 1101
MFL-AM02-022924-AB		7,259.467	02/29/24 1117
MFL-AM03-022924-AB		6,767.046	02/29/24 1315
MFL-AM04-022924-AB		7,087.220	02/29/24 1336
MFL-FB01-022924-AB		0	02/29/24 1200

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

All samples received acceptable for analysis.

Method of Shipment:	FedEx		Sample Condition Upon Receipt:		
Relinquished by:		Date/Time: 03/04/24 1100	Received by: FX	Date/Time 3/6/24 945 AM	
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.

(5) AP

Stage 1 Data Verification Checklist – Asbestos

HDOH CAB – Ambient Community Air Sampling – Lahaina

Task Order No. 23141

Reviewed by:
Kierra Johnson 4/23/2024 and Shanna Vasser 4/24/2024
Laboratory: EMSL Analytical, Inc. – North Cinnaminson, NJ
Collection date(s): 2/29/2024
Report No: 42404634

√	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:

1. Report was revised 20 4/23/2024 to correct the formula error for concentrations.

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:	042404627
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	

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

Project: **Maui Fires - Lahaina / 103S9230**

Phone:	(703) 489-2674
Fax:	
Received Date:	03/06/2024 09:45 AM
Analysis Date:	03/07/2024
Report Date:	03/12/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM01-030124-AB**		**Sample Description:**	
EMSL Sample Number:	042404627-0001		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	6527.6
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0128
Chi² Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0009**		**Limit of Detection (Structures/cc):**	**0.0028**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected		Density	Concentration	95 % Confidence Interval (S/cc)	
		Primary	Total	(S/mm²)	(S/cc)	Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.72**	**< 0.0028**	**Not Applicable**	**- 0.0028**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0028**	**Not Applicable**	**- 0.0028**
Actinolite	ADX	0	0	< 46.72	< 0.0028	Not Applicable	- 0.0028
Amosite	ADX	0	0	< 46.72	< 0.0028	Not Applicable	- 0.0028
Anthophyllite	ADX	0	0	< 46.72	< 0.0028	Not Applicable	- 0.0028
Crocidolite	ADX	0	0	< 46.72	< 0.0028	Not Applicable	- 0.0028
Tremolite	ADX	0	0	< 46.72	< 0.0028	Not Applicable	- 0.0028
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0028**	**Not Applicable**	**- 0.0028**
Other Minerals	-	0	0	< 46.72	< 0.0028	Not Applicable	- 0.0028
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 0.0028**	**Not Applicable**	**- 0.0028**

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

	Minimum ID Level	Structures Detected		Density	Concentration	95 % Confidence Interval (S/cc)	
		Primary	Total	(S/mm²)	(S/cc)	Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 46.72**	**< 0.0028**	**Not Applicable**	**- 0.0028**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0028**	**Not Applicable**	**- 0.0028**
Actinolite	ADX	0	0	< 46.72	< 0.0028	Not Applicable	- 0.0028
Amosite	ADX	0	0	< 46.72	< 0.0028	Not Applicable	- 0.0028
Anthophyllite	ADX	0	0	< 46.72	< 0.0028	Not Applicable	- 0.0028
Crocidolite	ADX	0	0	< 46.72	< 0.0028	Not Applicable	- 0.0028
Tremolite	ADX	0	0	< 46.72	< 0.0028	Not Applicable	- 0.0028
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0028**	**Not Applicable**	**- 0.0028**
Other Minerals	-	0	0	< 46.72	< 0.0028	Not Applicable	- 0.0028
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.72**	**< 0.0028**	**Not Applicable**	**- 0.0028**

Comment
Numerous gypsum fibers present.


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:	**042404627**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S9230**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042404627-0001 **Customer Sample:** MFL-AM01-030124-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	A4	None Detected									
A5	D5	None Detected									
A5	I6	None Detected									
A6	H4	None Detected									
A6	C5	None Detected									

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

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

EMSL Order:	042404627
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	

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

Project: **Maui Fires - Lahaina / 103S9230**

Phone:	(703) 489-2674
Fax:	
Received Date:	03/06/2024 09:45 AM
Analysis Date:	03/07/2024
Report Date:	03/12/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-030124-AB**		**Sample Description:**	
EMSL Sample Number:	042404627-0002		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7195.7
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0128
Chi² Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0025**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected		Density	Concentration	95 % Confidence Interval (S/cc)	
		Primary	Total	(S/mm²)	(S/cc)	Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**

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

	Minimum ID Level	Structures Detected		Density	Concentration	95 % Confidence Interval (S/cc)	
		Primary	Total	(S/mm²)	(S/cc)	Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**

Comment
Numerous gypsum fibers present.


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:	**042404627**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S9230**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042404627-0002 **Customer Sample:** MFL-AM02-030124-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
B2	A6	None Detected									
B2	D7	None Detected									
B2	I5	None Detected									
B3	C5	None Detected									
B3	I6	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:	042404627
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	

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

Project: **Maui Fires - Lahaina / 103S9230**

Phone:	(703) 489-2674
Fax:	
Received Date:	03/06/2024 09:45 AM
Analysis Date:	03/07/2024
Report Date:	03/12/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-030124-AB**		**Sample Description:**	
EMSL Sample Number:	042404627-0003		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7255.9
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0128
Chi² Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0025**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**

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

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**

Comment
Numerous gypsum fibers present.


Approved Signatory

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

EMSL Order ID:	**042404627**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S9230**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042404627-0003 **Customer Sample:** MFL-AM03-030124-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	A6	None Detected									
B5	E7	None Detected									
B5	H8	None Detected									
B6	C9	None Detected									
B6	I7	None Detected									

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

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EMSL Order:	042404627
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	

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

Project: **Maui Fires - Lahaina / 103S9230**

Phone:	(703) 489-2674
Fax:	
Received Date:	03/06/2024 09:45 AM
Analysis Date:	03/07/2024
Report Date:	03/12/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM04-030124-AB**		**Sample Description:**	
EMSL Sample Number:	042404627-0004		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7175.9
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0128
Chi² Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0025**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**

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

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**

Comment
Numerous gypsum fibers present.


Approved Signatory

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EMSL Order ID:	**042404627**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S9230**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042404627-0004 **Customer Sample:** MFL-AM04-030124-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
C2	A5	None Detected									
C2	D4	None Detected									
C2	H5	None Detected									
C3	H6	None Detected									
C3	B7	None Detected									

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

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EMSL Order:	042404627
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	

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Denver, CO, 80202

Project: **Maui Fires - Lahaina / 103S9230**

Phone:	(703) 489-2674
Fax:	
Received Date:	03/06/2024 09:45 AM
Analysis Date:	03/07/2024
Report Date:	03/12/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-FB01-030124-AB**		**Sample Description:**	
EMSL Sample Number:	042404627-0005		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 (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0128
Chi² Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**N/A**		**Limit of Detection (Structures/cc):**	**N/A**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower		Upper
Total Chrysotile	**CD**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Total Amphibole	**ADX**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Actinolite	ADX	0	0	< 23.36	< N/A	Not Applicable	-	Not Applicable
Amosite	ADX	0	0	< 23.36	< N/A	Not Applicable	-	Not Applicable
Anthophyllite	ADX	0	0	< 23.36	< N/A	Not Applicable	-	Not Applicable
Crocidolite	ADX	0	0	< 23.36	< N/A	Not Applicable	-	Not Applicable
Tremolite	ADX	0	0	< 23.36	< N/A	Not Applicable	-	Not Applicable
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Other Minerals	-	0	0	< 23.36	< N/A	Not Applicable	-	Not Applicable
Total All Structures	**-**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**

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

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration S / mm²	95 % Confidence Interval (S/cc) Lower		Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Actinolite	ADX	0	0	< 23.36	< N/A	Not Applicable	-	Not Applicable
Amosite	ADX	0	0	< 23.36	< N/A	Not Applicable	-	Not Applicable
Anthophyllite	ADX	0	0	< 23.36	< N/A	Not Applicable	-	Not Applicable
Crocidolite	ADX	0	0	< 23.36	< N/A	Not Applicable	-	Not Applicable
Tremolite	ADX	0	0	< 23.36	< N/A	Not Applicable	-	Not Applicable
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Other Minerals	-	0	0	< 23.36	< N/A	Not Applicable	-	Not Applicable
Total All Structures (PCMe)	**-**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**

Comment

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EMSL Order ID:	**042404627**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S9230**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042404627-0005 **Customer Sample:** MFL-FB01-030124-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	J7	None Detected									
C5	H5	None Detected									
C5	F4	None Detected									
C5	D3	None Detected									
C5	B4	None Detected									
C6	J3	None Detected									
C6	H2	None Detected									
C6	F1	None Detected									
C6	D2	None Detected									
C6	B5	None Detected									

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

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EMSL Order:	042404627
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	

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

Project: **Maui Fires - Lahaina / 103S9230**

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Received Date:	03/06/2024 09:45 AM
Analysis Date:	03/08/2024
Report Date:	03/12/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM01-030224-AB**		**Sample Description:**	
EMSL Sample Number:	042404627-0006		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	6358.6
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0128
Chi² Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0009**		**Limit of Detection (Structures/cc):**	**0.0028**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected		Density	Concentration	95 % Confidence Interval (S/cc)	
		Primary	Total	(S/mm²)	(S/cc)	Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.72**	**< 0.0028**	**Not Applicable**	**- 0.0028**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0028**	**Not Applicable**	**- 0.0028**
Actinolite	ADX	0	0	< 46.72	< 0.0028	Not Applicable	- 0.0028
Amosite	ADX	0	0	< 46.72	< 0.0028	Not Applicable	- 0.0028
Anthophyllite	ADX	0	0	< 46.72	< 0.0028	Not Applicable	- 0.0028
Crocidolite	ADX	0	0	< 46.72	< 0.0028	Not Applicable	- 0.0028
Tremolite	ADX	0	0	< 46.72	< 0.0028	Not Applicable	- 0.0028
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0028**	**Not Applicable**	**- 0.0028**
Other Minerals	-	0	0	< 46.72	< 0.0028	Not Applicable	- 0.0028
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 0.0028**	**Not Applicable**	**- 0.0028**

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

	Minimum ID Level	Structures Detected		Density	Concentration	95 % Confidence Interval (S/cc)	
		Primary	Total	(S/mm²)	(S/cc)	Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 46.72**	**< 0.0028**	**Not Applicable**	**- 0.0028**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0028**	**Not Applicable**	**- 0.0028**
Actinolite	ADX	0	0	< 46.72	< 0.0028	Not Applicable	- 0.0028
Amosite	ADX	0	0	< 46.72	< 0.0028	Not Applicable	- 0.0028
Anthophyllite	ADX	0	0	< 46.72	< 0.0028	Not Applicable	- 0.0028
Crocidolite	ADX	0	0	< 46.72	< 0.0028	Not Applicable	- 0.0028
Tremolite	ADX	0	0	< 46.72	< 0.0028	Not Applicable	- 0.0028
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0028**	**Not Applicable**	**- 0.0028**
Other Minerals	-	0	0	< 46.72	< 0.0028	Not Applicable	- 0.0028
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.72**	**< 0.0028**	**Not Applicable**	**- 0.0028**

Comment
Numerous gypsum fibers present.


Approved Signatory

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EMSL Order ID:	**042404627**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S9230**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042404627-0006 **Customer Sample:** MFL-AM01-030224-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	A6	None Detected									
D2	D8	None Detected									
D2	G7	None Detected									
D3	H4	None Detected									
D3	B5	None Detected									

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

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EMSL Order:	042404627
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	

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Denver, CO, 80202

Project: **Maui Fires - Lahaina / 103S9230**

Phone:	(703) 489-2674
Fax:	
Received Date:	03/06/2024 09:45 AM
Analysis Date:	03/08/2024
Report Date:	03/12/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-030224-AB**		**Sample Description:**	
EMSL Sample Number:	042404627-0007		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7221.9
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0128
Chi² Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	5			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0025**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**

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

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**

Comment
Numerous gypsum fibers present.


Approved Signatory

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EMSL Order ID:	**042404627**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S9230**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042404627-0007 **Customer Sample:** MFL-AM02-030224-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
D5	B7	None Detected									
D5	D9	None Detected									
D5	J6	None Detected									
D6	J6	None Detected									
D6	B4	None Detected									

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

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

EMSL Order:	042404627
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	

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

Project: **Maui Fires - Lahaina / 103S9230**

Phone:	(703) 489-2674
Fax:	
Received Date:	03/06/2024 09:45 AM
Analysis Date:	03/08/2024
Report Date:	03/12/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-030224-AB**		**Sample Description:**	
EMSL Sample Number:	042404627-0008		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	6851.2
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0128
Chi² Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0009**		**Limit of Detection (Structures/cc):**	**0.0026**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Actinolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Amosite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Anthophyllite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Crocidolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Tremolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Other Minerals	-	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**

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

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Actinolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Amosite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Anthophyllite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Crocidolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Tremolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Other Minerals	-	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**

Comment
Numerous gypsum fibers present.


Approved Signatory

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EMSL Order ID: 042404627
Client: Tetra Tech
Project ID: Maui Fires - Lahaina / 103S9230

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042404627-0008 **Customer Sample:** MFL-AM03-030224-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
E2	J4	None Detected									
E2	G3	None Detected									
E2	B5	None Detected									
E3	C7	None Detected									
E3	H6	None Detected									

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

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EMSL Order:	042404627
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	

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

Project: **Maui Fires - Lahaina / 103S9230**

Phone:	(703) 489-2674
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Analysis Date:	03/08/2024
Report Date:	03/12/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM04-030224-AB**		**Sample Description:**	
EMSL Sample Number:	042404627-0009		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7082.7
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0128
Chi² Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0025**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**

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

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**

Comment
Numerous gypsum fibers present.


Approved Signatory

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EMSL Order ID:	**042404627**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S9230**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042404627-0009 **Customer Sample:** MFL-AM04-030224-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	C5	None Detected									
E5	F7	None Detected									
E5	H4	None Detected									
E6	C3	None Detected									
E6	H4	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:	042404627
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	

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Denver, CO, 80202

Project: **Maui Fires - Lahaina / 103S9230**

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Received Date:	03/06/2024 09:45 AM
Analysis Date:	03/08/2024
Report Date:	03/12/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-FB01-030224-AB**		**Sample Description:**	
EMSL Sample Number:	042404627-0010		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 (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0128
Chi² Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**N/A**		**Limit of Detection (Structures/cc):**	**N/A**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower		Upper
Total Chrysotile	**CD**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Total Amphibole	**ADX**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Actinolite	ADX	0	0	< 23.36	< N/A	Not Applicable	-	Not Applicable
Amosite	ADX	0	0	< 23.36	< N/A	Not Applicable	-	Not Applicable
Anthophyllite	ADX	0	0	< 23.36	< N/A	Not Applicable	-	Not Applicable
Crocidolite	ADX	0	0	< 23.36	< N/A	Not Applicable	-	Not Applicable
Tremolite	ADX	0	0	< 23.36	< N/A	Not Applicable	-	Not Applicable
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Other Minerals	-	0	0	< 23.36	< N/A	Not Applicable	-	Not Applicable
Total All Structures	**-**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**

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

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration S / mm²	95 % Confidence Interval (S/cc) Lower		Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Actinolite	ADX	0	0	< 23.36	< N/A	Not Applicable	-	Not Applicable
Amosite	ADX	0	0	< 23.36	< N/A	Not Applicable	-	Not Applicable
Anthophyllite	ADX	0	0	< 23.36	< N/A	Not Applicable	-	Not Applicable
Crocidolite	ADX	0	0	< 23.36	< N/A	Not Applicable	-	Not Applicable
Tremolite	ADX	0	0	< 23.36	< N/A	Not Applicable	-	Not Applicable
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Other Minerals	-	0	0	< 23.36	< N/A	Not Applicable	-	Not Applicable
Total All Structures (PCMe)	**-**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**

Comment

Approved Signatory

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EMSL Order ID:	**042404627**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S9230**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042404627-0010 **Customer Sample:** MFL-FB01-030224-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
F2	J7	None Detected									
F2	H5	None Detected									
F2	F2	None Detected									
F2	D1	None Detected									
F2	B2	None Detected									
F3	A10	None Detected									
F3	C9	None Detected									
F3	E7	None Detected									
F3	G8	None Detected									
F3	I9	None Detected									

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

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ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM01-030324-AB**		**Sample Description:**	
EMSL Sample Number:	042404627-0011		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	6546.5
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0128
Chi² Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0009**		**Limit of Detection (Structures/cc):**	**0.0027**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected		Density	Concentration	95 % Confidence Interval (S/cc)	
		Primary	Total	(S/mm²)	(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) STRUCTURES
(>5 microns in length with >3:1 Aspect Ratio)

	Minimum ID Level	Structures Detected		Density	Concentration	95 % Confidence Interval (S/cc)	
		Primary	Total	(S/mm²)	(S/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
Numerous gypsum fibers present.


Approved Signatory

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EMSL Order ID:	**042404627**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S9230**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042404627-0011 **Customer Sample:** MFL-AM01-030324-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	J3	None Detected									
F5	G5	None Detected									
F5	D7	None Detected									
F6	B6	None Detected									
F6	H8	None Detected									

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

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Project ID:	

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Analysis Date:	03/08/2024
Report Date:	03/12/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-030324-AB**		**Sample Description:**	
EMSL Sample Number:	042404627-0012		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7116.8
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0128
Chi² Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	5			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0025**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**

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

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**

Comment
Numerous gypsum fibers present.


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:	**042404627**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S9230**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042404627-0012 **Customer Sample:** MFL-AM02-030324-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
G2	A7	None Detected									
G2	D8	None Detected									
G2	J6	None Detected									
G3	H5	None Detected									
G3	B7	None Detected									

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

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

EMSL Order:	042404627
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	

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

Project: **Maui Fires - Lahaina / 103S9230**

Phone:	(703) 489-2674
Fax:	
Received Date:	03/06/2024 09:45 AM
Analysis Date:	03/08/2024
Report Date:	03/12/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-030324-AB**		**Sample Description:**	
EMSL Sample Number:	042404627-0013		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	6934.7
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0128
Chi² Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0009**		**Limit of Detection (Structures/cc):**	**0.0026**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Actinolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Amosite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Anthophyllite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Crocidolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Tremolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Other Minerals	-	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**

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

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Actinolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Amosite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Anthophyllite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Crocidolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Tremolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Other Minerals	-	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**

Comment
Numerous gypsum fibers present.


Approved Signatory

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EMSL Order ID:	**042404627**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S9230**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042404627-0013 **Customer Sample:** MFL-AM03-030324-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
G5	J5	None Detected									
G5	G3	None Detected									
G5	D4	None Detected									
G6	C7	None Detected									
G6	I8	None Detected									

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

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EMSL Order:	042404627
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	

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

Project: **Maui Fires - Lahaina / 103S9230**

Phone:	(703) 489-2674
Fax:	
Received Date:	03/06/2024 09:45 AM
Analysis Date:	03/08/2024
Report Date:	03/12/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM04-030324-AB**		**Sample Description:**	
EMSL Sample Number:	042404627-0014		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7146.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0128
Chi² Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0025**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**

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

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**

Comment
Numerous gypsum fibers present.


Approved Signatory

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

EMSL Order ID:	**042404627**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S9230**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042404627-0014 **Customer Sample:** MFL-AM04-030324-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
H2	J3	None Detected									
H2	G5	None Detected									
H2	C6	None Detected									
H3	C6	None Detected									
H3	H7	None Detected									

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

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

EMSL Order:	042404627
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	

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

Project: **Maui Fires - Lahaina / 103S9230**

Phone:	(703) 489-2674
Fax:	
Received Date:	03/06/2024 09:45 AM
Analysis Date:	03/08/2024
Report Date:	03/12/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-FB01-030324-AB**		**Sample Description:**	
EMSL Sample Number:	042404627-0015		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 (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0128
Chi² Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**N/A**		**Limit of Detection (Structures/cc):**	**N/A**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower		Upper
Total Chrysotile	**CD**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Total Amphibole	**ADX**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Actinolite	ADX	0	0	< 23.36	< N/A	Not Applicable	-	Not Applicable
Amosite	ADX	0	0	< 23.36	< N/A	Not Applicable	-	Not Applicable
Anthophyllite	ADX	0	0	< 23.36	< N/A	Not Applicable	-	Not Applicable
Crocidolite	ADX	0	0	< 23.36	< N/A	Not Applicable	-	Not Applicable
Tremolite	ADX	0	0	< 23.36	< N/A	Not Applicable	-	Not Applicable
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Other Minerals	-	0	0	< 23.36	< N/A	Not Applicable	-	Not Applicable
Total All Structures	**-**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**

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

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration S / mm²	95 % Confidence Interval (S/cc) Lower		Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Actinolite	ADX	0	0	< 23.36	< N/A	Not Applicable	-	Not Applicable
Amosite	ADX	0	0	< 23.36	< N/A	Not Applicable	-	Not Applicable
Anthophyllite	ADX	0	0	< 23.36	< N/A	Not Applicable	-	Not Applicable
Crocidolite	ADX	0	0	< 23.36	< N/A	Not Applicable	-	Not Applicable
Tremolite	ADX	0	0	< 23.36	< N/A	Not Applicable	-	Not Applicable
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Other Minerals	-	0	0	< 23.36	< N/A	Not Applicable	-	Not Applicable
Total All Structures (PCMe)	**-**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**

Comment

Approved Signatory

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

EMSL Order ID:	**042404627**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S9230**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042404627-0015 **Customer Sample:** MFL-FB01-030324-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	J3	None Detected									
H5	H2	None Detected									
H5	F1	None Detected									
H5	D3	None Detected									
H5	B4	None Detected									
H6	J4	None Detected									
H6	H3	None Detected									
H6	F4	None Detected									
H6	D3	None Detected									
H6	B4	None Detected									

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

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EMSL Order:	042404627
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	

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

Project: **Maui Fires - Lahaina / 103S9230**

Phone:	(703) 489-2674
Fax:	
Received Date:	03/06/2024 09:45 AM
Analysis Date:	03/07/2024
Report Date:	03/12/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**Lab Blank**		**Sample Description:**	**Lab Blank**
EMSL Sample Number:	042404627-0016		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 (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0128
Chi² Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**N/A**		**Limit of Detection (Structures/cc):**	**N/A**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower		Upper
Total Chrysotile	**CD**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Total Amphibole	**ADX**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Actinolite	ADX	0	0	< 23.36	< N/A	Not Applicable	-	Not Applicable
Amosite	ADX	0	0	< 23.36	< N/A	Not Applicable	-	Not Applicable
Anthophyllite	ADX	0	0	< 23.36	< N/A	Not Applicable	-	Not Applicable
Crocidolite	ADX	0	0	< 23.36	< N/A	Not Applicable	-	Not Applicable
Tremolite	ADX	0	0	< 23.36	< N/A	Not Applicable	-	Not Applicable
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Other Minerals	-	0	0	< 23.36	< N/A	Not Applicable	-	Not Applicable
Total All Structures	**-**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**

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

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration S / mm²	95 % Confidence Interval (S/cc) Lower		Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Actinolite	ADX	0	0	< 23.36	< N/A	Not Applicable	-	Not Applicable
Amosite	ADX	0	0	< 23.36	< N/A	Not Applicable	-	Not Applicable
Anthophyllite	ADX	0	0	< 23.36	< N/A	Not Applicable	-	Not Applicable
Crocidolite	ADX	0	0	< 23.36	< N/A	Not Applicable	-	Not Applicable
Tremolite	ADX	0	0	< 23.36	< N/A	Not Applicable	-	Not Applicable
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Other Minerals	-	0	0	< 23.36	< N/A	Not Applicable	-	Not Applicable
Total All Structures (PCMe)	**-**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**

Comment

Approved Signatory

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

EMSL Order ID:	**042404627**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S9230**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042404627-0016 **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					
A2	A10	None Detected									
A2	C9	None Detected									
A2	E8	None Detected									
A2	G9	None Detected									
A2	I7	None Detected									
A3	J5	None Detected									
A3	H4	None Detected									
A3	F7	None Detected									
A3	D6	None Detected									
A3	B7	None Detected									

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

OrderID: 042404627

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL Order Number / Lab Use Only

#042404627

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

Project Information

Project Name/No:	Maui Fires - Lahaina / 10359230	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:	Elia Vargas Saldaña	Sampled By Signature:	
No. of Samples in Shipment	15		

Turn-Around-Time (TAT)

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

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

Test Selection

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

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

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

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

Other Test (please specify)

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

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

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*Please call with your project-specific requirements.

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

Sample Number	Sample Location / Description	Volume, Area or Homogeneous Area	Date / Time Sampled (Air Monitoring Only)
MFL-AM01-030124-AB3		6,527.567	03/01/24 1104
MFL-AM02-030124-AB3		7,195.687	03/01/24 1124
MFL-AM03-030124-AB3		7,255.860	03/01/24 1315
MFL-AM04-030124-AB3		7,175.947	03/01/24 1336
MFL-FB01-030124-AB3		0	03/01/24 1200
MFL-AM01-030224-AB3		~~6,38~~ 6,358.562 (EKS)	03/02/24 1101
MFL-AM02-030224-AB3		7,221.925	03/02/24 1123
MFL-AM03-030224-AB3		6,851.176	03/02/24 1303

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:		Date/Time: 03/04/24 1100	Received by: FX	Date/Time 3/6/24	945
Relinquished by:		Date/Time:	Received by:	Date/Time	

(13) P

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.

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

EMSL Analytical, Inc.
200 Route 130 North
Cinnaminson, NJ 08077

PHONE: (800) 220-3675
EMAIL: CinnAsblab@EMSL.com

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL Order Number / Lab Use Only

#042404627

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-AM04-030224-AB		7,082.698	03/02/24 1322
MFL-FB01-030224-AB		0	03/02/24 1200
MFL-AM01-030324-AB		6,546.506	03/03/24 1100
MFL-AM02-030324-AB		7,116.800	03/03/24 1120
MFL-AM03-030324-AB		6,934.731	03/03/24 1303
MFL-AM04-030324-AB		7,145.997	03/03/24 1323
MFL-FB01-030324-AB		0	03/03/24 1200

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EMSL
CINNAMINSON, NJ
2024 MAR -6 A 11:14

Method of Shipment: FedEx		Sample Condition Upon Receipt:	
Relinquished by:	Date/Time: 03/04/24 1100	Received by:	Date/Time
Relinquished by:	Date/Time:	Received by:	Date/Time

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

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

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Stage 1 Data Verification Checklist – Asbestos

HDOH CAB – Ambient Community Air Sampling – Lahaina

Task Order No. 23141

Reviewed by:
Kierra Johnson 3/13/2014 and Shanna Vasser 3/14/2024
Laboratory: EMSL Analytical, Inc. – North Cinnaminson, NJ
Collection date(s): 3/1/2024 - 3/3/2024
Report No: 42404627

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

EMSL Order:	042404989
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	

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

Project: **Maui Fires - Lahaina / 103S9230**

Phone:	(703) 489-2674
Fax:	
Received Date:	03/11/2024 09:00 AM
Analysis Date:	03/12/2024
Report Date:	03/14/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM01-030424-AB**		**Sample Description:**	
EMSL Sample Number:	042404989-0001		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	6835.5
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0127
Chi² Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0009**		**Limit of Detection (Structures/cc):**	**0.0027**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected		Density	Concentration	95 % Confidence Interval (S/cc)	
		Primary	Total	(S/mm²)	(S/cc)	Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 47.09**	**< 0.0027**	**Not Applicable**	**- 0.0027**
Total Amphibole	**ADX**	**0**	**0**	**< 47.09**	**< 0.0027**	**Not Applicable**	**- 0.0027**
Actinolite	ADX	0	0	< 47.09	< 0.0027	Not Applicable	- 0.0027
Amosite	ADX	0	0	< 47.09	< 0.0027	Not Applicable	- 0.0027
Anthophyllite	ADX	0	0	< 47.09	< 0.0027	Not Applicable	- 0.0027
Crocidolite	ADX	0	0	< 47.09	< 0.0027	Not Applicable	- 0.0027
Tremolite	ADX	0	0	< 47.09	< 0.0027	Not Applicable	- 0.0027
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0027**	**Not Applicable**	**- 0.0027**
Other Minerals	-	0	0	< 47.09	< 0.0027	Not Applicable	- 0.0027
Total All Structures	**-**	**0**	**0**	**< 47.09**	**< 0.0027**	**Not Applicable**	**- 0.0027**

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

	Minimum ID Level	Structures Detected		Density	Concentration	95 % Confidence Interval (S/cc)	
		Primary	Total	(S/mm²)	(S/cc)	Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 47.09**	**< 0.0027**	**Not Applicable**	**- 0.0027**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 47.09**	**< 0.0027**	**Not Applicable**	**- 0.0027**
Actinolite	ADX	0	0	< 47.09	< 0.0027	Not Applicable	- 0.0027
Amosite	ADX	0	0	< 47.09	< 0.0027	Not Applicable	- 0.0027
Anthophyllite	ADX	0	0	< 47.09	< 0.0027	Not Applicable	- 0.0027
Crocidolite	ADX	0	0	< 47.09	< 0.0027	Not Applicable	- 0.0027
Tremolite	ADX	0	0	< 47.09	< 0.0027	Not Applicable	- 0.0027
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0027**	**Not Applicable**	**- 0.0027**
Other Minerals	-	0	0	< 47.09	< 0.0027	Not Applicable	- 0.0027
Total All Structures (PCMe)	**-**	**0**	**0**	**< 47.09**	**< 0.0027**	**Not Applicable**	**- 0.0027**

Comment
Numerous gypsum fibers present.


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:	**042404989**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S9230**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042404989-0001 **Customer Sample:** MFL-AM01-030424-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	J5	None Detected									
A5	G7	None Detected									
A5	D8	None Detected									
A6	G9	None Detected									
A6	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:	042404989
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	

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

Project: **Maui Fires - Lahaina / 103S9230**

Phone:	(703) 489-2674
Fax:	
Received Date:	03/11/2024 09:00 AM
Analysis Date:	03/12/2024
Report Date:	03/14/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-030424-AB**		**Sample Description:**	
EMSL Sample Number:	042404989-0002		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7077.6
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0127
Chi² Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0009**		**Limit of Detection (Structures/cc):**	**0.0026**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 47.09**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Total Amphibole	**ADX**	**0**	**0**	**< 47.09**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Actinolite	ADX	0	0	< 47.09	< 0.0026	Not Applicable	- 0.0026
Amosite	ADX	0	0	< 47.09	< 0.0026	Not Applicable	- 0.0026
Anthophyllite	ADX	0	0	< 47.09	< 0.0026	Not Applicable	- 0.0026
Crocidolite	ADX	0	0	< 47.09	< 0.0026	Not Applicable	- 0.0026
Tremolite	ADX	0	0	< 47.09	< 0.0026	Not Applicable	- 0.0026
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Other Minerals	-	0	0	< 47.09	< 0.0026	Not Applicable	- 0.0026
Total All Structures	**-**	**0**	**0**	**< 47.09**	**< 0.0026**	**Not Applicable**	**- 0.0026**

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

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 47.09**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 47.09**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Actinolite	ADX	0	0	< 47.09	< 0.0026	Not Applicable	- 0.0026
Amosite	ADX	0	0	< 47.09	< 0.0026	Not Applicable	- 0.0026
Anthophyllite	ADX	0	0	< 47.09	< 0.0026	Not Applicable	- 0.0026
Crocidolite	ADX	0	0	< 47.09	< 0.0026	Not Applicable	- 0.0026
Tremolite	ADX	0	0	< 47.09	< 0.0026	Not Applicable	- 0.0026
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Other Minerals	-	0	0	< 47.09	< 0.0026	Not Applicable	- 0.0026
Total All Structures (PCMe)	**-**	**0**	**0**	**< 47.09**	**< 0.0026**	**Not Applicable**	**- 0.0026**

Comment
Numerous gypsum fibers present.


Approved Signatory

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

EMSL Order ID:	**042404989**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S9230**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042404989-0002 **Customer Sample:** MFL-AM02-030424-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
B2	A5	None Detected									
B2	D7	None Detected									
B2	I6	None Detected									
B3	H4	None Detected									
B3	A5	None Detected									

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

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EMSL Order:	042404989
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	

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

Project: **Maui Fires - Lahaina / 103S9230**

Phone:	(703) 489-2674
Fax:	
Received Date:	03/11/2024 09:00 AM
Analysis Date:	03/12/2024
Report Date:	03/14/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-030424-AB**		**Sample Description:**	
EMSL Sample Number:	042404989-0003		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7281.3
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0127
Chi² Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0025**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole	**ADX**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Total All Structures	**-**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**

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

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Total All Structures (PCMe)	**-**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**

Comment
Numerous gypsum fibers present.


Approved Signatory

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

EMSL Order ID:	**042404989**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S9230**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042404989-0003 **Customer Sample:** MFL-AM03-030424-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	I4	None Detected									
B5	F3	None Detected									
B5	D2	None Detected									
B6	A8	None Detected									
B6	H7	None Detected									

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

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Tel/Fax: (800) 220-3675 / (856) 786-5974
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EMSL Order:	042404989
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	

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

Project: **Maui Fires - Lahaina / 103S9230**

Phone:	(703) 489-2674
Fax:	
Received Date:	03/11/2024 09:00 AM
Analysis Date:	03/12/2024
Report Date:	03/14/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM04-030424-AB**		**Sample Description:**	
EMSL Sample Number:	042404989-0004		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7208.7
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0127
Chi² Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0025**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected		Density	Concentration	95 % Confidence Interval (S/cc)	
		Primary	Total	(S/mm²)	(S/cc)	Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole	**ADX**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Total All Structures	**-**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**

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

	Minimum ID Level	Structures Detected		Density	Concentration	95 % Confidence Interval (S/cc)	
		Primary	Total	(S/mm²)	(S/cc)	Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Total All Structures (PCMe)	**-**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**

Comment
Numerous gypsum fibers present.


Approved Signatory

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

EMSL Order ID:	**042404989**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S9230**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042404989-0004 **Customer Sample:** MFL-AM04-030424-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
C2	A5	None Detected									
C2	D4	None Detected									
C2	H3	None Detected									
C3	B3	None Detected									
C3	H2	None Detected									

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

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EMSL Order:	042404989
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	

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

Project: **Maui Fires - Lahaina / 103S9230**

Phone:	(703) 489-2674
Fax:	
Received Date:	03/11/2024 09:00 AM
Analysis Date:	03/12/2024
Report Date:	03/14/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-FB01-030424-AB**		**Sample Description:**	
EMSL Sample Number:	042404989-0005		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 (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0127
Chi² Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**N/A**		**Limit of Detection (Structures/cc):**	**N/A**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower		Upper
Total Chrysotile	**CD**	**0**	**0**	**< 23.54**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Total Amphibole	**ADX**	**0**	**0**	**< 23.54**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Actinolite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Amosite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Anthophyllite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Crocidolite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Tremolite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.54**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Other Minerals	-	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Total All Structures	**-**	**0**	**0**	**< 23.54**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**

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

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration S / mm²	95 % Confidence Interval (S/cc) Lower		Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 23.54**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.54**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Actinolite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Amosite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Anthophyllite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Crocidolite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Tremolite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.54**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Other Minerals	-	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Total All Structures (PCMe)	**-**	**0**	**0**	**< 23.54**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**

Comment

Approved Signatory

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EMSL Order ID:	**042404989**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S9230**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042404989-0005 **Customer Sample:** MFL-FB01-030424-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	H5	None Detected									
C5	H7	None Detected									
C5	G9	None Detected									
C5	F7	None Detected									
C5	D5	None Detected									
C6	A4	None Detected									
C6	C5	None Detected									
C6	E7	None Detected									
C6	G8	None Detected									
C6	I6	None Detected									

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

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EMSL Order:	042404989
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	

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

Project: **Maui Fires - Lahaina / 103S9230**

Phone:	(703) 489-2674
Fax:	
Received Date:	03/11/2024 09:00 AM
Analysis Date:	03/12/2024
Report Date:	03/14/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM01-030524-AB**		**Sample Description:**	
EMSL Sample Number:	042404989-0006		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	6781.7
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0127
Chi² Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0009**		**Limit of Detection (Structures/cc):**	**0.0027**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected		Density	Concentration	95 % Confidence Interval (S/cc)	
		Primary	Total	(S/mm²)	(S/cc)	Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 47.09**	**< 0.0027**	**Not Applicable**	**- 0.0027**
Total Amphibole	**ADX**	**0**	**0**	**< 47.09**	**< 0.0027**	**Not Applicable**	**- 0.0027**
Actinolite	ADX	0	0	< 47.09	< 0.0027	Not Applicable	- 0.0027
Amosite	ADX	0	0	< 47.09	< 0.0027	Not Applicable	- 0.0027
Anthophyllite	ADX	0	0	< 47.09	< 0.0027	Not Applicable	- 0.0027
Crocidolite	ADX	0	0	< 47.09	< 0.0027	Not Applicable	- 0.0027
Tremolite	ADX	0	0	< 47.09	< 0.0027	Not Applicable	- 0.0027
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0027**	**Not Applicable**	**- 0.0027**
Other Minerals	-	0	0	< 47.09	< 0.0027	Not Applicable	- 0.0027
Total All Structures	**-**	**0**	**0**	**< 47.09**	**< 0.0027**	**Not Applicable**	**- 0.0027**

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

	Minimum ID Level	Structures Detected		Density	Concentration	95 % Confidence Interval (S/cc)	
		Primary	Total	(S/mm²)	(S/cc)	Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 47.09**	**< 0.0027**	**Not Applicable**	**- 0.0027**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 47.09**	**< 0.0027**	**Not Applicable**	**- 0.0027**
Actinolite	ADX	0	0	< 47.09	< 0.0027	Not Applicable	- 0.0027
Amosite	ADX	0	0	< 47.09	< 0.0027	Not Applicable	- 0.0027
Anthophyllite	ADX	0	0	< 47.09	< 0.0027	Not Applicable	- 0.0027
Crocidolite	ADX	0	0	< 47.09	< 0.0027	Not Applicable	- 0.0027
Tremolite	ADX	0	0	< 47.09	< 0.0027	Not Applicable	- 0.0027
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0027**	**Not Applicable**	**- 0.0027**
Other Minerals	-	0	0	< 47.09	< 0.0027	Not Applicable	- 0.0027
Total All Structures (PCMe)	**-**	**0**	**0**	**< 47.09**	**< 0.0027**	**Not Applicable**	**- 0.0027**

Comment
Numerous gypsum fibers present.


Approved Signatory

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EMSL Order ID:	**042404989**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S9230**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042404989-0006 **Customer Sample:** MFL-AM01-030524-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	J1	None Detected									
D2	H4	None Detected									
D2	F8	None Detected									
D3	I9	None Detected									
D3	C7	None Detected									

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

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EMSL Order:	042404989
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	

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

Project: **Maui Fires - Lahaina / 103S9230**

Phone:	(703) 489-2674
Fax:	
Received Date:	03/11/2024 09:00 AM
Analysis Date:	03/12/2024
Report Date:	03/14/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-030524-AB**		**Sample Description:**	
EMSL Sample Number:	042404989-0007		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	6959.3
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0127
Chi² Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0009**		**Limit of Detection (Structures/cc):**	**0.0026**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected		Density	Concentration	95 % Confidence Interval (S/cc)	
		Primary	Total	(S/mm²)	(S/cc)	Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 47.09**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Total Amphibole	**ADX**	**0**	**0**	**< 47.09**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Actinolite	ADX	0	0	< 47.09	< 0.0026	Not Applicable	- 0.0026
Amosite	ADX	0	0	< 47.09	< 0.0026	Not Applicable	- 0.0026
Anthophyllite	ADX	0	0	< 47.09	< 0.0026	Not Applicable	- 0.0026
Crocidolite	ADX	0	0	< 47.09	< 0.0026	Not Applicable	- 0.0026
Tremolite	ADX	0	0	< 47.09	< 0.0026	Not Applicable	- 0.0026
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Other Minerals	-	0	0	< 47.09	< 0.0026	Not Applicable	- 0.0026
Total All Structures	**-**	**0**	**0**	**< 47.09**	**< 0.0026**	**Not Applicable**	**- 0.0026**

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

	Minimum ID Level	Structures Detected		Density	Concentration	95 % Confidence Interval (S/cc)	
		Primary	Total	(S/mm²)	(S/cc)	Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 47.09**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 47.09**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Actinolite	ADX	0	0	< 47.09	< 0.0026	Not Applicable	- 0.0026
Amosite	ADX	0	0	< 47.09	< 0.0026	Not Applicable	- 0.0026
Anthophyllite	ADX	0	0	< 47.09	< 0.0026	Not Applicable	- 0.0026
Crocidolite	ADX	0	0	< 47.09	< 0.0026	Not Applicable	- 0.0026
Tremolite	ADX	0	0	< 47.09	< 0.0026	Not Applicable	- 0.0026
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Other Minerals	-	0	0	< 47.09	< 0.0026	Not Applicable	- 0.0026
Total All Structures (PCMe)	**-**	**0**	**0**	**< 47.09**	**< 0.0026**	**Not Applicable**	**- 0.0026**

Comment
Numerous gypsum fibers present.


Approved Signatory

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EMSL Order ID: 042404989
Client: Tetra Tech
Project ID: Maui Fires - Lahaina / 103S9230

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042404989-0007 **Customer Sample:** MFL-AM02-030524-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
D5	J7	None Detected									
D5	G6	None Detected									
D5	C5	None Detected									
D6	C8	None Detected									
D6	H9	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:	042404989
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	

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Denver, CO, 80202

Project: **Maui Fires - Lahaina / 103S9230**

Phone:	(703) 489-2674
Fax:	
Received Date:	03/11/2024 09:00 AM
Analysis Date:	03/12/2024
Report Date:	03/14/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-030524-AB**		**Sample Description:**	
EMSL Sample Number:	042404989-0008		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7286.8
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0127
Chi² Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0025**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected		Density	Concentration	95 % Confidence Interval (S/cc)	
		Primary	Total	(S/mm²)	(S/cc)	Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole	**ADX**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Total All Structures	**-**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**

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

	Minimum ID Level	Structures Detected		Density	Concentration	95 % Confidence Interval (S/cc)	
		Primary	Total	(S/mm²)	(S/cc)	Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Total All Structures (PCMe)	**-**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**

Comment
Numerous gypsum fibers present.


Approved Signatory

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EMSL Order ID:	**042404989**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S9230**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042404989-0008 **Customer Sample:** MFL-AM03-030524-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	F4	None Detected									
E1	D3	None Detected									
E1	B5	None Detected									
E2	B8	None Detected									
E2	H7	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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http://www.EMSL.com / cinnasblab@EMSL.com

EMSL Order:	042404989
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	

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

Project: **Maui Fires - Lahaina / 103S9230**

Phone:	(703) 489-2674
Fax:	
Received Date:	03/11/2024 09:00 AM
Analysis Date:	03/12/2024
Report Date:	03/14/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM04-030524-AB**		**Sample Description:**	
EMSL Sample Number:	042404989-0009		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7204.6
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0127
Chi² Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0025**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected		Density	Concentration	95 % Confidence Interval (S/cc)	
		Primary	Total	(S/mm²)	(S/cc)	Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole	**ADX**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Total All Structures	**-**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**

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

	Minimum ID Level	Structures Detected		Density	Concentration	95 % Confidence Interval (S/cc)	
		Primary	Total	(S/mm²)	(S/cc)	Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Total All Structures (PCMe)	**-**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**

Comment
Numerous gypsum fibers present.


Approved Signatory

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EMSL Order ID:	**042404989**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S9230**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042404989-0009 **Customer Sample:** MFL-AM04-030524-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	B7	None Detected									
E5	E4	None Detected									
E5	G2	None Detected									
E6	C2	None Detected									
E6	H4	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:	042404989
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	

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

Project: **Maui Fires - Lahaina / 103S9230**

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Report Date:	03/14/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-FB01-030524-AB**		**Sample Description:**	
EMSL Sample Number:	042404989-0010		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 (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0127
Chi² Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**N/A**		**Limit of Detection (Structures/cc):**	**N/A**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower		Upper
Total Chrysotile	**CD**	**0**	**0**	**< 23.54**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Total Amphibole	**ADX**	**0**	**0**	**< 23.54**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Actinolite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Amosite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Anthophyllite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Crocidolite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Tremolite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.54**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Other Minerals	-	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Total All Structures	**-**	**0**	**0**	**< 23.54**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**

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

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration S / mm²	95 % Confidence Interval (S/cc) Lower		Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 23.54**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.54**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Actinolite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Amosite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Anthophyllite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Crocidolite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Tremolite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.54**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Other Minerals	-	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Total All Structures (PCMe)	**-**	**0**	**0**	**< 23.54**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**

Comment


Approved Signatory

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EMSL Order ID:	**042404989**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S9230**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042404989-0010 **Customer Sample:** MFL-FB01-030524-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
F2	J6	None Detected									
F2	H5	None Detected									
F2	F4	None Detected									
F2	D2	None Detected									
F2	B4	None Detected									
F3	A5	None Detected									
F3	C7	None Detected									
F3	E8	None Detected									
F3	G9	None Detected									
F3	I7	None Detected									

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

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EMSL Order:	042404989
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	

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

Project: **Maui Fires - Lahaina / 103S9230**

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Report Date:	03/14/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM01-030624-AB**		**Sample Description:**	
EMSL Sample Number:	042404989-0011		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7280.4
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0127
Chi² Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	5			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0025**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected		Density	Concentration	95 % Confidence Interval (S/cc)	
		Primary	Total	(S/mm²)	(S/cc)	Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole	**ADX**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Total All Structures	**-**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**

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

	Minimum ID Level	Structures Detected		Density	Concentration	95 % Confidence Interval (S/cc)	
		Primary	Total	(S/mm²)	(S/cc)	Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Total All Structures (PCMe)	**-**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**

Comment
Numerous gypsum fibers present.


Approved Signatory

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EMSL Order ID:	**042404989**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S9230**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042404989-0011 **Customer Sample:** MFL-AM01-030624-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
F5	J7	None Detected									
F5	G9	None Detected									
F5	D10	None Detected									
F6	I6	None Detected									
F6	A7	None Detected									

Abbreviations used:
XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled
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Analysis Date:	03/12/2024
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ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-030624-AB**		**Sample Description:**	
EMSL Sample Number:	042404989-0012		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7038.6
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0127
Chi² Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	5			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0009**		**Limit of Detection (Structures/cc):**	**0.0026**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected		Density	Concentration	95 % Confidence Interval (S/cc)	
		Primary	Total	(S/mm²)	(S/cc)	Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 47.09**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Total Amphibole	**ADX**	**0**	**0**	**< 47.09**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Actinolite	ADX	0	0	< 47.09	< 0.0026	Not Applicable	- 0.0026
Amosite	ADX	0	0	< 47.09	< 0.0026	Not Applicable	- 0.0026
Anthophyllite	ADX	0	0	< 47.09	< 0.0026	Not Applicable	- 0.0026
Crocidolite	ADX	0	0	< 47.09	< 0.0026	Not Applicable	- 0.0026
Tremolite	ADX	0	0	< 47.09	< 0.0026	Not Applicable	- 0.0026
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Other Minerals	-	0	0	< 47.09	< 0.0026	Not Applicable	- 0.0026
Total All Structures	**-**	**0**	**0**	**< 47.09**	**< 0.0026**	**Not Applicable**	**- 0.0026**

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

	Minimum ID Level	Structures Detected		Density	Concentration	95 % Confidence Interval (S/cc)	
		Primary	Total	(S/mm²)	(S/cc)	Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 47.09**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 47.09**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Actinolite	ADX	0	0	< 47.09	< 0.0026	Not Applicable	- 0.0026
Amosite	ADX	0	0	< 47.09	< 0.0026	Not Applicable	- 0.0026
Anthophyllite	ADX	0	0	< 47.09	< 0.0026	Not Applicable	- 0.0026
Crocidolite	ADX	0	0	< 47.09	< 0.0026	Not Applicable	- 0.0026
Tremolite	ADX	0	0	< 47.09	< 0.0026	Not Applicable	- 0.0026
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Other Minerals	-	0	0	< 47.09	< 0.0026	Not Applicable	- 0.0026
Total All Structures (PCMe)	**-**	**0**	**0**	**< 47.09**	**< 0.0026**	**Not Applicable**	**- 0.0026**

Comment
Numerous gypsum fibers present.


Approved Signatory

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Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S9230**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042404989-0012 **Customer Sample:** MFL-AM02-030624-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	F4	None Detected									
G1	H6	None Detected									
G1	J8	None Detected									
G2	H4	None Detected									
G2	B3	None Detected									

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

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ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-030624-AB**		**Sample Description:**	
EMSL Sample Number:	042404989-0013		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7228.5
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0127
Chi² Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0025**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole	**ADX**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Total All Structures	**-**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**

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

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Total All Structures (PCMe)	**-**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**

Comment
Numerous gypsum fibers present.


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:	**042404989**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S9230**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042404989-0013 **Customer Sample:** MFL-AM03-030624-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	A9	None Detected									
G5	C7	None Detected									
G5	F4	None Detected									
G6	H7	None Detected									
G6	B4	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:	042404989
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	

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

Project: **Maui Fires - Lahaina / 103S9230**

Phone:	(703) 489-2674
Fax:	
Received Date:	03/11/2024 09:00 AM
Analysis Date:	03/12/2024
Report Date:	03/14/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM04-030624-AB**		**Sample Description:**	
EMSL Sample Number:	042404989-0014		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7207.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0127
Chi² Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	5			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0025**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected		Density	Concentration	95 % Confidence Interval (S/cc)	
		Primary	Total	(S/mm²)	(S/cc)	Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole	**ADX**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Total All Structures	**-**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**

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

	Minimum ID Level	Structures Detected		Density	Concentration	95 % Confidence Interval (S/cc)	
		Primary	Total	(S/mm²)	(S/cc)	Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Total All Structures (PCMe)	**-**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**

Comment
Numerous gypsum fibers present.


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:	**042404989**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S9230**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042404989-0014 **Customer Sample:** MFL-AM04-030624-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
H2	A8	None Detected									
H2	D7	None Detected									
H2	H4	None Detected									
H3	C5	None Detected									
H3	H8	None Detected									

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

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

EMSL Order:	042404989
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	

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

Project: **Maui Fires - Lahaina / 103S9230**

Phone:	(703) 489-2674
Fax:	
Received Date:	03/11/2024 09:00 AM
Analysis Date:	03/12/2024
Report Date:	03/14/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-FB04-030624-AB**		**Sample Description:**	
EMSL Sample Number:	042404989-0015		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 (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0127
Chi² Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**N/A**		**Limit of Detection (Structures/cc):**	**N/A**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower		Upper
Total Chrysotile	**CD**	**0**	**0**	**< 23.54**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Total Amphibole	**ADX**	**0**	**0**	**< 23.54**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Actinolite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Amosite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Anthophyllite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Crocidolite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Tremolite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.54**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Other Minerals	-	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Total All Structures	**-**	**0**	**0**	**< 23.54**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**

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

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration S / mm²	95 % Confidence Interval (S/cc) Lower		Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 23.54**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.54**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Actinolite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Amosite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Anthophyllite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Crocidolite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Tremolite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.54**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Other Minerals	-	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Total All Structures (PCMe)	**-**	**0**	**0**	**< 23.54**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**

Comment

Approved Signatory

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

EMSL Order ID:	**042404989**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S9230**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042404989-0015 **Customer Sample:** MFL-FB04-030624-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	H4	None Detected									
H5	F3	None Detected									
H5	D5	None Detected									
H5	B8	None Detected									
H6	A7	None Detected									
H6	C8	None Detected									
H6	E8	None Detected									
H6	G6	None Detected									
H6	I5	None Detected									

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

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

EMSL Order:	042404989
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	

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

Project: **Maui Fires - Lahaina / 103S9230**

Phone:	(703) 489-2674
Fax:	
Received Date:	03/11/2024 09:00 AM
Analysis Date:	03/12/2024
Report Date:	03/14/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**Lab Blank**		**Sample Description:**	**Lab Blank**
EMSL Sample Number:	042404989-0016		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 (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0127
Chi² Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**N/A**		**Limit of Detection (Structures/cc):**	**N/A**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower		Upper
Total Chrysotile	**CD**	**0**	**0**	**< 23.54**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Total Amphibole	**ADX**	**0**	**0**	**< 23.54**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Actinolite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Amosite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Anthophyllite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Crocidolite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Tremolite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.54**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Other Minerals	-	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Total All Structures	**-**	**0**	**0**	**< 23.54**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**

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

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration S / mm²	95 % Confidence Interval (S/cc) Lower		Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 23.54**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.54**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Actinolite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Amosite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Anthophyllite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Crocidolite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Tremolite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.54**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Other Minerals	-	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Total All Structures (PCMe)	**-**	**0**	**0**	**< 23.54**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**

Comment

Approved Signatory

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

EMSL Order ID:	**042404989**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S9230**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042404989-0016 **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					
A2	J2	None Detected									
A2	H3	None Detected									
A2	F4	None Detected									
A2	D3	None Detected									
A2	A5	None Detected									
A3	J5	None Detected									
A3	H4	None Detected									
A3	F7	None Detected									
A3	D6	None Detected									
A3	B5	None Detected									

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

OrderID: 042404989

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL Order Number / Lab Use Only

#042404989

EMSL Analytical, Inc.
200 Route 130 North
Cinnaminson, NJ 08077

PHONE: (800) 220-3675
EMAIL: CinnAsblab@EMSL.com

RECEIVED EMSL CINNAMINSON, NJ 24 MAR 11 AM 9:56

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

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

Project Information

Project Name/No: Maui Fires - Lahaina / 10389230

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: Elia Langston Saldana

Sampled By Signature: [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-AM01-030424-AB		6835.478	03/04/24 1058
MFL-AM02-030424-AB		7077.602	03/04/24 1118
MFL-AM03-030424-AB		7281.340	03/04/24 1306
MFL-AM04-030424-AB		7208.671	03/04/24 1325
MFL-FB01-030424-AB		0	03/04/24 1200
MFL-AM01-030524-AB		6781.665	03/05/24 1100
MFL-AM02-030524-AB		6959.333	03/05/24 1118
MFL-AM03-030524-AB		7286.832	03/05/24 1308

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

All samples received acceptable for analysis.

(15) [initials]

Method of Shipment: FedEx		Sample Condition Upon Receipt:	
Relinquished by: [signature]	Date/Time: 03/07/24 1100	Received by: [signature] FedEx	Date/Time: 3/11/24 9A
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.)

OrderID: 042404989

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL Order Number / Lab Use Only

#042404989

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-AM04-030524-AB		7204.608	03/05/24 1328
MFL-FB01-030524-AB		0	03/05/24 1200
MFL-AM01-030624-AB		7280.352	03/06/24 1103
MFL-AM02-030624-AB		7038.640	03/06/24 1120
MFL-AM03-030624-AB		7228.450	03/06/24 1310
MFL-AM04-030624-AB		7207.019	~~03~~ 03/06/24 1328 (EKS)
MFL-FB01-030624-AB		0	03/06/24 1200

RECEIVED
EMSL
CINNAMINSON, NJ
24 MAR 11 AM 9:56

Method of Shipment: FedEx		Sample Condition Upon Receipt:	
Relinquished by:	Date/Time: 03/07/24 1100	Received by:	Date/Time
Relinquished by:	Date/Time:	Received by:	Date/Time

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

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

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

Stage 1 Data Verification Checklist – Asbestos

HDOH CAB – Ambient Community Air Sampling – Lahaina

Task Order No. 23141

Reviewed by:
Kierra Johnson 3/15/2024 and Shanna Vasser 3/18/2024
Laboratory: EMSL Analytical, Inc. – North Cinnaminson, NJ
Collection date(s): 3/4/2024-3/6/2024
Report No: 42404989

√	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

March 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 03/11/24 11:48.

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: 03/21/24 15:20
SUBMITTED: 03/11/24
AQS SITE CODE:
SITE CODE: Lahaina fires

ANALYTICAL REPORT FOR SAMPLES

SampleName	LabNumber	Matrix	Sampled	Received
MFL-AM01-022924-HM	4031151-01	Air	02/29/24 23:59	03/11/24 11:48
MFL-AM02-022924-HM	4031151-02	Air	02/29/24 23:59	03/11/24 11:48
MFL-AM03-022924-HM	4031151-03	Air	02/29/24 23:59	03/11/24 11:48
MFL-AM04-022924-HM	4031151-04	Air	02/29/24 23:59	03/11/24 11:48
MFL-FB01-022924-HM	4031151-05	Air	02/29/24 00:00	03/11/24 11:48
MFL-AM01-030124-HM	4031151-06	Air	03/01/24 23:59	03/11/24 11:48
MFL-AM02-030124-HM	4031151-07	Air	03/01/24 23:59	03/11/24 11:48
MFL-AM03-030124-HM	4031151-08	Air	03/01/24 23:59	03/11/24 11:48
MFL-AM04-030124-HM	4031151-09	Air	03/01/24 23:59	03/11/24 11:48
MFL-AM01-030224-HM	4031151-10	Air	03/02/24 23:59	03/11/24 11:48
MFL-AM02-030224-HM	4031151-11	Air	03/02/24 23:59	03/11/24 11:48
MFL-AM03-030224-HM	4031151-12	Air	03/02/24 23:59	03/11/24 11:48
MFL-AM04-030224-HM	4031151-13	Air	03/02/24 23:59	03/11/24 11:48
MFL-FB01-030224-HM	4031151-14	Air	03/02/24 00:00	03/11/24 11:48
MFL-AM01-030324-HM	4031151-15	Air	03/03/24 23:59	03/11/24 11:48
MFL-AM02-030324-HM	4031151-16	Air	03/03/24 23:59	03/11/24 11:48
MFL-AM03-030324-HM/MS/M	4031151-17	Air	03/03/24 23:59	03/11/24 11:48
MFL-AM04-030324-HM	4031151-18	Air	03/03/24 23:59	03/11/24 11:48
MFL-AM01-030424-HM	4031151-19	Air	03/04/24 23:59	03/11/24 11:48
MFL-AM02-030424-HM	4031151-20	Air	03/04/24 23:59	03/11/24 11:48
MFL-AM03-030424-HM	4031151-21	Air	03/04/24 23:59	03/11/24 11:48

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: 03/21/24 15:20
SUBMITTED: 03/11/24
AQS SITE CODE:
SITE CODE: Lahaina fires

MFL-AM04-030424-HM	4031151-22	Air	03/04/24 23:59	03/11/24 11:48
MFL-FB01-030424-HM	4031151-23	Air	03/04/24 00:00	03/11/24 11:48
MFL-AM01-030524-HM	4031151-24	Air	03/05/24 23:59	03/11/24 11:48
MFL-AM02-030524-HM	4031151-25	Air	03/05/24 23:59	03/11/24 11:48
MFL-AM03-030524-HM	4031151-26	Air	03/05/24 23:59	03/11/24 11:48
MFL-AM04-030524-HM	4031151-27	Air	03/05/24 23:59	03/11/24 11:48
MFL-AM01-030624-HM	4031151-28	Air	03/06/24 23:59	03/11/24 11:48
MFL-AM02-030624-HM	4031151-29	Air	03/06/24 23:59	03/11/24 11:48
MFL-AM03-030624-HM	4031151-30	Air	03/06/24 23:59	03/11/24 11:48
MFL-AM04-030624-HM	4031151-31	Air	03/06/24 23:59	03/11/24 11:48
MFL-FB01-030624-HM	4031151-32	Air	03/06/24 00:00	03/11/24 11:48

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: 03/21/24 15:20
SUBMITTED: 03/11/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-022924-HM
Matrix: Air
Lab ID: 4031151-01
Sample Volume: 1971.586 m³
Filter ID:
Sampled: 02/29/24 23:59
Received: 03/11/24 11:48
Analysis Date: 03/15/24 03:35

Comments: Q9554709 - 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**	**0.0413**	SL	**0.0319**
Arsenic	**7440-38-2**	**1.19**		**0.00773**
Barium	**7440-39-3**	**2.59**		**0.883**
Beryllium	**7440-41-7**	**0.00871**		**0.00264**
Cadmium	7440-43-9	0.0124	U	0.0611
Chromium	**7440-47-3**	**2.55**		**1.82**
Cobalt	**7440-48-4**	**0.292**		**0.0360**
Copper	**7440-50-8**	**45.9**		**2.17**
Lead	**7439-92-1**	**0.464**		**0.177**
Manganese	**7439-96-5**	**8.20**		**1.56**
Molybdenum	**7439-98-7**	**2.59**		**0.296**
Nickel	**7440-02-0**	**0.888**		**0.538**
Selenium	**7782-49-2**	**0.102**		**0.00739**
Thallium	**7440-28-0**	**0.00119**	B, LB, QB-04	**4.86E-4**
Vanadium	**7440-62-2**	**0.790**		**0.0437**
Zinc	7440-66-6	21.5	U	63.4

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 03/21/24 15:20
SUBMITTED: 03/11/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-022924-HM
Matrix: Air
Lab ID: 4031151-02
Sample Volume: 1888.258 m³
Filter ID:
Sampled: 02/29/24 23:59
Received: 03/11/24 11:48
Analysis Date: 03/15/24 03:49

Comments: Q9554705 - 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**	**0.0895**	SL	**0.0333**
Arsenic	**7440-38-2**	**0.381**		**0.00807**
Barium	**7440-39-3**	**5.12**		**0.922**
Beryllium	**7440-41-7**	**0.0151**		**0.00276**
Cadmium	7440-43-9	0.0157	U	0.0638
Chromium	**7440-47-3**	**2.85**		**1.90**
Cobalt	**7440-48-4**	**0.489**		**0.0376**
Copper	**7440-50-8**	**36.0**		**2.27**
Lead	**7439-92-1**	**0.977**		**0.184**
Manganese	**7439-96-5**	**12.5**		**1.63**
Molybdenum	**7439-98-7**	**1.92**		**0.309**
Nickel	**7440-02-0**	**1.85**		**0.562**
Selenium	**7782-49-2**	**0.147**		**0.00772**
Thallium	**7440-28-0**	**0.00126**	B, LB, QB-04	**5.08E-4**
Vanadium	**7440-62-2**	**1.29**		**0.0456**
Zinc	7440-66-6	29.9	U	66.2

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: 03/21/24 15:20
SUBMITTED: 03/11/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-022924-HM
Matrix: Air
Lab ID: 4031151-03
Sample Volume: 2009.471 m³
Filter ID:
Sampled: 02/29/24 23:59
Received: 03/11/24 11:48
Analysis Date: 03/15/24 04:07

Comments: Q9554704 - 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**	**0.0427**	SL	**0.0313**
Arsenic	**7440-38-2**	**0.347**		**0.00759**
Barium	**7440-39-3**	**2.79**		**0.866**
Beryllium	**7440-41-7**	**0.0138**		**0.00259**
Cadmium	7440-43-9	0.00959	U	0.0600
Chromium	**7440-47-3**	**2.14**		**1.79**
Cobalt	**7440-48-4**	**0.259**		**0.0353**
Copper	**7440-50-8**	**32.6**		**2.13**
Lead	**7439-92-1**	**0.470**		**0.173**
Manganese	**7439-96-5**	**6.60**		**1.53**
Molybdenum	**7439-98-7**	**1.56**		**0.291**
Nickel	**7440-02-0**	**0.781**		**0.528**
Selenium	**7782-49-2**	**0.116**		**0.00725**
Thallium	**7440-28-0**	**0.00111**	B, LB, QB-04	**4.77E-4**
Vanadium	**7440-62-2**	**0.626**		**0.0428**
Zinc	7440-66-6	22.2	U	62.2

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: 03/21/24 15:20
SUBMITTED: 03/11/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-022924-HM
Matrix: Air
Lab ID: 4031151-04
Sample Volume: 1970.434 m³
Filter ID:
Sampled: 02/29/24 23:59
Received: 03/11/24 11:48
Analysis Date: 03/15/24 04:23

Comments: Q9554732 - 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**	**0.0481**	SL	**0.0319**
Arsenic	**7440-38-2**	**0.161**		**0.00774**
Barium	**7440-39-3**	**2.45**		**0.884**
Beryllium	**7440-41-7**	**0.00787**		**0.00264**
Cadmium	7440-43-9	0.0113	U	0.0612
Chromium	**7440-47-3**	**1.90**		**1.82**
Cobalt	**7440-48-4**	**0.211**		**0.0360**
Copper	**7440-50-8**	**17.8**		**2.17**
Lead	**7439-92-1**	**0.669**		**0.177**
Manganese	**7439-96-5**	**6.09**		**1.56**
Molybdenum	**7439-98-7**	**0.903**		**0.296**
Nickel	**7440-02-0**	**0.767**		**0.538**
Selenium	**7782-49-2**	**0.113**		**0.00740**
Thallium	**7440-28-0**	**8.26E-4**	B, LB, QB-04	**4.86E-4**
Vanadium	**7440-62-2**	**0.553**		**0.0437**
Zinc	7440-66-6	20.1	U	63.4

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 03/21/24 15:20
SUBMITTED: 03/11/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-FB01-022924-HM
Matrix: Air
Lab ID: 4031151-05
Sample Volume: 1971.586 m³
Filter ID:
Sampled: 02/29/24 00:00
Received: 03/11/24 11:48
Analysis Date: 03/15/24 04:38

Comments: Q9554728 - 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	0.00704	U, SL	0.0319
Arsenic	7440-38-2	0.00704	U	0.00773
Barium	7440-39-3	0.574	U	0.883
Beryllium	7440-41-7	0.00121	U	0.00264
Cadmium	7440-43-9	0.00143	U	0.0611
Chromium	7440-47-3	1.36	U	1.82
Cobalt	7440-48-4	0.0221	U	0.0360
Copper	7440-50-8	0.669	U	2.17
Lead	7439-92-1	0.0634	U	0.177
Manganese	7439-96-5	0.215	U	1.56
Molybdenum	7439-98-7	0.236	U	0.296
Nickel	7440-02-0	0.348	U	0.538
Selenium	7782-49-2	0.00223	U	0.00739
Thallium	7440-28-0	1.80E-4	U, B, LB, QB-04	4.86E-4
Vanadium	7440-62-2	0.0101	U	0.0437
Zinc	7440-66-6	12.7	U	63.4

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 03/21/24 15:20
SUBMITTED: 03/11/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-030124-HM
Matrix: Air
Lab ID: 4031151-06
Sample Volume: 1971.586 m³
Filter ID:
Sampled: 03/01/24 23:59
Received: 03/11/24 11:48
Analysis Date: 03/15/24 04:53

Comments: Q9554731 - 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**	**0.0342**	SL	**0.0319**
Arsenic	**7440-38-2**	**0.752**		**0.00773**
Barium	**7440-39-3**	**2.44**		**0.883**
Beryllium	**7440-41-7**	**0.00695**		**0.00264**
Cadmium	7440-43-9	0.0101	U	0.0611
Chromium	**7440-47-3**	**2.23**		**1.82**
Cobalt	**7440-48-4**	**0.294**		**0.0360**
Copper	**7440-50-8**	**54.8**		**2.17**
Lead	**7439-92-1**	**0.366**		**0.177**
Manganese	**7439-96-5**	**7.33**		**1.56**
Molybdenum	**7439-98-7**	**2.67**		**0.296**
Nickel	**7440-02-0**	**0.844**		**0.538**
Selenium	**7782-49-2**	**0.145**		**0.00739**
Thallium	**7440-28-0**	**0.00106**	B, LB, QB-04	**4.86E-4**
Vanadium	**7440-62-2**	**0.736**		**0.0437**
Zinc	7440-66-6	16.5	U	63.4

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 03/21/24 15:20
SUBMITTED: 03/11/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-030124-HM
Matrix: Air
Lab ID: 4031151-07
Sample Volume: 1871.098 m³
Filter ID:
Sampled: 03/01/24 23:59
Received: 03/11/24 11:48
Analysis Date: 03/15/24 05:23

Comments: Q9554730 - 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**	**0.181**	SL	**0.0336**
Arsenic	**7440-38-2**	**0.521**		**0.00815**
Barium	**7440-39-3**	**5.62**		**0.930**
Beryllium	**7440-41-7**	**0.0121**		**0.00278**
Cadmium	**7440-43-9**	**0.0706**		**0.0644**
Chromium	**7440-47-3**	**2.85**		**1.92**
Cobalt	**7440-48-4**	**0.321**		**0.0379**
Copper	**7440-50-8**	**46.9**		**2.29**
Lead	**7439-92-1**	**1.28**		**0.186**
Manganese	**7439-96-5**	**10.3**		**1.64**
Molybdenum	**7439-98-7**	**2.25**		**0.312**
Nickel	**7440-02-0**	**1.32**		**0.567**
Selenium	**7782-49-2**	**0.188**		**0.00779**
Thallium	**7440-28-0**	**0.00125**	B, LB, QB-04	**5.12E-4**
Vanadium	**7440-62-2**	**0.983**		**0.0460**
Zinc	7440-66-6	43.8	U	66.8

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 03/21/24 15:20
SUBMITTED: 03/11/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-030124-HM
Matrix: Air
Lab ID: 4031151-08
Sample Volume: 2017.928 m³
Filter ID:
Sampled: 03/01/24 23:59
Received: 03/11/24 11:48
Analysis Date: 03/15/24 05:40

Comments: Q9554729 - Received in good condition. - Nonhomogenous Sample

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0537**	SL	**0.0311**
Arsenic	**7440-38-2**	**0.212**		**0.00755**
Barium	**7440-39-3**	**3.20**		**0.863**
Beryllium	**7440-41-7**	**0.0246**		**0.00258**
Cadmium	7440-43-9	0.00958	U	0.0597
Chromium	**7440-47-3**	**2.50**		**1.78**
Cobalt	**7440-48-4**	**0.391**		**0.0352**
Copper	**7440-50-8**	**35.4**		**2.12**
Lead	**7439-92-1**	**0.506**		**0.173**
Manganese	**7439-96-5**	**9.18**		**1.52**
Molybdenum	**7439-98-7**	**1.93**		**0.289**
Nickel	**7440-02-0**	**1.14**		**0.526**
Selenium	**7782-49-2**	**0.170**		**0.00722**
Thallium	**7440-28-0**	**0.00109**	B, LB, QB-04	**4.75E-4**
Vanadium	**7440-62-2**	**0.931**		**0.0427**
Zinc	7440-66-6	18.1	U	61.9

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 03/21/24 15:20
SUBMITTED: 03/11/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-030124-HM
Matrix: Air
Lab ID: 4031151-09
Sample Volume: 1982.074 m³
Filter ID:
Sampled: 03/01/24 23:59
Received: 03/11/24 11:48
Analysis Date: 03/15/24 05:57

Comments: Q9554725 - 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**	**0.0444**	SL	**0.0317**
Arsenic	**7440-38-2**	**0.127**		**0.00769**
Barium	**7440-39-3**	**2.26**		**0.878**
Beryllium	**7440-41-7**	**0.00578**		**0.00263**
Cadmium	7440-43-9	0.0389	U	0.0608
Chromium	**7440-47-3**	**1.84**		**1.81**
Cobalt	**7440-48-4**	**0.145**		**0.0358**
Copper	**7440-50-8**	**18.0**		**2.16**
Lead	**7439-92-1**	**0.713**		**0.176**
Manganese	**7439-96-5**	**4.43**		**1.55**
Molybdenum	**7439-98-7**	**0.942**		**0.295**
Nickel	**7440-02-0**	**0.658**		**0.535**
Selenium	**7782-49-2**	**0.127**		**0.00735**
Thallium	**7440-28-0**	**7.21E-4**	B, LB, QB-04	**4.83E-4**
Vanadium	**7440-62-2**	**0.418**		**0.0434**
Zinc	7440-66-6	15.8	U	63.0

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 03/21/24 15:20
SUBMITTED: 03/11/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-030224-HM
Matrix: Air
Lab ID: 4031151-10
Sample Volume: 1982.074 m³
Filter ID:
Sampled: 03/02/24 23:59
Received: 03/11/24 11:48
Analysis Date: 03/15/24 07:30

Comments: Q9554724 - 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**	**0.0360**	SL	**0.0317**
Arsenic	**7440-38-2**	**0.551**		**0.00769**
Barium	**7440-39-3**	**2.61**		**0.878**
Beryllium	**7440-41-7**	**0.00807**		**0.00263**
Cadmium	7440-43-9	0.0112	U	0.0608
Chromium	**7440-47-3**	**2.29**		**1.81**
Cobalt	**7440-48-4**	**0.291**		**0.0358**
Copper	**7440-50-8**	**55.6**		**2.16**
Lead	**7439-92-1**	**0.440**		**0.176**
Manganese	**7439-96-5**	**8.40**		**1.55**
Molybdenum	**7439-98-7**	**2.78**		**0.295**
Nickel	**7440-02-0**	**0.866**		**0.535**
Selenium	**7782-49-2**	**0.134**		**0.00735**
Thallium	**7440-28-0**	**0.00127**	B, LB, QB-04	**4.83E-4**
Vanadium	**7440-62-2**	**0.867**		**0.0434**
Zinc	7440-66-6	14.8	U	63.0

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FILE #: 4205.00.003.001
REPORTED: 03/21/24 15:20
SUBMITTED: 03/11/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-030224-HM
Matrix: Air
Lab ID: 4031151-11
Sample Volume: 2040.994 m³
Filter ID:
Sampled: 03/02/24 23:59
Received: 03/11/24 11:48
Analysis Date: 03/15/24 07:46

Comments: Q9554723 - 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	**0.0308**
Arsenic	**7440-38-2**	**0.657**		**0.00747**
Barium	**7440-39-3**	**4.43**		**0.853**
Beryllium	**7440-41-7**	**0.0114**		**0.00255**
Cadmium	7440-43-9	0.0431	U	0.0591
Chromium	**7440-47-3**	**2.13**		**1.76**
Cobalt	**7440-48-4**	**0.276**		**0.0348**
Copper	**7440-50-8**	**37.1**		**2.10**
Lead	**7439-92-1**	**0.916**		**0.171**
Manganese	**7439-96-5**	**9.82**		**1.51**
Molybdenum	**7439-98-7**	**1.95**		**0.286**
Nickel	**7440-02-0**	**0.954**		**0.520**
Selenium	**7782-49-2**	**0.163**		**0.00714**
Thallium	**7440-28-0**	**0.00134**	B, LB, QB-04	**4.70E-4**
Vanadium	**7440-62-2**	**0.925**		**0.0422**
Zinc	7440-66-6	24.2	U	61.2

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

FILE #: 4205.00.003.001
REPORTED: 03/21/24 15:20
SUBMITTED: 03/11/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-030224-HM
Matrix: Air
Lab ID: 4031151-12
Sample Volume: 2157.347 m³
Filter ID:
Sampled: 03/02/24 23:59
Received: 03/11/24 11:48
Analysis Date: 03/15/24 08:03

Comments: Q9554722 - 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**	**0.0363**	SL	**0.0291**
Arsenic	**7440-38-2**	**0.186**		**0.00707**
Barium	**7440-39-3**	**2.61**		**0.807**
Beryllium	**7440-41-7**	**0.0170**		**0.00241**
Cadmium	7440-43-9	0.0109	U	0.0559
Chromium	**7440-47-3**	**2.17**		**1.67**
Cobalt	**7440-48-4**	**0.296**		**0.0329**
Copper	**7440-50-8**	**29.8**		**1.98**
Lead	**7439-92-1**	**0.442**		**0.161**
Manganese	**7439-96-5**	**7.79**		**1.43**
Molybdenum	**7439-98-7**	**1.84**		**0.271**
Nickel	**7440-02-0**	**0.942**		**0.492**
Selenium	**7782-49-2**	**0.146**		**0.00676**
Thallium	**7440-28-0**	**0.00124**	QB-04, B, LB	**4.44E-4**
Vanadium	**7440-62-2**	**0.815**		**0.0399**
Zinc	7440-66-6	15.3	U	57.9

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FILE #: 4205.00.003.001
REPORTED: 03/21/24 15:20
SUBMITTED: 03/11/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-030224-HM
Matrix: Air
Lab ID: 4031151-13
Sample Volume: 1824.298 m³
Filter ID:
Sampled: 03/02/24 23:59
Received: 03/11/24 11:48
Analysis Date: 03/15/24 08:21

Comments: Q9554718 - Received in good condition. - Nonhomogenous Sample

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0440**	SL	**0.0344**
Arsenic	**7440-38-2**	**0.209**		**0.00836**
Barium	**7440-39-3**	**3.11**		**0.954**
Beryllium	**7440-41-7**	**0.0105**		**0.00285**
Cadmium	7440-43-9	0.0102	U	0.0661
Chromium	**7440-47-3**	**2.24**		**1.97**
Cobalt	**7440-48-4**	**0.277**		**0.0389**
Copper	**7440-50-8**	**23.3**		**2.35**
Lead	**7439-92-1**	**0.605**		**0.191**
Manganese	**7439-96-5**	**8.46**		**1.69**
Molybdenum	**7439-98-7**	**1.12**		**0.320**
Nickel	**7440-02-0**	**0.952**		**0.581**
Selenium	**7782-49-2**	**0.145**		**0.00799**
Thallium	**7440-28-0**	**0.00111**	B, LB, QB-04	**5.25E-4**
Vanadium	**7440-62-2**	**0.819**		**0.0472**
Zinc	7440-66-6	20.8	U	68.5

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FILE #: 4205.00.003.001
REPORTED: 03/21/24 15:20
SUBMITTED: 03/11/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-FB01-030224-HM
Matrix: Air
Lab ID: 4031151-14
Sample Volume: 1982.074 m³
Filter ID:
Sampled: 03/02/24 00:00
Received: 03/11/24 11:48
Analysis Date: 03/15/24 08:36

Comments: Q9554743 - 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	0.00779	U, SL	0.0317
Arsenic	**7440-38-2**	**0.00808**	FB-01	**0.00769**
Barium	7440-39-3	0.576	U	0.878
Beryllium	7440-41-7	0.00120	U	0.00263
Cadmium	7440-43-9	0.00170	U	0.0608
Chromium	7440-47-3	1.20	U	1.81
Cobalt	7440-48-4	0.0194	U	0.0358
Copper	7440-50-8	0.601	U	2.16
Lead	7439-92-1	0.0548	U	0.176
Manganese	7439-96-5	0.184	U	1.55
Molybdenum	7439-98-7	0.221	U	0.295
Nickel	7440-02-0	0.247	U	0.535
Selenium	7782-49-2	0.00144	U	0.00735
Thallium	7440-28-0	1.62E-4	U, B, LB, QB-04	4.83E-4
Vanadium	7440-62-2	0.0136	U	0.0434
Zinc	7440-66-6	10.9	U	63.0

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FILE #: 4205.00.003.001
REPORTED: 03/21/24 15:20
SUBMITTED: 03/11/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-030324-HM **Lab ID:** 4031151-15 **Sampled:** 03/03/24 23:59
Matrix: Air **Sample Volume:** 1982.074 m³ **Received:** 03/11/24 11:48
Filter ID: **Analysis Date:** 03/15/24 08:50

Comments: Q9554741 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.109**	SL	**0.0317**
Arsenic	**7440-38-2**	**1.32**		**0.00769**
Barium	**7440-39-3**	**3.44**		**0.878**
Beryllium	**7440-41-7**	**0.00762**		**0.00263**
Cadmium	7440-43-9	0.0171	U	0.0608
Chromium	**7440-47-3**	**2.49**		**1.81**
Cobalt	**7440-48-4**	**0.308**		**0.0358**
Copper	**7440-50-8**	**62.3**		**2.16**
Lead	**7439-92-1**	**0.853**		**0.176**
Manganese	**7439-96-5**	**8.45**		**1.55**
Molybdenum	**7439-98-7**	**3.00**		**0.295**
Nickel	**7440-02-0**	**0.897**		**0.535**
Selenium	**7782-49-2**	**0.139**		**0.00735**
Thallium	**7440-28-0**	**0.00141**	B, LB, QB-04	**4.83E-4**
Vanadium	**7440-62-2**	**0.795**		**0.0434**
Zinc	7440-66-6	18.4	U	63.0

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Tetra Tech, Inc.
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FILE #: 4205.00.003.001
REPORTED: 03/21/24 15:20
SUBMITTED: 03/11/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-030324-HM
Matrix: Air
Lab ID: 4031151-16
Sample Volume: 1880.374 m³
Filter ID:
Sampled: 03/03/24 23:59
Received: 03/11/24 11:48
Analysis Date: 03/15/24 09:05

Comments: Q9554739 - 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**	**0.211**	SL	**0.0334**
Arsenic	**7440-38-2**	**1.01**		**0.00811**
Barium	**7440-39-3**	**7.65**		**0.926**
Beryllium	**7440-41-7**	**0.0250**		**0.00277**
Cadmium	7440-43-9	0.0284	U	0.0641
Chromium	**7440-47-3**	**3.70**		**1.91**
Cobalt	**7440-48-4**	**0.735**		**0.0377**
Copper	**7440-50-8**	**69.7**		**2.28**
Lead	**7439-92-1**	**1.90**		**0.185**
Manganese	**7439-96-5**	**22.8**		**1.64**
Molybdenum	**7439-98-7**	**2.06**		**0.311**
Nickel	**7440-02-0**	**2.13**		**0.564**
Selenium	**7782-49-2**	**0.240**		**0.00775**
Thallium	**7440-28-0**	**0.00205**	B, LB, QB-04	**5.10E-4**
Vanadium	**7440-62-2**	**2.16**		**0.0458**
Zinc	7440-66-6	36.8	U	66.5

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Tetra Tech, Inc.
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FILE #: 4205.00.003.001
REPORTED: 03/21/24 15:20
SUBMITTED: 03/11/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-030324-HM/MS/MSI **Lab ID:** 4031151-17 **Sampled:** 03/03/24 23:59
Matrix: Air **Sample Volume:** 2021.311 m³ **Received:** 03/11/24 11:48
Filter ID: **Analysis Date:** 03/14/24 20:59

Comments: Q9554737 - 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**	**0.0326**	SL	**0.0311**
Arsenic	**7440-38-2**	**0.150**		**0.00754**
Barium	**7440-39-3**	**1.63**		**0.861**
Beryllium	**7440-41-7**	**0.00730**		**0.00258**
Cadmium	7440-43-9	0.0106	U	0.0596
Chromium	**7440-47-3**	**1.87**		**1.78**
Cobalt	**7440-48-4**	**0.130**		**0.0351**
Copper	**7440-50-8**	**36.0**		**2.12**
Lead	**7439-92-1**	**0.416**		**0.172**
Manganese	**7439-96-5**	**3.65**		**1.52**
Molybdenum	**7439-98-7**	**2.35**		**0.289**
Nickel	**7440-02-0**	**0.660**		**0.525**
Selenium	**7782-49-2**	**0.124**		**0.00721**
Thallium	**7440-28-0**	**0.00130**	B, LB, QB-04	**4.74E-4**
Vanadium	**7440-62-2**	**0.335**		**0.0426**
Zinc	7440-66-6	12.2	U	61.8

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

FILE #: 4205.00.003.001
REPORTED: 03/21/24 15:20
SUBMITTED: 03/11/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-030324-HM
Matrix: Air
Lab ID: 4031151-18
Sample Volume: 1987.062 m³
Filter ID:
Sampled: 03/03/24 23:59
Received: 03/11/24 11:48
Analysis Date: 03/15/24 09:21

Comments: Q9554735 - Received in good condition. - Nonhomogenous Sample

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0376**	SL	**0.0316**
Arsenic	**7440-38-2**	**0.153**		**0.00767**
Barium	**7440-39-3**	**1.88**		**0.876**
Beryllium	**7440-41-7**	**0.00464**		**0.00262**
Cadmium	**7440-43-9**	**0.646**		**0.0607**
Chromium	**7440-47-3**	**1.86**		**1.81**
Cobalt	**7440-48-4**	**0.116**		**0.0357**
Copper	**7440-50-8**	**23.8**		**2.15**
Lead	**7439-92-1**	**0.383**		**0.175**
Manganese	**7439-96-5**	**3.35**		**1.55**
Molybdenum	**7439-98-7**	**1.23**		**0.294**
Nickel	**7440-02-0**	**0.664**		**0.534**
Selenium	**7782-49-2**	**0.106**		**0.00734**
Thallium	**7440-28-0**	**9.28E-4**	B, LB, QB-04	**4.82E-4**
Vanadium	**7440-62-2**	**0.290**		**0.0433**
Zinc	7440-66-6	14.0	U	62.9

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

FILE #: 4205.00.003.001
REPORTED: 03/21/24 15:20
SUBMITTED: 03/11/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-030424-HM **Lab ID:** 4031151-19 **Sampled:** 03/04/24 23:59
Matrix: Air **Sample Volume:** 1964.168 m³ **Received:** 03/11/24 11:48
Filter ID: **Analysis Date:** 03/15/24 09:37

Comments: Q9554734 - 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**	**0.0471**	SL	**0.0320**
Arsenic	**7440-38-2**	**0.567**		**0.00776**
Barium	**7440-39-3**	**2.48**		**0.886**
Beryllium	**7440-41-7**	**0.00583**		**0.00265**
Cadmium	7440-43-9	0.0114	U	0.0614
Cobalt	**7440-48-4**	**1.65**		**0.0361**
Copper	**7440-50-8**	**91.9**		**2.18**
Lead	**7439-92-1**	**0.908**		**0.177**
Manganese	**7439-96-5**	**12.4**		**1.57**
Molybdenum	**7439-98-7**	**4.73**		**0.297**
Selenium	**7782-49-2**	**0.141**		**0.00742**
Thallium	**7440-28-0**	**7.36E-4**	B, LB, QB-04	**4.88E-4**
Vanadium	**7440-62-2**	**1.27**		**0.0438**
Zinc	7440-66-6	27.2	U	63.6

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Tetra Tech, Inc.
1777 Sentry Pkwy, Bldg 12
Blue Bell, PA 19422
ATTN: Ms. Chelsea Saber
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FILE #: 4205.00.003.001
REPORTED: 03/21/24 15:20
SUBMITTED: 03/11/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-030424-HM
Matrix: Air
Lab ID: 4031151-19RE1
Sample Volume: 1964.168 m³
Filter ID:
Sampled: 03/04/24 23:59
Received: 03/11/24 11:48
Analysis Date: 03/19/24 18:58

Comments: Q9554734 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Chromium	7440-47-3	133	D	3.66
Nickel	7440-02-0	54.4	D	1.08

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

FILE #: 4205.00.003.001
REPORTED: 03/21/24 15:20
SUBMITTED: 03/11/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-030424-HM
Matrix: Air
Lab ID: 4031151-20
Sample Volume: 2061.439 m³
Filter ID:
Sampled: 03/04/24 23:59
Received: 03/11/24 11:48
Analysis Date: 03/15/24 00:51

Comments: Q9554733 - 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**	**0.124**	SL	**0.0305**
Arsenic	**7440-38-2**	**0.481**		**0.00740**
Barium	**7440-39-3**	**4.13**		**0.845**
Beryllium	**7440-41-7**	**0.0104**		**0.00253**
Cadmium	7440-43-9	0.0132	U	0.0585
Chromium	**7440-47-3**	**2.15**		**1.74**
Cobalt	**7440-48-4**	**0.294**		**0.0344**
Copper	**7440-50-8**	**36.9**		**2.08**
Lead	**7439-92-1**	**0.931**		**0.169**
Manganese	**7439-96-5**	**8.22**		**1.49**
Molybdenum	**7439-98-7**	**1.95**		**0.283**
Nickel	**7440-02-0**	**1.03**		**0.515**
Selenium	**7782-49-2**	**0.155**		**0.00707**
Thallium	**7440-28-0**	**9.12E-4**	B, LB, QB-04	**4.65E-4**
Vanadium	**7440-62-2**	**0.973**		**0.0418**
Zinc	7440-66-6	22.5	U	60.6

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: 03/21/24 15:20
SUBMITTED: 03/11/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-030424-HM
Matrix: Air
Lab ID: 4031151-21
Sample Volume: 2252.38 m³
Filter ID:
Sampled: 03/04/24 23:59
Received: 03/11/24 11:48
Analysis Date: 03/15/24 09:57

Comments: Q9537219 - 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**	**0.0500**	SL	**0.0279**
Arsenic	**7440-38-2**	**0.158**		**0.00677**
Barium	**7440-39-3**	**2.20**		**0.773**
Beryllium	**7440-41-7**	**0.0170**		**0.00231**
Cadmium	7440-43-9	0.0335	U	0.0535
Chromium	**7440-47-3**	**2.07**		**1.60**
Cobalt	**7440-48-4**	**0.303**		**0.0315**
Copper	**7440-50-8**	**36.0**		**1.90**
Lead	**7439-92-1**	**0.347**		**0.155**
Manganese	**7439-96-5**	**7.50**		**1.37**
Molybdenum	**7439-98-7**	**2.47**		**0.259**
Nickel	**7440-02-0**	**1.01**		**0.471**
Selenium	**7782-49-2**	**0.156**		**0.00647**
Thallium	**7440-28-0**	**6.64E-4**	B, LB, QB-04	**4.25E-4**
Vanadium	**7440-62-2**	**0.867**		**0.0382**
Zinc	7440-66-6	12.3	U	55.5

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

FILE #: 4205.00.003.001
REPORTED: 03/21/24 15:20
SUBMITTED: 03/11/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-030424-HM
Matrix: Air
Lab ID: 4031151-22
Sample Volume: 1888.516 m³
Filter ID:
Sampled: 03/04/24 23:59
Received: 03/11/24 11:48
Analysis Date: 03/15/24 11:26

Comments: Q9537216 - 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**	**0.0613**	SL	**0.0333**
Arsenic	**7440-38-2**	**0.240**		**0.00807**
Barium	**7440-39-3**	**3.21**		**0.922**
Beryllium	**7440-41-7**	**0.0104**		**0.00276**
Cadmium	7440-43-9	0.0134	U	0.0638
Chromium	**7440-47-3**	**2.47**		**1.90**
Cobalt	**7440-48-4**	**0.270**		**0.0376**
Copper	**7440-50-8**	**26.8**		**2.27**
Lead	**7439-92-1**	**0.719**		**0.184**
Manganese	**7439-96-5**	**8.29**		**1.63**
Molybdenum	**7439-98-7**	**1.34**		**0.309**
Nickel	**7440-02-0**	**0.993**		**0.562**
Selenium	**7782-49-2**	**0.152**		**0.00772**
Thallium	**7440-28-0**	**9.24E-4**	B, LB, QB-04	**5.07E-4**
Vanadium	**7440-62-2**	**0.864**		**0.0456**
Zinc	7440-66-6	19.1	U, LJ, QX	66.2

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

FILE #: 4205.00.003.001
REPORTED: 03/21/24 15:20
SUBMITTED: 03/11/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-FB01-030424-HM
Matrix: Air
Lab ID: 4031151-23
Sample Volume: 1964.168 m³
Filter ID:
Sampled: 03/04/24 00:00
Received: 03/11/24 11:48
Analysis Date: 03/15/24 11:44

Comments: Q9537232 - 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	0.00559	U, SL	0.0320
Arsenic	7440-38-2	0.00426	U	0.00776
Barium	7440-39-3	0.552	U	0.886
Beryllium	7440-41-7	9.62E-4	U	0.00265
Cadmium	7440-43-9	0.00246	U	0.0614
Chromium	7440-47-3	1.56	U	1.83
Cobalt	**7440-48-4**	**0.0361**		**0.0361**
Copper	7440-50-8	0.430	U	2.18
Lead	7439-92-1	0.0553	U	0.177
Manganese	7439-96-5	0.127	U	1.57
Molybdenum	7439-98-7	0.251	U	0.297
Nickel	7440-02-0	0.246	U	0.540
Selenium	7782-49-2	ND	U	0.00742
Thallium	7440-28-0	2.99E-4	U, B, LB, QB-04	4.88E-4
Vanadium	7440-62-2	ND	U	0.0438
Zinc	7440-66-6	22.5	U, LJ, QX	63.6

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FILE #: 4205.00.003.001
REPORTED: 03/21/24 15:20
SUBMITTED: 03/11/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-030524-HM
Matrix: Air
Lab ID: 4031151-24
Sample Volume: 2005.025 m³
Filter ID:
Sampled: 03/05/24 23:59
Received: 03/11/24 11:48
Analysis Date: 03/15/24 11:58

Comments: Q9537235 - 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**	**0.0718**	SL	**0.0313**
Arsenic	**7440-38-2**	**1.02**		**0.00760**
Barium	**7440-39-3**	**3.85**		**0.868**
Beryllium	**7440-41-7**	**0.0128**		**0.00260**
Cadmium	7440-43-9	0.0332	U	0.0601
Chromium	**7440-47-3**	**6.42**		**1.79**
Cobalt	**7440-48-4**	**0.556**		**0.0354**
Copper	**7440-50-8**	**62.1**		**2.13**
Lead	**7439-92-1**	**0.624**		**0.174**
Manganese	**7439-96-5**	**13.4**		**1.53**
Molybdenum	**7439-98-7**	**2.70**		**0.291**
Nickel	**7440-02-0**	**2.60**		**0.529**
Selenium	**7782-49-2**	**0.170**		**0.00727**
Thallium	**7440-28-0**	**0.00137**	B, LB, QB-04	**4.78E-4**
Vanadium	**7440-62-2**	**1.33**		**0.0429**
Zinc	7440-66-6	36.2	U, LJ, QX	62.3

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

FILE #: 4205.00.003.001
REPORTED: 03/21/24 15:20
SUBMITTED: 03/11/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-030524-HM
Matrix: Air
Lab ID: 4031151-25
Sample Volume: 1898.258 m³
Filter ID:
Sampled: 03/05/24 23:59
Received: 03/11/24 11:48
Analysis Date: 03/15/24 12:15

Comments: Q9537233 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.148**	SL	**0.0331**
Arsenic	**7440-38-2**	**0.986**		**0.00803**
Barium	**7440-39-3**	**6.72**		**0.917**
Beryllium	**7440-41-7**	**0.0239**		**0.00274**
Cadmium	**7440-43-9**	**0.100**		**0.0635**
Chromium	**7440-47-3**	**4.22**		**1.89**
Cobalt	**7440-48-4**	**0.751**		**0.0374**
Copper	**7440-50-8**	**50.7**		**2.25**
Lead	**7439-92-1**	**1.97**		**0.183**
Manganese	**7439-96-5**	**21.6**		**1.62**
Molybdenum	**7439-98-7**	**2.09**		**0.308**
Nickel	**7440-02-0**	**2.47**		**0.559**
Selenium	**7782-49-2**	**0.234**		**0.00768**
Thallium	**7440-28-0**	**0.00181**	B, LB, QB-04	**5.05E-4**
Vanadium	**7440-62-2**	**2.11**		**0.0453**
Zinc	7440-66-6	45.4	U, LJ, QX	65.8

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

FILE #: 4205.00.003.001
REPORTED: 03/21/24 15:20
SUBMITTED: 03/11/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-030524-HM
Matrix: Air
Lab ID: 4031151-26
Sample Volume: 2015.088 m³
Filter ID:
Sampled: 03/05/24 23:59
Received: 03/11/24 11:48
Analysis Date: 03/15/24 12:32

Comments: Q9537231 - Received in good condition. - Nonhomogenous Sample

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0545**	SL	**0.0312**
Arsenic	**7440-38-2**	**0.207**		**0.00757**
Barium	**7440-39-3**	**3.18**		**0.864**
Beryllium	**7440-41-7**	**0.0224**		**0.00258**
Cadmium	7440-43-9	0.0134	U	0.0598
Chromium	**7440-47-3**	**3.00**		**1.78**
Cobalt	**7440-48-4**	**0.446**		**0.0352**
Copper	**7440-50-8**	**39.7**		**2.12**
Lead	**7439-92-1**	**0.410**		**0.173**
Manganese	**7439-96-5**	**11.0**		**1.53**
Molybdenum	**7439-98-7**	**2.74**		**0.290**
Nickel	**7440-02-0**	**1.25**		**0.526**
Selenium	**7782-49-2**	**0.177**		**0.00723**
Thallium	**7440-28-0**	**0.00142**	B, LB, QB-04	**4.76E-4**
Vanadium	**7440-62-2**	**1.07**		**0.0427**
Zinc	7440-66-6	30.9	U, LJ, QX	62.0

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

FILE #: 4205.00.003.001
REPORTED: 03/21/24 15:20
SUBMITTED: 03/11/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-030524-HM
Matrix: Air
Lab ID: 4031151-27
Sample Volume: 2022.635 m³
Filter ID:
Sampled: 03/05/24 23:59
Received: 03/11/24 11:48
Analysis Date: 03/15/24 12:48

Comments: Q9537229 - 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**	**0.0500**	SL	**0.0310**
Arsenic	**7440-38-2**	**0.206**		**0.00754**
Barium	**7440-39-3**	**2.37**		**0.861**
Beryllium	**7440-41-7**	**0.00732**		**0.00257**
Cadmium	7440-43-9	0.0127	U	0.0596
Chromium	**7440-47-3**	**2.09**		**1.78**
Cobalt	**7440-48-4**	**0.202**		**0.0351**
Copper	**7440-50-8**	**18.5**		**2.12**
Lead	**7439-92-1**	**0.549**		**0.172**
Manganese	**7439-96-5**	**6.05**		**1.52**
Molybdenum	**7439-98-7**	**1.24**		**0.289**
Nickel	**7440-02-0**	**0.705**		**0.524**
Selenium	**7782-49-2**	**0.147**		**0.00721**
Thallium	**7440-28-0**	**9.93E-4**	B, LB, QB-04	**4.74E-4**
Vanadium	**7440-62-2**	**0.543**		**0.0426**
Zinc	7440-66-6	21.3	U, LJ, QX	61.8

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 03/21/24 15:20
SUBMITTED: 03/11/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-030624-HM
Matrix: Air
Lab ID: 4031151-28
Sample Volume: 2005.025 m³
Filter ID:
Sampled: 03/06/24 23:59
Received: 03/11/24 11:48
Analysis Date: 03/15/24 13:20

Comments: Q9537228 - 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**	**0.0633**	SL	**0.0313**
Arsenic	**7440-38-2**	**0.906**		**0.00760**
Barium	**7440-39-3**	**5.84**		**0.868**
Beryllium	**7440-41-7**	**0.0243**		**0.00260**
Cadmium	7440-43-9	0.0305	U	0.0601
Chromium	**7440-47-3**	**7.41**		**1.79**
Cobalt	**7440-48-4**	**1.11**		**0.0354**
Copper	**7440-50-8**	**41.1**		**2.13**
Lead	**7439-92-1**	**0.744**		**0.174**
Manganese	**7439-96-5**	**31.9**		**1.53**
Molybdenum	**7439-98-7**	**1.52**		**0.291**
Nickel	**7440-02-0**	**3.03**		**0.529**
Selenium	**7782-49-2**	**0.217**		**0.00727**
Thallium	**7440-28-0**	**0.00234**	B, LB, QB-04	**4.78E-4**
Vanadium	**7440-62-2**	**2.87**		**0.0429**
Zinc	7440-66-6	26.9	U, LJ, QX	62.3

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

FILE #: 4205.00.003.001
REPORTED: 03/21/24 15:20
SUBMITTED: 03/11/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-030624-HM
Matrix: Air
Lab ID: 4031151-29
Sample Volume: 1916.959 m³
Filter ID:
Sampled: 03/06/24 23:59
Received: 03/11/24 11:48
Analysis Date: 03/15/24 13:37

Comments: Q9537227 - 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**	**0.159**	SL	**0.0328**
Arsenic	**7440-38-2**	**1.14**		**0.00795**
Barium	**7440-39-3**	**10.9**		**0.908**
Beryllium	**7440-41-7**	**0.0451**		**0.00272**
Cadmium	**7440-43-9**	**0.169**		**0.0629**
Chromium	**7440-47-3**	**6.65**		**1.88**
Cobalt	**7440-48-4**	**1.73**		**0.0370**
Copper	**7440-50-8**	**39.6**		**2.23**
Lead	**7439-92-1**	**2.74**		**0.182**
Manganese	**7439-96-5**	**46.0**		**1.60**
Molybdenum	**7439-98-7**	**1.32**		**0.305**
Nickel	**7440-02-0**	**5.19**		**0.553**
Selenium	**7782-49-2**	**0.299**		**0.00760**
Thallium	**7440-28-0**	**0.00298**	B, LB, QB-04	**5.00E-4**
Vanadium	**7440-62-2**	**4.57**		**0.0449**
Zinc	7440-66-6	44.8	U, LJ, QX	65.2

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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: 03/21/24 15:20
SUBMITTED: 03/11/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-030624-HM
Matrix: Air
Lab ID: 4031151-30
Sample Volume: 2012.853 m³
Filter ID:
Sampled: 03/06/24 23:59
Received: 03/11/24 11:48
Analysis Date: 03/15/24 13:57

Comments: Q9537225 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0453**	SL	**0.0312**
Arsenic	**7440-38-2**	**0.429**		**0.00757**
Barium	**7440-39-3**	**8.16**		**0.865**
Beryllium	**7440-41-7**	**0.172**		**0.00259**
Cadmium	7440-43-9	0.0206	U	0.0599
Chromium	**7440-47-3**	**9.47**		**1.79**
Cobalt	**7440-48-4**	**2.13**		**0.0352**
Copper	**7440-50-8**	**41.3**		**2.13**
Lead	**7439-92-1**	**0.707**		**0.173**
Manganese	**7439-96-5**	**42.1**		**1.53**
Molybdenum	**7439-98-7**	**2.04**		**0.290**
Nickel	**7440-02-0**	**4.83**		**0.527**
Selenium	**7782-49-2**	**0.376**		**0.00724**
Thallium	**7440-28-0**	**0.00276**	QB-04, B, LB	**4.76E-4**
Vanadium	**7440-62-2**	**5.09**		**0.0428**
Zinc	7440-66-6	23.0	U, LJ, QX	62.1

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

FILE #: 4205.00.003.001
REPORTED: 03/21/24 15:20
SUBMITTED: 03/11/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-030624-HM
Matrix: Air
Lab ID: 4031151-31
Sample Volume: 1984.061 m³
Filter ID:
Sampled: 03/06/24 23:59
Received: 03/11/24 11:48
Analysis Date: 03/15/24 15:35

Comments: Q9537224 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0779**	SL	**0.0317**
Arsenic	**7440-38-2**	**0.512**		**0.00768**
Barium	**7440-39-3**	**4.30**		**0.877**
Beryllium	**7440-41-7**	**0.0195**		**0.00262**
Cadmium	**7440-43-9**	**0.334**		**0.0608**
Chromium	**7440-47-3**	**3.36**		**1.81**
Cobalt	**7440-48-4**	**0.762**		**0.0358**
Copper	**7440-50-8**	**22.4**		**2.16**
Lead	**7439-92-1**	**1.41**		**0.175**
Manganese	**7439-96-5**	**17.3**		**1.55**
Molybdenum	**7439-98-7**	**0.992**		**0.294**
Nickel	**7440-02-0**	**1.63**		**0.535**
Selenium	**7782-49-2**	**0.163**		**0.00735**
Thallium	**7440-28-0**	**0.00182**	B, LB, QB-04	**4.83E-4**
Vanadium	**7440-62-2**	**1.38**		**0.0434**
Zinc	7440-66-6	27.9	U, LJ, QX	63.0

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 03/21/24 15:20
SUBMITTED: 03/11/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-FB01-030624-HM **Lab ID:** 4031151-32 **Sampled:** 03/06/24 00:00
Matrix: Air **Sample Volume:** 2005.025 m³ **Received:** 03/11/24 11:48
Filter ID: **Analysis Date:** 03/15/24 15:55

Comments: Q9537245 - 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	0.00760	U, SL	0.0313
Arsenic	7440-38-2	0.00630	U	0.00760
Barium	7440-39-3	0.581	U	0.868
Beryllium	7440-41-7	0.00111	U	0.00260
Cadmium	7440-43-9	0.00259	U	0.0601
Chromium	7440-47-3	1.57	U	1.79
Cobalt	7440-48-4	0.0260	U	0.0354
Copper	7440-50-8	0.627	U	2.13
Lead	7439-92-1	0.0643	U	0.174
Manganese	7439-96-5	0.255	U	1.53
Molybdenum	7439-98-7	0.271	U	0.291
Nickel	7440-02-0	0.274	U	0.529
Selenium	7782-49-2	ND	U	0.00727
Thallium	7440-28-0	2.18E-4	U, B, LB, QB-04	4.78E-4
Vanadium	7440-62-2	0.00996	U	0.0429
Zinc	7440-66-6	10.3	U, LJ, QX	62.3

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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 2403035 - B4C1210										
Calibration Blank (2403035-CCB1)				Prepared & Analyzed: 03/14/24						
Antimony	0.719		ng/l							
Arsenic	7.98		ng/l							
Barium	-1.59		ng/l							U
Beryllium	0.162		ng/l							
Cadmium	0.0951		ng/l							
Chromium	4.64		ng/l							
Cobalt	0.544		ng/l							
Copper	50.4		ng/l							
Lead	3.93		ng/l							
Manganese	8.37		ng/l							
Molybdenum	22.0		ng/l							
Nickel	0.847		ng/l							
Selenium	-6.71		ng/l							U
Thallium	2.16		ng/l							LB, QB-04
Vanadium	-48.2		ng/l							U
Zinc	76.2		ng/l							
Calibration Blank (2403035-CCB2)				Prepared & Analyzed: 03/14/24						
Antimony	0.0937		ng/l							
Arsenic	5.14		ng/l							
Barium	-1.73		ng/l							U
Beryllium	0.0714		ng/l							
Cadmium	-0.0254		ng/l							U
Chromium	2.79		ng/l							
Cobalt	0.0977		ng/l							
Copper	11.0		ng/l							
Lead	1.42		ng/l							
Manganese	5.66		ng/l							
Molybdenum	4.28		ng/l							
Nickel	1.54		ng/l							
Selenium	-6.95		ng/l							U
Thallium	1.24		ng/l							LB
Vanadium	-52.4		ng/l							U
Zinc	37.6		ng/l							
Calibration Blank (2403035-CCB3)				Prepared: 03/14/24 Analyzed: 03/15/24						
Antimony	-0.0320		ng/l							U
Arsenic	6.72		ng/l							
Barium	-2.63		ng/l							U
Beryllium	0.248		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 2403035 - B4C1210										
Calibration Blank (2403035-CCB3) Contin				Prepared: 03/14/24 Analyzed: 03/15/24						
Cadmium	-0.0824		ng/l							U
Chromium	3.88		ng/l							
Cobalt	0.274		ng/l							
Copper	15.2		ng/l							
Lead	1.22		ng/l							
Manganese	5.41		ng/l							
Molybdenum	3.19		ng/l							
Nickel	1.65		ng/l							
Selenium	5.64		ng/l							
Thallium	1.41		ng/l							LB, QB-04
Vanadium	-54.6		ng/l							U
Zinc	50.3		ng/l							
Calibration Blank (2403035-CCB4)				Prepared: 03/14/24 Analyzed: 03/15/24						
Antimony	0.260		ng/l							
Arsenic	9.05		ng/l							
Barium	-2.25		ng/l							U
Beryllium	0.184		ng/l							
Cadmium	0.0427		ng/l							
Chromium	4.16		ng/l							
Cobalt	0.247		ng/l							
Copper	14.2		ng/l							
Lead	1.68		ng/l							
Manganese	6.22		ng/l							
Molybdenum	4.16		ng/l							
Nickel	0.221		ng/l							
Selenium	1.42		ng/l							
Thallium	1.80		ng/l							LB, QB-04
Vanadium	-59.3		ng/l							U
Zinc	264		ng/l							
Calibration Blank (2403035-CCB5)				Prepared: 03/14/24 Analyzed: 03/15/24						
Antimony	0.184		ng/l							
Arsenic	12.9		ng/l							
Barium	-2.76		ng/l							U
Beryllium	0.122		ng/l							
Cadmium	0.183		ng/l							
Chromium	3.71		ng/l							
Cobalt	0.252		ng/l							
Copper	17.2		ng/l							

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2403035 - B4C1210										
Calibration Blank (2403035-CCB5) Contin				Prepared: 03/14/24 Analyzed: 03/15/24						
Lead	2.00		ng/l							
Manganese	4.88		ng/l							
Molybdenum	5.66		ng/l							
Nickel	1.88		ng/l							
Selenium	1.87		ng/l							
Thallium	1.88		ng/l							LB, QB-04
Vanadium	-62.8		ng/l							U
Zinc	44.8		ng/l							
Calibration Blank (2403035-CCB6)				Prepared: 03/14/24 Analyzed: 03/15/24						
Antimony	0.433		ng/l							
Arsenic	9.96		ng/l							
Barium	-1.90		ng/l							U
Beryllium	0.163		ng/l							
Cadmium	-0.0456		ng/l							U
Chromium	4.48		ng/l							
Cobalt	0.485		ng/l							
Copper	20.6		ng/l							
Lead	2.71		ng/l							
Manganese	5.78		ng/l							
Molybdenum	6.09		ng/l							
Nickel	2.14		ng/l							
Selenium	-8.47		ng/l							U
Thallium	1.69		ng/l							LB, QB-04
Vanadium	-67.6		ng/l							U
Zinc	53.8		ng/l							
Calibration Blank (2403035-CCB7)				Prepared: 03/14/24 Analyzed: 03/15/24						
Antimony	0.355		ng/l							
Arsenic	10.9		ng/l							
Barium	-2.54		ng/l							U
Beryllium	0.0106		ng/l							
Cadmium	-0.0225		ng/l							U
Chromium	2.87		ng/l							
Cobalt	0.246		ng/l							
Copper	16.5		ng/l							
Lead	2.48		ng/l							
Manganese	4.35		ng/l							
Molybdenum	5.18		ng/l							
Nickel	2.77		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 2403035 - B4C1210										
Calibration Blank (2403035-CCB7) Contin				Prepared: 03/14/24 Analyzed: 03/15/24						
Selenium	-4.94		ng/l							U
Thallium	1.70		ng/l							LB, QB-04
Vanadium	-67.6		ng/l							U
Zinc	42.2		ng/l							
Calibration Check (2403035-CCV1)				Prepared & Analyzed: 03/14/24						
Antimony	20100		ng/l	20000		100	90-110			
Arsenic	19900		ng/l	20000		99.4	90-110			
Barium	198000		ng/l	200000		99.1	90-110			
Beryllium	5080		ng/l	5000.0		102	90-110			
Cadmium	19500		ng/l	20000		97.7	90-110			
Chromium	229000		ng/l	240000		95.5	90-110			
Cobalt	49700		ng/l	50000		99.4	90-110			
Copper	1.99E6		ng/l	2.0000E6		99.5	90-110			
Lead	195000		ng/l	200000		97.3	90-110			
Manganese	489000		ng/l	500000		97.7	90-110			
Molybdenum	48100		ng/l	50000		96.3	90-110			
Nickel	119000		ng/l	120000		99.2	90-110			
Selenium	19800		ng/l	20000		99.0	90-110			
Thallium	480		ng/l	500.00		96.0	90-110			LB
Vanadium	18900		ng/l	20000		94.3	90-110			
Zinc	515000		ng/l	500000		103	90-110			
Calibration Check (2403035-CCV2)				Prepared & Analyzed: 03/14/24						
Antimony	20600		ng/l	20000		103	90-110			
Arsenic	20300		ng/l	20000		101	90-110			
Barium	200000		ng/l	200000		100	90-110			
Beryllium	4960		ng/l	5000.0		99.3	90-110			
Cadmium	20300		ng/l	20000		102	90-110			
Chromium	237000		ng/l	240000		98.8	90-110			
Cobalt	50100		ng/l	50000		100	90-110			
Copper	2.04E6		ng/l	2.0000E6		102	90-110			
Lead	201000		ng/l	200000		101	90-110			
Manganese	502000		ng/l	500000		100	90-110			
Molybdenum	49400		ng/l	50000		98.8	90-110			
Nickel	122000		ng/l	120000		101	90-110			
Selenium	20200		ng/l	20000		101	90-110			
Thallium	484		ng/l	500.00		96.8	90-110			LB
Vanadium	19600		ng/l	20000		98.1	90-110			
Zinc	531000		ng/l	500000		106	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 2403035 - B4C1210										
Calibration Check (2403035-CCV3)				Prepared: 03/14/24 Analyzed: 03/15/24						
Antimony	20600		ng/l	20000		103	90-110			
Arsenic	20400		ng/l	20000		102	90-110			
Barium	199000		ng/l	200000		99.5	90-110			
Beryllium	5130		ng/l	5000.0		103	90-110			
Cadmium	20400		ng/l	20000		102	90-110			
Chromium	236000		ng/l	240000		98.4	90-110			
Cobalt	49800		ng/l	50000		99.6	90-110			
Copper	2.04E6		ng/l	2.0000E6		102	90-110			
Lead	200000		ng/l	200000		100	90-110			
Manganese	496000		ng/l	500000		99.3	90-110			
Molybdenum	49500		ng/l	50000		98.9	90-110			
Nickel	121000		ng/l	120000		101	90-110			
Selenium	20600		ng/l	20000		103	90-110			
Thallium	483		ng/l	500.00		96.7	90-110			LB
Vanadium	19400		ng/l	20000		96.9	90-110			
Zinc	531000		ng/l	500000		106	90-110			
Calibration Check (2403035-CCV4)				Prepared: 03/14/24 Analyzed: 03/15/24						
Antimony	21100		ng/l	20000		105	90-110			
Arsenic	20800		ng/l	20000		104	90-110			
Barium	205000		ng/l	200000		103	90-110			
Beryllium	5440		ng/l	5000.0		109	90-110			
Cadmium	20900		ng/l	20000		105	90-110			
Chromium	243000		ng/l	240000		101	90-110			
Cobalt	51700		ng/l	50000		103	90-110			
Copper	2.10E6		ng/l	2.0000E6		105	90-110			
Lead	205000		ng/l	200000		103	90-110			
Manganese	518000		ng/l	500000		104	90-110			
Molybdenum	50700		ng/l	50000		101	90-110			
Nickel	125000		ng/l	120000		104	90-110			
Selenium	20700		ng/l	20000		104	90-110			
Thallium	489		ng/l	500.00		97.8	90-110			LB
Vanadium	20000		ng/l	20000		99.9	90-110			
Zinc	547000		ng/l	500000		109	90-110			
Calibration Check (2403035-CCV5)				Prepared: 03/14/24 Analyzed: 03/15/24						
Antimony	20800		ng/l	20000		104	90-110			
Arsenic	20400		ng/l	20000		102	90-110			
Barium	204000		ng/l	200000		102	90-110			
Beryllium	5150		ng/l	5000.0		103	90-110			

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2403035 - B4C1210										
Calibration Check (2403035-CCV5) Contin				Prepared: 03/14/24 Analyzed: 03/15/24						
Cadmium	20400		ng/l	20000		102	90-110			
Chromium	235000		ng/l	240000		98.1	90-110			
Cobalt	50000		ng/l	50000		100	90-110			
Copper	2.03E6		ng/l	2.0000E6		102	90-110			
Lead	203000		ng/l	200000		101	90-110			
Manganese	502000		ng/l	500000		100	90-110			
Molybdenum	49900		ng/l	50000		99.8	90-110			
Nickel	121000		ng/l	120000		101	90-110			
Selenium	20600		ng/l	20000		103	90-110			
Thallium	484		ng/l	500.00		96.8	90-110			LB
Vanadium	19700		ng/l	20000		98.5	90-110			
Zinc	534000		ng/l	500000		107	90-110			
Calibration Check (2403035-CCV6)				Prepared: 03/14/24 Analyzed: 03/15/24						
Antimony	21500		ng/l	20000		108	90-110			
Arsenic	21200		ng/l	20000		106	90-110			
Barium	207000		ng/l	200000		104	90-110			
Beryllium	5060		ng/l	5000.0		101	90-110			
Cadmium	21200		ng/l	20000		106	90-110			
Chromium	247000		ng/l	240000		103	90-110			
Cobalt	52300		ng/l	50000		105	90-110			
Copper	2.13E6		ng/l	2.0000E6		107	90-110			
Lead	210000		ng/l	200000		105	90-110			
Manganese	518000		ng/l	500000		104	90-110			
Molybdenum	52300		ng/l	50000		105	90-110			
Nickel	127000		ng/l	120000		106	90-110			
Selenium	20900		ng/l	20000		104	90-110			
Thallium	502		ng/l	500.00		100	90-110			LB
Vanadium	20600		ng/l	20000		103	90-110			
Zinc	554000		ng/l	500000		111	90-110			LJ, QX
Calibration Check (2403035-CCV7)				Prepared: 03/14/24 Analyzed: 03/15/24						
Antimony	21300		ng/l	20000		107	90-110			
Arsenic	21000		ng/l	20000		105	90-110			
Barium	214000		ng/l	200000		107	90-110			
Beryllium	4930		ng/l	5000.0		98.5	90-110			
Cadmium	21300		ng/l	20000		107	90-110			
Chromium	246000		ng/l	240000		102	90-110			
Cobalt	52200		ng/l	50000		104	90-110			
Copper	2.12E6		ng/l	2.0000E6		106	90-110			

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2403035 - B4C1210										
Calibration Check (2403035-CCV7) Contin				Prepared: 03/14/24 Analyzed: 03/15/24						
Lead	209000		ng/l	200000		105	90-110			
Manganese	521000		ng/l	500000		104	90-110			
Molybdenum	53600		ng/l	50000		107	90-110			
Nickel	126000		ng/l	120000		105	90-110			
Selenium	20700		ng/l	20000		104	90-110			
Thallium	503		ng/l	500.00		101	90-110			LB
Vanadium	20600		ng/l	20000		103	90-110			
Zinc	552000		ng/l	500000		110	90-110			
High Cal Check (2403035-HCV1)				Prepared & Analyzed: 03/14/24						
Antimony	39900		ng/l	40000		99.7	95-105			
Arsenic	39500		ng/l	40000		98.8	95-105			
Barium	396000		ng/l	400000		99.1	95-105			
Beryllium	9510		ng/l	10000		95.1	95-105			
Cadmium	39500		ng/l	40000		98.7	95-105			
Chromium	472000		ng/l	480000		98.2	95-105			
Cobalt	98400		ng/l	100000		98.4	95-105			
Copper	3.93E6		ng/l	4.0000E6		98.4	95-105			
Lead	395000		ng/l	400000		98.9	95-105			
Manganese	983000		ng/l	1.0000E6		98.3	95-105			
Molybdenum	98300		ng/l	100000		98.3	95-105			
Nickel	236000		ng/l	240000		98.4	95-105			
Selenium	39400		ng/l	40000		98.5	95-105			
Thallium	994		ng/l	1000.0		99.4	95-105			LB
Vanadium	39300		ng/l	40000		98.3	95-105			
Zinc	960000		ng/l	1.0000E6		96.0	95-105			
Initial Cal Blank (2403035-ICB1)				Prepared & Analyzed: 03/14/24						
Antimony	1.01		ng/l							
Arsenic	1.62		ng/l							
Barium	0.233		ng/l							
Beryllium	0.325		ng/l							
Cadmium	0.242		ng/l							
Chromium	4.72		ng/l							
Cobalt	0.747		ng/l							
Copper	57.6		ng/l							
Lead	5.26		ng/l							
Manganese	11.9		ng/l							
Molybdenum	9.64		ng/l							
Nickel	9.85		ng/l							

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SITE CODE: Lahaina fires

Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2403035 - B4C1210										
Initial Cal Blank (2403035-ICB1) Continue				Prepared & Analyzed: 03/14/24						
Selenium	-11.7		ng/l							U
Thallium	1.49		ng/l							LB
Vanadium	-50.6		ng/l							U
Zinc	21.8		ng/l							
Initial Cal Check (2403035-ICV1)				Prepared & Analyzed: 03/14/24						
Antimony	19900		ng/l	20000		99.5	90-110			
Arsenic	20100		ng/l	20000		100	90-110			
Barium	201000		ng/l	200000		100	90-110			
Beryllium	4840		ng/l	5000.0		96.7	90-110			
Cadmium	20600		ng/l	20000		103	90-110			
Chromium	238000		ng/l	240000		99.0	90-110			
Cobalt	50100		ng/l	50000		100	90-110			
Copper	2.04E6		ng/l	2.0000E6		102	90-110			
Lead	197000		ng/l	200000		98.5	90-110			
Manganese	491000		ng/l	500000		98.2	90-110			
Molybdenum	50100		ng/l	50000		100	90-110			
Nickel	122000		ng/l	120000		102	90-110			
Selenium	20500		ng/l	20000		103	90-110			
Thallium	518		ng/l	500.00		104	90-110			LB
Vanadium	20100		ng/l	20000		100	90-110			
Zinc	532000		ng/l	500000		106	90-110			
Interference Check A (2403035-IFA1)				Prepared & Analyzed: 03/14/24						
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	296000		ng/l	300000		98.8	80-120			
Nickel	0.00		ng/l				80-120			U
Selenium	0.00		ng/l				80-120			U
Thallium	0.00		ng/l				80-120			LB, U
Vanadium	0.00		ng/l				80-120			U
Zinc	0.00		ng/l				80-120			U

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

FILE #: 4205.00.003.001
REPORTED: 03/21/24 15:20
SUBMITTED: 03/11/24
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 2403035 - B4C1210										
Interference Check B (2403035-IFB1)				Prepared & Analyzed: 03/14/24						
Antimony	20300		ng/l	20000		102	80-120			
Arsenic	20200		ng/l	20000		101	80-120			
Barium	202000		ng/l	200000		101	80-120			
Beryllium	4970		ng/l	5000.0		99.3	80-120			
Cadmium	19200		ng/l	20000		96.1	80-120			
Chromium	220000		ng/l	240000		91.7	80-120			
Cobalt	48600		ng/l	50000		97.3	80-120			
Copper	1.87E6		ng/l	2.0000E6		93.3	80-120			
Lead	201000		ng/l	200000		100	80-120			
Manganese	494000		ng/l	500000		98.8	80-120			
Molybdenum	346000		ng/l	350000		98.8	80-120			
Nickel	114000		ng/l	120000		95.0	80-120			
Selenium	19100		ng/l	20000		95.3	80-120			
Thallium	504		ng/l	500.00		101	80-120			LB
Vanadium	17600		ng/l	20000		88.1	80-120			
Zinc	473000		ng/l	500000		94.6	80-120			
Batch 2403053 - B4C1210										
Calibration Blank (2403053-CCB1)				Prepared & Analyzed: 03/19/24						
Antimony	0.410		ng/l							LJ, QX
Arsenic	2.88		ng/l							
Barium	-6.54E-4		ng/l							U
Beryllium	0.109		ng/l							LJ, QX
Cadmium	0.317		ng/l							
Chromium	-0.401		ng/l							U
Cobalt	0.641		ng/l							
Copper	35.0		ng/l							
Lead	7.23		ng/l							
Manganese	9.12		ng/l							
Molybdenum	7.90		ng/l							
Nickel	-7.37		ng/l							U
Selenium	5.94		ng/l							LJ, QX
Thallium	1.68		ng/l							QB-04
Vanadium	-27.2		ng/l							U
Zinc	-114		ng/l							U
Calibration Blank (2403053-CCB2)				Prepared & Analyzed: 03/19/24						
Antimony	0.440		ng/l							LJ, QX
Arsenic	2.95		ng/l							
Barium	1.55		ng/l							

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2403053 - B4C1210										
Calibration Blank (2403053-CCB2) Contin				Prepared & Analyzed: 03/19/24						
Beryllium	-0.0715		ng/l							LJ, QX, U
Cadmium	0.216		ng/l							
Chromium	1.03		ng/l							
Cobalt	0.507		ng/l							
Copper	-8.01		ng/l							U
Lead	3.65		ng/l							
Manganese	6.39		ng/l							
Molybdenum	4.10		ng/l							
Nickel	-7.17		ng/l							U
Selenium	2.67		ng/l							LJ, QX
Thallium	1.23		ng/l							
Vanadium	-21.0		ng/l							U
Zinc	-124		ng/l							U
Calibration Check (2403053-CCV1)				Prepared & Analyzed: 03/19/24						
Antimony	20300		ng/l	20000		102	90-110			LJ, QX
Arsenic	20400		ng/l	20000		102	90-110			
Barium	206000		ng/l	200000		103	90-110			
Beryllium	5000		ng/l	5000.0		100	90-110			LJ, QX
Cadmium	20100		ng/l	20000		100	90-110			
Chromium	251000		ng/l	240000		105	90-110			
Cobalt	50000		ng/l	50000		99.9	90-110			
Copper	2.02E6		ng/l	2.0000E6		101	90-110			
Lead	200000		ng/l	200000		100	90-110			
Manganese	492000		ng/l	500000		98.5	90-110			
Molybdenum	49700		ng/l	50000		99.4	90-110			
Nickel	120000		ng/l	120000		100	90-110			
Selenium	20300		ng/l	20000		102	90-110			LJ, QX
Thallium	497		ng/l	500.00		99.4	90-110			
Vanadium	19700		ng/l	20000		98.5	90-110			
Zinc	507000		ng/l	500000		101	90-110			
Calibration Check (2403053-CCV2)				Prepared & Analyzed: 03/19/24						
Antimony	20500		ng/l	20000		103	90-110			LJ, QX
Arsenic	20400		ng/l	20000		102	90-110			
Barium	211000		ng/l	200000		105	90-110			
Beryllium	4510		ng/l	5000.0		90.1	90-110			LJ, QX
Cadmium	20300		ng/l	20000		102	90-110			
Chromium	257000		ng/l	240000		107	90-110			
Cobalt	50500		ng/l	50000		101	90-110			

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2403053 - B4C1210										
Calibration Check (2403053-CCV2) Contin				Prepared & Analyzed: 03/19/24						
Copper	2.06E6		ng/l	2.0000E6		103	90-110			
Lead	203000		ng/l	200000		102	90-110			
Manganese	505000		ng/l	500000		101	90-110			
Molybdenum	51100		ng/l	50000		102	90-110			
Nickel	122000		ng/l	120000		101	90-110			
Selenium	20800		ng/l	20000		104	90-110			LJ, QX
Thallium	495		ng/l	500.00		98.9	90-110			
Vanadium	20300		ng/l	20000		101	90-110			
Zinc	512000		ng/l	500000		102	90-110			
High Cal Check (2403053-HCV1)				Prepared & Analyzed: 03/19/24						
Antimony	42300		ng/l	40000		106	95-105			LJ, QX
Arsenic	41800		ng/l	40000		104	95-105			
Barium	416000		ng/l	400000		104	95-105			
Beryllium	8080		ng/l	10000		80.8	95-105			LJ, QX
Cadmium	41800		ng/l	40000		104	95-105			
Chromium	490000		ng/l	480000		102	95-105			
Cobalt	103000		ng/l	100000		103	95-105			
Copper	4.10E6		ng/l	4.0000E6		103	95-105			
Lead	419000		ng/l	400000		105	95-105			
Manganese	1.05E6		ng/l	1.0000E6		105	95-105			
Molybdenum	105000		ng/l	100000		105	95-105			
Nickel	246000		ng/l	240000		102	95-105			
Selenium	42200		ng/l	40000		105	95-105			LJ, QX
Thallium	1030		ng/l	1000.0		103	95-105			
Vanadium	41900		ng/l	40000		105	95-105			
Zinc	1.04E6		ng/l	1.0000E6		104	95-105			
Initial Cal Blank (2403053-ICB1)				Prepared & Analyzed: 03/19/24						
Antimony	0.795		ng/l							LJ, QX
Arsenic	-0.0306		ng/l							U
Barium	0.810		ng/l							
Beryllium	-0.00848		ng/l							LJ, QX, U
Cadmium	0.0940		ng/l							
Chromium	0.954		ng/l							
Cobalt	0.520		ng/l							
Copper	38.6		ng/l							
Lead	5.67		ng/l							
Manganese	6.96		ng/l							
Molybdenum	2.78		ng/l							

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2403053 - B4C1210										
Initial Cal Blank (2403053-ICB1) Continue				Prepared & Analyzed: 03/19/24						
Nickel	-5.30		ng/l							U
Selenium	5.57		ng/l							LJ, QX
Thallium	0.906		ng/l							
Vanadium	-27.8		ng/l							U
Zinc	-109		ng/l							U
Initial Cal Check (2403053-ICV1)				Prepared & Analyzed: 03/19/24						
Antimony	20000		ng/l	20000		100	90-110			LJ, QX
Arsenic	20200		ng/l	20000		101	90-110			
Barium	199000		ng/l	200000		99.6	90-110			
Beryllium	4150		ng/l	5000.0		83.0	90-110			LJ, QX
Cadmium	20900		ng/l	20000		104	90-110			
Chromium	255000		ng/l	240000		106	90-110			
Cobalt	49900		ng/l	50000		99.7	90-110			
Copper	2.03E6		ng/l	2.0000E6		102	90-110			
Lead	199000		ng/l	200000		99.3	90-110			
Manganese	493000		ng/l	500000		98.6	90-110			
Molybdenum	50600		ng/l	50000		101	90-110			
Nickel	121000		ng/l	120000		101	90-110			
Selenium	20500		ng/l	20000		103	90-110			LJ, QX
Thallium	504		ng/l	500.00		101	90-110			
Vanadium	20400		ng/l	20000		102	90-110			
Zinc	515000		ng/l	500000		103	90-110			
Interference Check A (2403053-IFA1)				Prepared & Analyzed: 03/19/24						
Antimony	0.00		ng/l				80-120			LJ, QX, U
Arsenic	0.00		ng/l				80-120			U
Barium	0.00		ng/l				80-120			U
Beryllium	0.00		ng/l				80-120			LJ, QX, 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	300000		ng/l	300000		100	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

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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 2403053 - B4C1210										
Interference Check A (2403053-IFA1) Cor					Prepared & Analyzed: 03/19/24					
Zinc	0.00		ng/l				80-120			U
Interference Check B (2403053-IFB1)					Prepared & Analyzed: 03/19/24					
Antimony	20900		ng/l	20000		105	80-120			LJ, QX
Arsenic	20800		ng/l	20000		104	80-120			
Barium	210000		ng/l	200000		105	80-120			
Beryllium	4410		ng/l	5000.0		88.1	80-120			LJ, QX
Cadmium	19700		ng/l	20000		98.7	80-120			
Chromium	242000		ng/l	240000		101	80-120			
Cobalt	49400		ng/l	50000		98.7	80-120			
Copper	1.90E6		ng/l	2.0000E6		95.1	80-120			
Lead	208000		ng/l	200000		104	80-120			
Manganese	516000		ng/l	500000		103	80-120			
Molybdenum	352000		ng/l	350000		101	80-120			
Nickel	116000		ng/l	120000		96.5	80-120			
Selenium	20000		ng/l	20000		99.9	80-120			LJ, QX
Thallium	517		ng/l	500.00		103	80-120			
Vanadium	18600		ng/l	20000		92.8	80-120			
Zinc	469000		ng/l	500000		93.7	80-120			
Batch B4C1210 - ICP-MS Extraction										
Blank (B4C1210-BLK1)					Prepared: 03/12/24 Analyzed: 03/14/24					
Antimony	ND	0.0386	ng/m³ Air							U, SL
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, B, LB, QB-04
Vanadium	ND	0.0529	ng/m³ Air							U
Zinc	ND	76.8	ng/m³ Air							U
LCS (B4C1210-BS1)					Prepared: 03/12/24 Analyzed: 03/14/24					

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4C1210 - ICP-MS Extraction										
LCS (B4C1210-BS1) Continued				Prepared: 03/12/24 Analyzed: 03/14/24						
Antimony	0.873	0.0386	ng/m³ Air	1.3829		63.1	80-120			SL
Arsenic	2.62	0.00937	ng/m³ Air	2.7658		94.6	80-120			
Barium	27.1	1.07	ng/m³ Air	27.658		98.0	80-120			
Beryllium	1.32	0.00320	ng/m³ Air	1.3829		95.8	80-120			
Cadmium	1.34	0.0741	ng/m³ Air	1.3829		96.7	80-120			
Chromium	14.5	2.21	ng/m³ Air	13.829		105	80-120			
Cobalt	1.30	0.0436	ng/m³ Air	1.3829		94.3	80-120			
Copper	28.6	2.63	ng/m³ Air	27.658		103	80-120			
Lead	13.0	0.214	ng/m³ Air	13.829		94.2	80-120			
Manganese	8.25	1.89	ng/m³ Air	8.2975		99.4	80-120			
Molybdenum	1.37	0.359	ng/m³ Air	1.3829		99.3	80-120			
Nickel	2.80	0.652	ng/m³ Air	2.7658		101	80-120			
Selenium	2.64	0.00896	ng/m³ Air	2.7658		95.4	80-120			
Thallium	0.133	5.89E-4	ng/m³ Air	0.13829		95.9	80-120			B, LB, QB-04
Vanadium	2.60	0.0529	ng/m³ Air	2.7658		94.0	80-120			
Zinc	115	76.8	ng/m³ Air	82.975		139	80-120			
LCS (B4C1210-BS2)				Prepared: 03/12/24 Analyzed: 03/15/24						
Antimony	0.954	0.0386	ng/m³ Air	1.3829		69.0	80-120			SL
Arsenic	2.69	0.00937	ng/m³ Air	2.7658		97.3	80-120			
Barium	27.7	1.07	ng/m³ Air	27.658		100	80-120			
Beryllium	1.32	0.00320	ng/m³ Air	1.3829		95.4	80-120			
Cadmium	1.37	0.0741	ng/m³ Air	1.3829		99.4	80-120			
Chromium	14.9	2.21	ng/m³ Air	13.829		107	80-120			
Cobalt	1.34	0.0436	ng/m³ Air	1.3829		96.5	80-120			
Copper	29.6	2.63	ng/m³ Air	27.658		107	80-120			
Lead	13.5	0.214	ng/m³ Air	13.829		97.9	80-120			
Manganese	8.44	1.89	ng/m³ Air	8.2975		102	80-120			
Molybdenum	1.41	0.359	ng/m³ Air	1.3829		102	80-120			
Nickel	2.92	0.652	ng/m³ Air	2.7658		105	80-120			
Selenium	2.69	0.00896	ng/m³ Air	2.7658		97.3	80-120			
Thallium	0.137	5.89E-4	ng/m³ Air	0.13829		99.4	80-120			B, LB, QB-04
Vanadium	2.67	0.0529	ng/m³ Air	2.7658		96.5	80-120			
Zinc	117	76.8	ng/m³ Air	82.975		141	80-120			
Duplicate (B4C1210-DUP1)		**Source: 4031151-17**		Prepared: 03/12/24 Analyzed: 03/14/24						
Antimony	0.0345	0.0311	ng/m³ Air		0.0326			5.85	10	SL
Arsenic	0.147	0.00754	ng/m³ Air		0.150			1.71	10	
Barium	1.72	0.861	ng/m³ Air		1.63			5.43	10	
Beryllium	0.00736	0.00258	ng/m³ Air		0.00730			0.727	10	

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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4C1210 - ICP-MS Extraction										
Duplicate (B4C1210-DUP1) Continued			**Source: 4031151-17**		Prepared: 03/12/24 Analyzed: 03/14/24					
Cadmium	ND	0.0596	ng/m³ Air		ND				10	U
Chromium	1.84	1.78	ng/m³ Air		1.87			1.37	10	
Cobalt	0.139	0.0351	ng/m³ Air		0.130			6.32	10	
Copper	38.4	2.12	ng/m³ Air		36.0			6.47	10	
Lead	0.434	0.172	ng/m³ Air		0.416			4.21	10	
Manganese	3.82	1.52	ng/m³ Air		3.65			4.63	10	
Molybdenum	2.46	0.289	ng/m³ Air		2.35			4.84	10	
Nickel	0.685	0.525	ng/m³ Air		0.660			3.84	10	
Selenium	0.133	0.00721	ng/m³ Air		0.124			6.53	10	
Thallium	0.00129	4.74E-4	ng/m³ Air		0.00130			1.41	10	B, LB, QB-04
Vanadium	0.342	0.0426	ng/m³ Air		0.335			2.18	10	
Zinc	ND	61.8	ng/m³ Air		ND				10	U
Duplicate (B4C1210-DUP2)			**Source: 4031151-20**		Prepared: 03/12/24 Analyzed: 03/15/24					
Antimony	0.131	0.0305	ng/m³ Air		0.124			5.49	10	SL
Arsenic	0.500	0.00740	ng/m³ Air		0.481			3.90	10	
Barium	4.30	0.845	ng/m³ Air		4.13			3.95	10	
Beryllium	0.00986	0.00253	ng/m³ Air		0.0104			5.70	10	
Cadmium	ND	0.0585	ng/m³ Air		ND				10	U
Chromium	2.19	1.74	ng/m³ Air		2.15			1.66	10	
Cobalt	0.323	0.0344	ng/m³ Air		0.294			9.40	10	
Copper	39.2	2.08	ng/m³ Air		36.9			6.06	10	
Lead	0.971	0.169	ng/m³ Air		0.931			4.21	10	
Manganese	8.77	1.49	ng/m³ Air		8.22			6.54	10	
Molybdenum	2.00	0.283	ng/m³ Air		1.95			2.58	10	
Nickel	1.09	0.515	ng/m³ Air		1.03			5.92	10	
Selenium	0.166	0.00707	ng/m³ Air		0.155			6.58	10	
Thallium	8.67E-4	4.65E-4	ng/m³ Air		9.12E-4			5.01	10	B, LB, QB-04
Vanadium	1.02	0.0418	ng/m³ Air		0.973			4.26	10	
Zinc	ND	60.6	ng/m³ Air		ND				10	U
Duplicate (B4C1210-DUP3)			**Source: 4031151-06**		Prepared: 03/12/24 Analyzed: 03/15/24					
Antimony	0.0346	0.0319	ng/m³ Air		0.0342			1.20	10	SL
Arsenic	0.755	0.00773	ng/m³ Air		0.752			0.385	10	
Barium	2.48	0.883	ng/m³ Air		2.44			1.57	10	
Beryllium	0.00711	0.00264	ng/m³ Air		0.00695			2.34	10	
Cadmium	ND	0.0611	ng/m³ Air		ND				10	U
Chromium	2.25	1.82	ng/m³ Air		2.23			0.871	10	
Cobalt	0.298	0.0360	ng/m³ Air		0.294			1.39	10	
Copper	55.1	2.17	ng/m³ Air		54.8			0.445	10	

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: 03/21/24 15:20
SUBMITTED: 03/11/24
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 B4C1210 - ICP-MS Extraction										
Duplicate (B4C1210-DUP3) Continued		**Source: 4031151-06**		Prepared: 03/12/24 Analyzed: 03/15/24						
Lead	0.371	0.177	ng/m³ Air		0.366			1.39	10	
Manganese	7.46	1.56	ng/m³ Air		7.33			1.77	10	
Molybdenum	2.72	0.296	ng/m³ Air		2.67			2.06	10	
Nickel	0.855	0.538	ng/m³ Air		0.844			1.31	10	
Selenium	0.137	0.00739	ng/m³ Air		0.145			5.93	10	
Thallium	0.00112	4.86E-4	ng/m³ Air		0.00106			5.31	10	B, LB, QB-04
Vanadium	0.752	0.0437	ng/m³ Air		0.736			2.15	10	
Zinc	ND	63.4	ng/m³ Air		ND				10	U
Duplicate (B4C1210-DUP4)		**Source: 4031151-27**		Prepared: 03/12/24 Analyzed: 03/15/24						
Antimony	0.0526	0.0310	ng/m³ Air		0.0500			5.19	10	SL
Arsenic	0.207	0.00754	ng/m³ Air		0.206			0.670	10	
Barium	2.46	0.861	ng/m³ Air		2.37			3.56	10	
Beryllium	0.00690	0.00257	ng/m³ Air		0.00732			5.90	10	
Cadmium	ND	0.0596	ng/m³ Air		ND				10	U
Chromium	2.18	1.78	ng/m³ Air		2.09			4.47	10	
Cobalt	0.207	0.0351	ng/m³ Air		0.202			2.52	10	
Copper	19.1	2.12	ng/m³ Air		18.5			2.83	10	
Lead	0.563	0.172	ng/m³ Air		0.549			2.63	10	
Manganese	6.23	1.52	ng/m³ Air		6.05			3.03	10	
Molybdenum	1.28	0.289	ng/m³ Air		1.24			3.37	10	
Nickel	0.725	0.524	ng/m³ Air		0.705			2.83	10	
Selenium	0.145	0.00721	ng/m³ Air		0.147			1.01	10	
Thallium	0.00102	4.74E-4	ng/m³ Air		9.93E-4			2.57	10	B, LB, QB-04
Vanadium	0.560	0.0426	ng/m³ Air		0.543			3.16	10	
Zinc	ND	61.8	ng/m³ Air		ND				10	U, LJ, QX
Matrix Spike (B4C1210-MS1)		**Source: 4031151-17**		Prepared: 03/12/24 Analyzed: 03/14/24						
Antimony	0.447	0.0311	ng/m³ Air	1.1131	0.0326	37.3	80-120			SL
Arsenic	2.27	0.00754	ng/m³ Air	2.2263	0.150	95.1	80-120			
Barium	23.2	0.861	ng/m³ Air	22.263	1.63	96.9	80-120			
Beryllium	1.13	0.00258	ng/m³ Air	1.1131	0.00730	101	80-120			
Cadmium	1.09	0.0596	ng/m³ Air	1.1131	ND	98.1	80-120			
Chromium	13.4	1.78	ng/m³ Air	11.131	1.87	104	80-120			
Cobalt	1.20	0.0351	ng/m³ Air	1.1131	0.130	96.2	80-120			
Copper	59.3	2.12	ng/m³ Air	22.263	36.0	105	80-120			
Lead	11.2	0.172	ng/m³ Air	11.131	0.416	97.3	80-120			
Manganese	10.4	1.52	ng/m³ Air	6.6788	3.65	101	80-120			
Molybdenum	3.47	0.289	ng/m³ Air	1.1131	2.35	101	80-120			
Nickel	3.19	0.525	ng/m³ Air	2.2263	0.660	114	80-120			

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FILE #: 4205.00.003.001
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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 B4C1210 - ICP-MS Extraction										
Matrix Spike (B4C1210-MS1) Continued	**Source: 4031151-17**			Prepared: 03/12/24	Analyzed: 03/14/24					
Selenium	2.23	0.00721	ng/m³ Air	2.2263	0.124	94.5	80-120			
Thallium	0.109	4.74E-4	ng/m³ Air	0.11131	0.00130	97.0	80-120			B, LB, QB-04
Vanadium	2.40	0.0426	ng/m³ Air	2.2263	0.335	93.0	80-120			
Zinc	81.3	61.8	ng/m³ Air	66.788	ND	122	80-120			
Matrix Spike (B4C1210-MS2)	**Source: 4031151-20**			Prepared: 03/12/24	Analyzed: 03/15/24					
Antimony	0.576	0.0305	ng/m³ Air	1.0915	0.124	41.4	80-120			SL
Arsenic	2.58	0.00740	ng/m³ Air	2.1829	0.481	96.2	80-120			
Barium	25.8	0.845	ng/m³ Air	21.829	4.13	99.2	80-120			
Beryllium	1.10	0.00253	ng/m³ Air	1.0915	0.0104	99.8	80-120			
Cadmium	1.09	0.0585	ng/m³ Air	1.0915	ND	99.5	80-120			
Chromium	12.9	1.74	ng/m³ Air	10.915	2.15	98.5	80-120			
Cobalt	1.37	0.0344	ng/m³ Air	1.0915	0.294	98.3	80-120			
Copper	59.5	2.08	ng/m³ Air	21.829	36.9	104	80-120			
Lead	11.8	0.169	ng/m³ Air	10.915	0.931	99.3	80-120			
Manganese	15.1	1.49	ng/m³ Air	6.5488	8.22	105	80-120			
Molybdenum	3.03	0.283	ng/m³ Air	1.0915	1.95	99.0	80-120			
Nickel	3.22	0.515	ng/m³ Air	2.1829	1.03	100	80-120			
Selenium	2.26	0.00707	ng/m³ Air	2.1829	0.155	96.5	80-120			
Thallium	0.109	4.65E-4	ng/m³ Air	0.10915	9.12E-4	98.8	80-120			B, LB, QB-04
Vanadium	3.02	0.0418	ng/m³ Air	2.1829	0.973	94.0	80-120			
Zinc	92.7	60.6	ng/m³ Air	65.488	ND	142	80-120			
Matrix Spike Dup (B4C1210-MSD1)	**Source: 4031151-17**			Prepared: 03/12/24	Analyzed: 03/14/24					
Antimony	0.433	0.0311	ng/m³ Air	1.1131	0.0326	36.0	80-120	3.24	20	SL
Arsenic	2.22	0.00754	ng/m³ Air	2.2263	0.150	93.0	80-120	2.08	20	
Barium	22.8	0.861	ng/m³ Air	22.263	1.63	95.0	80-120	1.80	20	
Beryllium	1.15	0.00258	ng/m³ Air	1.1131	0.00730	102	80-120	1.46	20	
Cadmium	1.08	0.0596	ng/m³ Air	1.1131	ND	97.1	80-120	0.995	20	
Chromium	12.5	1.78	ng/m³ Air	11.131	1.87	95.8	80-120	7.04	20	
Cobalt	1.18	0.0351	ng/m³ Air	1.1131	0.130	94.2	80-120	1.85	20	
Copper	56.8	2.12	ng/m³ Air	22.263	36.0	93.5	80-120	4.39	20	
Lead	11.1	0.172	ng/m³ Air	11.131	0.416	96.2	80-120	1.06	20	
Manganese	10.1	1.52	ng/m³ Air	6.6788	3.65	96.1	80-120	3.12	20	
Molybdenum	3.32	0.289	ng/m³ Air	1.1131	2.35	87.1	80-120	4.58	20	
Nickel	2.73	0.525	ng/m³ Air	2.2263	0.660	92.9	80-120	15.7	20	
Selenium	2.21	0.00721	ng/m³ Air	2.2263	0.124	93.9	80-120	0.664	20	
Thallium	0.106	4.74E-4	ng/m³ Air	0.11131	0.00130	94.4	80-120	2.65	20	B, LB, QB-04
Vanadium	2.36	0.0426	ng/m³ Air	2.2263	0.335	91.1	80-120	1.74	20	
Zinc	77.8	61.8	ng/m³ Air	66.788	ND	117	80-120	4.29	20	

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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 B4C1210 - ICP-MS Extraction										
Matrix Spike Dup (B4C1210-MSD2)		**Source: 4031151-20**		Prepared: 03/12/24 Analyzed: 03/15/24						
Antimony	0.541	0.0305	ng/m³ Air	1.0915	0.124	38.2	80-120	6.34	20	SL
Arsenic	2.58	0.00740	ng/m³ Air	2.1829	0.481	96.0	80-120	0.163	20	
Barium	25.4	0.845	ng/m³ Air	21.829	4.13	97.6	80-120	1.37	20	
Beryllium	1.11	0.00253	ng/m³ Air	1.0915	0.0104	101	80-120	1.01	20	
Cadmium	1.08	0.0585	ng/m³ Air	1.0915	ND	99.1	80-120	0.384	20	
Chromium	12.9	1.74	ng/m³ Air	10.915	2.15	98.8	80-120	0.252	20	
Cobalt	1.36	0.0344	ng/m³ Air	1.0915	0.294	97.6	80-120	0.499	20	
Copper	60.0	2.08	ng/m³ Air	21.829	36.9	106	80-120	0.776	20	
Lead	11.7	0.169	ng/m³ Air	10.915	0.931	99.0	80-120	0.288	20	
Manganese	15.2	1.49	ng/m³ Air	6.5488	8.22	106	80-120	0.478	20	
Molybdenum	2.96	0.283	ng/m³ Air	1.0915	1.95	92.6	80-120	2.35	20	
Nickel	3.21	0.515	ng/m³ Air	2.1829	1.03	99.7	80-120	0.319	20	
Selenium	2.28	0.00707	ng/m³ Air	2.1829	0.155	97.4	80-120	0.890	20	
Thallium	0.109	4.65E-4	ng/m³ Air	0.10915	9.12E-4	99.0	80-120	0.246	20	B, LB, QB-04
Vanadium	3.04	0.0418	ng/m³ Air	2.1829	0.973	94.5	80-120	0.369	20	
Zinc	90.8	60.6	ng/m³ Air	65.488	ND	139	80-120	2.12	20	
Post Spike (B4C1210-PS1)		**Source: 4031151-17**		Prepared: 03/12/24 Analyzed: 03/14/24						
Antimony	0.252	0.0311	ng/m³ Air	0.22263	0.0326	98.4	75-125			SL
Arsenic	1.23	0.00754	ng/m³ Air	1.1131	0.150	97.4	75-125			
Barium	3.73	0.861	ng/m³ Air	2.2263	1.63	94.6	75-125			
Beryllium	0.233	0.00258	ng/m³ Air	0.22263	0.00730	102	75-125			
Cadmium	0.122	0.0596	ng/m³ Air	0.11131	ND	110	75-125			
Chromium	2.96	1.78	ng/m³ Air	1.1131	1.87	98.1	75-125			
Cobalt	0.348	0.0351	ng/m³ Air	0.22263	0.130	97.6	75-125			
Copper	48.0	2.12	ng/m³ Air	11.131	36.0	108	75-125			
Lead	22.3	0.172	ng/m³ Air	22.263	0.416	98.1	75-125			
Manganese	5.85	1.52	ng/m³ Air	2.2263	3.65	98.9	75-125			
Molybdenum	3.39	0.289	ng/m³ Air	1.1131	2.35	94.1	75-125			
Nickel	2.83	0.525	ng/m³ Air	2.2263	0.660	97.4	75-125			
Selenium	1.20	0.00721	ng/m³ Air	1.1131	0.124	96.7	75-125			
Thallium	0.0582	4.74E-4	ng/m³ Air	5.5657E-2	0.00130	102	75-125			B, LB, QB-04
Vanadium	1.37	0.0426	ng/m³ Air	1.1131	0.335	92.8	75-125			
Zinc	ND	61.8	ng/m³ Air	22.263	ND		75-125			U
Post Spike (B4C1210-PS2)		**Source: 4031151-20**		Prepared: 03/12/24 Analyzed: 03/15/24						
Antimony	0.346	0.0305	ng/m³ Air	0.21829	0.124	102	75-125			SL
Arsenic	1.56	0.00740	ng/m³ Air	1.0915	0.481	98.8	75-125			
Barium	6.21	0.845	ng/m³ Air	2.1829	4.13	95.2	75-125			
Beryllium	0.234	0.00253	ng/m³ Air	0.21829	0.0104	102	75-125			

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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 B4C1210 - ICP-MS Extraction										
Post Spike (B4C1210-PS2) Continued			**Source: 4031151-20**		Prepared: 03/12/24		Analyzed: 03/15/24			
Cadmium	0.124	0.0585	ng/m³ Air	0.10915	ND	114	75-125			
Chromium	3.21	1.74	ng/m³ Air	1.0915	2.15	97.4	75-125			
Cobalt	0.514	0.0344	ng/m³ Air	0.21829	0.294	101	75-125			
Copper	48.9	2.08	ng/m³ Air	10.915	36.9	110	75-125			
Lead	22.6	0.169	ng/m³ Air	21.829	0.931	99.3	75-125			
Manganese	10.5	1.49	ng/m³ Air	2.1829	8.22	104	75-125			
Molybdenum	3.01	0.283	ng/m³ Air	1.0915	1.95	96.9	75-125			
Nickel	3.21	0.515	ng/m³ Air	2.1829	1.03	99.8	75-125			
Selenium	1.24	0.00707	ng/m³ Air	1.0915	0.155	99.8	75-125			
Thallium	0.0569	4.65E-4	ng/m³ Air	5.4574E-2	9.12E-4	103	75-125			B, LB, QB-04
Vanadium	1.97	0.0418	ng/m³ Air	1.0915	0.973	91.4	75-125			
Zinc	ND	60.6	ng/m³ Air	21.829	ND		75-125			U
Dilution Check (B4C1210-SRL1)			**Source: 4031151-17**		Prepared: 03/12/24		Analyzed: 03/14/24			
Antimony	ND	0.155	ng/m³ Air		ND				10	U, SL
Arsenic	0.161	0.0377	ng/m³ Air		0.150			7.05	10	
Barium	ND	4.31	ng/m³ Air		ND				10	U
Beryllium	ND	0.0129	ng/m³ Air		ND				10	U
Cadmium	ND	0.298	ng/m³ Air		ND				10	U
Chromium	ND	8.89	ng/m³ Air		ND				10	U
Cobalt	ND	0.175	ng/m³ Air		ND				10	U
Copper	36.4	10.6	ng/m³ Air		36.0			1.16	10	
Lead	ND	0.861	ng/m³ Air		ND				10	U
Manganese	ND	7.61	ng/m³ Air		ND				10	U
Molybdenum	2.30	1.44	ng/m³ Air		2.35			1.81	10	
Nickel	ND	2.62	ng/m³ Air		ND				10	U
Selenium	0.122	0.0361	ng/m³ Air		0.124			1.86	10	
Thallium	0.00252	0.00237	ng/m³ Air		ND			63.4	10	B, LB, QB-04
Vanadium	0.324	0.213	ng/m³ Air		0.335			3.29	10	
Zinc	ND	309	ng/m³ Air		ND				10	U
Dilution Check (B4C1210-SRL2)			**Source: 4031151-20**		Prepared: 03/12/24		Analyzed: 03/15/24			
Antimony	ND	0.152	ng/m³ Air		ND				10	U, SL
Arsenic	0.496	0.0370	ng/m³ Air		0.481			3.18	10	
Barium	4.25	4.22	ng/m³ Air		ND			2.82	10	
Beryllium	ND	0.0126	ng/m³ Air		ND				10	U
Cadmium	ND	0.292	ng/m³ Air		ND				10	U
Chromium	ND	8.72	ng/m³ Air		ND				10	U
Cobalt	0.304	0.172	ng/m³ Air		0.294			3.36	10	
Copper	38.2	10.4	ng/m³ Air		36.9			3.56	10	

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4C1210 - ICP-MS Extraction										
Dilution Check (B4C1210-SRL2) Continue			**Source: 4031151-20**		Prepared: 03/12/24 Analyzed: 03/15/24					
Lead	0.915	0.845	ng/m³ Air		0.931			1.64	10	
Manganese	8.57	7.46	ng/m³ Air		8.22			4.24	10	
Molybdenum	2.04	1.42	ng/m³ Air		1.95			4.50	10	
Nickel	ND	2.57	ng/m³ Air		ND				10	U
Selenium	0.164	0.0354	ng/m³ Air		0.155			5.54	10	
Thallium	ND	0.00232	ng/m³ Air		ND				10	U, B, LB, QB-04
Vanadium	0.953	0.209	ng/m³ Air		0.973			2.00	10	
Zinc	ND	303	ng/m³ Air		ND				10	U, LJ, QX
Dilution Check (B4C1210-SRL3)			**Source: 4031151-19R**		Prepared: 03/12/24 Analyzed: 03/19/24					
Antimony	ND	0.160	ng/m³ Air		ND				10	U, LJ, QX
Arsenic	0.559	0.0388	ng/m³ Air		0.563			0.726	10	
Barium	ND	4.43	ng/m³ Air		ND				10	U
Beryllium	ND	0.0133	ng/m³ Air		ND				10	U, LJ, QX
Cadmium	ND	0.307	ng/m³ Air		ND				10	U
Chromium	131	9.15	ng/m³ Air		133			1.60	10	
Cobalt	1.62	0.181	ng/m³ Air		1.63			0.395	10	
Copper	95.4	10.9	ng/m³ Air		95.6			0.286	10	
Lead	0.907	0.886	ng/m³ Air		0.915			0.825	10	
Manganese	12.4	7.83	ng/m³ Air		12.5			0.499	10	
Molybdenum	4.71	1.49	ng/m³ Air		4.72			0.190	10	
Nickel	53.8	2.70	ng/m³ Air		54.4			1.20	10	
Selenium	0.160	0.0371	ng/m³ Air		0.143			11.8	10	LJ, QX
Thallium	ND	0.00244	ng/m³ Air		ND				10	U, QB-04
Vanadium	1.24	0.219	ng/m³ Air		1.29			4.30	10	
Zinc	ND	318	ng/m³ Air		ND				10	U

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 03/21/24 15:20
SUBMITTED: 03/11/24
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
LJ	Identification of analyte is acceptable; reported value is an estimate.
LB	Lab blank value above acceptable limit.
FB-01	Analyte exceeds Field Blank criteria.
D	This result obtained by dilution.
B	Analyte is found in the associated blank as well as in the sample (CLP B-flag).
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 3/26/2024 and Shanna Vasser 3/26/2024
Laboratory: Eastern Research Group – Morrisville, NC
Collection date(s): 2/29/2024 – 3/6/2024
Report No: 4301151

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

Discrepancies:

13. Field blank detections above the method detection limit were reported for arsenic in MFL-FB01-030224-HM and cobalt in MFL-FB01-030424-HM.

Notes:

2. The laboratory reported that MFL-AM03-030124-HM, MFL-AM04-030224-HM, MFL-AM04-030324-HM, MFL-AM03-030524-HM were nonhomogeneous.

7. MFL-AM01-030424-HM was analyzed at a two-fold dilution for chromium and nickel.

   Report was revised on March 21, 2024 to add the dilution check results. A five-fold dilution check was performed on MFL-AM03-030324-HM/MS/MSD, MFL-AM01-030424-HM, and MFL-AM02-030424-HM two-fold dilution for all analytes.

   Report was revised on March 25, 2024 to match the updated volumes on the revised CoC.

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

August 13, 2024

Ms. Chelsea Saber
Tetra Tech, Inc.
1777 Sentry Pkwy, Bldg 12
Blue Bell, PA 19422
Project Name: Lahaina fires

Dear Ms. Chelsea Saber,

This report contains the analytical results for the sample(s) received under chain(s) of custody by Eastern Research Group on 03/11/24 11:48 through 08/05/24 10:30.

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

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

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

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

Sincerely,

Julie Swift
Program Manager
julie.swift@erg.com

CERTIFICATE OF ANALYSIS

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

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

ANALYTICAL REPORT FOR SAMPLES

SampleName	LabNumber	Matrix	Sampled	Received
MFL-AM01-030424-HM	4031151-19	Air	03/04/24 23:59	03/11/24 11:48

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[redacted]

[redacted] Research Group

The results in this report apply only to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

[redacted]

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1777 Sentry Pkwy, Bldg 12
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Description: MFL-AM01-030424-HM
Matrix: Air
Lab ID: 4031151-19RE2
Sample Volume: 1964.168 m³
Filter ID:
Sampled: 03/04/24 23:59
Received: 03/11/24 11:48
Analysis Date: 08/07/24 11:57

Comments: Q9554734 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Nickel	**7440-02-0**	**67.8**	D	**1.08**

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AQS SITE CODE:
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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2408018 - B4H0605										
Calibration Blank (2408018-CCB1)				Prepared & Analyzed: 08/06/24						
Antimony	0.771		ng/l							
Arsenic	4.25		ng/l							
Barium	0.994		ng/l							
Beryllium	-0.738		ng/l							U
Cadmium	0.136		ng/l							
Chromium	1.46		ng/l							
Cobalt	-0.0108		ng/l							U
Copper	163		ng/l							
Lead	2.17		ng/l							
Manganese	2.24		ng/l							
Molybdenum	13.8		ng/l							
Nickel	1.00		ng/l							
Selenium	4.86		ng/l							
Thallium	0.774		ng/l							
Vanadium	-82.3		ng/l							U
Zinc	-173		ng/l							U
Calibration Blank (2408018-CCB2)				Prepared & Analyzed: 08/06/24						
Antimony	0.678		ng/l							
Arsenic	2.32		ng/l							
Barium	3.43		ng/l							
Beryllium	-0.479		ng/l							U
Cadmium	0.339		ng/l							
Chromium	3.01		ng/l							
Cobalt	0.656		ng/l							
Copper	104		ng/l							
Lead	3.06		ng/l							
Manganese	6.45		ng/l							
Molybdenum	-5.73		ng/l							U
Nickel	3.70		ng/l							
Selenium	15.2		ng/l							
Thallium	0.788		ng/l							
Vanadium	-81.5		ng/l							U
Zinc	-206		ng/l							U
Calibration Blank (2408018-CCB3)				Prepared: 08/06/24 Analyzed: 08/07/24						
Antimony	0.632		ng/l							
Arsenic	4.14		ng/l							
Barium	4.78		ng/l							
Beryllium	-0.779		ng/l							U

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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2408018 - B4H0605										
Calibration Blank (2408018-CCB3) Contin				Prepared: 08/06/24 Analyzed: 08/07/24						
Cadmium	0.0255		ng/l							
Chromium	3.86		ng/l							
Cobalt	0.429		ng/l							
Copper	86.3		ng/l							
Lead	3.12		ng/l							
Manganese	6.08		ng/l							
Molybdenum	-6.84		ng/l							U
Nickel	2.48		ng/l							
Selenium	6.77		ng/l							
Thallium	0.954		ng/l							
Vanadium	-87.9		ng/l							U
Zinc	-268		ng/l							U
Calibration Blank (2408018-CCB4)				Prepared: 08/06/24 Analyzed: 08/07/24						
Antimony	0.404		ng/l							
Arsenic	8.40		ng/l							
Barium	3.33		ng/l							
Beryllium	-1.25		ng/l							U
Cadmium	0.127		ng/l							
Chromium	2.95		ng/l							
Cobalt	0.468		ng/l							
Copper	57.4		ng/l							
Lead	2.31		ng/l							
Manganese	3.77		ng/l							
Molybdenum	-6.35		ng/l							U
Nickel	4.60		ng/l							
Selenium	19.2		ng/l							
Thallium	0.835		ng/l							
Vanadium	-88.6		ng/l							U
Zinc	-265		ng/l							U
Calibration Blank (2408018-CCB5)				Prepared: 08/06/24 Analyzed: 08/07/24						
Antimony	0.264		ng/l							
Arsenic	6.22		ng/l							
Barium	2.28		ng/l							
Beryllium	-1.23		ng/l							U
Cadmium	0.388		ng/l							
Chromium	4.18		ng/l							
Cobalt	0.381		ng/l							
Copper	73.1		ng/l							

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

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

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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2408018 - B4H0605										
Calibration Check (2408018-CCV3)				Prepared: 08/06/24 Analyzed: 08/07/24						
Antimony	20300		ng/l	20000		101	90-110			
Arsenic	20300		ng/l	20000		101	90-110			
Barium	204000		ng/l	200000		102	90-110			
Beryllium	5090		ng/l	5000.0		102	90-110			
Cadmium	20400		ng/l	20000		102	90-110			
Chromium	244000		ng/l	240000		101	90-110			
Cobalt	51000		ng/l	50000		102	90-110			
Copper	2.08E6		ng/l	2.0000E6		104	90-110			
Lead	201000		ng/l	200000		100	90-110			
Manganese	507000		ng/l	500000		101	90-110			
Molybdenum	51200		ng/l	50000		102	90-110			
Nickel	123000		ng/l	120000		103	90-110			
Selenium	20200		ng/l	20000		101	90-110			
Thallium	492		ng/l	500.00		98.3	90-110			
Vanadium	20200		ng/l	20000		101	90-110			
Zinc	514000		ng/l	500000		103	90-110			
Calibration Check (2408018-CCV4)				Prepared: 08/06/24 Analyzed: 08/07/24						
Antimony	20500		ng/l	20000		103	90-110			
Arsenic	20800		ng/l	20000		104	90-110			
Barium	209000		ng/l	200000		104	90-110			
Beryllium	5250		ng/l	5000.0		105	90-110			
Cadmium	20800		ng/l	20000		104	90-110			
Chromium	249000		ng/l	240000		104	90-110			
Cobalt	52400		ng/l	50000		105	90-110			
Copper	2.13E6		ng/l	2.0000E6		106	90-110			
Lead	204000		ng/l	200000		102	90-110			
Manganese	520000		ng/l	500000		104	90-110			
Molybdenum	52500		ng/l	50000		105	90-110			
Nickel	127000		ng/l	120000		105	90-110			
Selenium	20100		ng/l	20000		101	90-110			
Thallium	502		ng/l	500.00		100	90-110			
Vanadium	20700		ng/l	20000		103	90-110			
Zinc	520000		ng/l	500000		104	90-110			
Calibration Check (2408018-CCV5)				Prepared: 08/06/24 Analyzed: 08/07/24						
Antimony	19900		ng/l	20000		99.6	90-110			
Arsenic	20200		ng/l	20000		101	90-110			
Barium	203000		ng/l	200000		101	90-110			
Beryllium	5200		ng/l	5000.0		104	90-110			

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

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/13/24 09:56
SUBMITTED: 03/11/24 to 08/05/24
AQS SITE CODE:
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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2408018 - B4H0605										
Calibration Check (2408018-CCV7) Contin					Prepared: 08/06/24 Analyzed: 08/07/24					
Lead	206000		ng/l	200000		103	90-110			
Manganese	525000		ng/l	500000		105	90-110			
Molybdenum	54000		ng/l	50000		108	90-110			
Nickel	127000		ng/l	120000		106	90-110			
Selenium	20400		ng/l	20000		102	90-110			
Thallium	493		ng/l	500.00		98.6	90-110			
Vanadium	20800		ng/l	20000		104	90-110			
Zinc	524000		ng/l	500000		105	90-110			
High Cal Check (2408018-HCV1)					Prepared & Analyzed: 08/06/24					
Antimony	39900		ng/l	40000		99.8	95-105			
Arsenic	40100		ng/l	40000		100	95-105			
Barium	401000		ng/l	400000		100	95-105			
Beryllium	9960		ng/l	10000		99.6	95-105			
Cadmium	40000		ng/l	40000		99.9	95-105			
Chromium	483000		ng/l	480000		101	95-105			
Cobalt	101000		ng/l	100000		101	95-105			
Copper	4.00E6		ng/l	4.0000E6		100	95-105			
Lead	400000		ng/l	400000		100	95-105			
Manganese	1.01E6		ng/l	1.0000E6		101	95-105			
Molybdenum	100000		ng/l	100000		100	95-105			
Nickel	240000		ng/l	240000		100	95-105			
Selenium	40000		ng/l	40000		99.9	95-105			
Thallium	1000		ng/l	1000.0		100	95-105			
Vanadium	40300		ng/l	40000		101	95-105			
Zinc	998000		ng/l	1.0000E6		99.8	95-105			
Initial Cal Blank (2408018-ICB1)					Prepared & Analyzed: 08/06/24					
Antimony	4.43		ng/l							
Arsenic	-0.793		ng/l							U
Barium	6.15		ng/l							
Beryllium	-0.0591		ng/l							U
Cadmium	0.420		ng/l							
Chromium	8.62		ng/l							
Cobalt	1.43		ng/l							
Copper	282		ng/l							
Lead	23.7		ng/l							
Manganese	19.8		ng/l							
Molybdenum	26.7		ng/l							
Nickel	3.70		ng/l							

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

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2408018 - B4H0605										
Interference Check B (2408018-IFB1)				Prepared & Analyzed: 08/06/24						
Antimony	20200		ng/l	20000		101	80-120			
Arsenic	20500		ng/l	20000		103	80-120			
Barium	202000		ng/l	200000		101	80-120			
Beryllium	4920		ng/l	5000.0		98.4	80-120			
Cadmium	19800		ng/l	20000		98.8	80-120			
Chromium	232000		ng/l	240000		96.8	80-120			
Cobalt	50000		ng/l	50000		100	80-120			
Copper	1.93E6		ng/l	2.0000E6		96.5	80-120			
Lead	206000		ng/l	200000		103	80-120			
Manganese	499000		ng/l	500000		99.8	80-120			
Molybdenum	370000		ng/l	350000		106	80-120			
Nickel	117000		ng/l	120000		97.6	80-120			
Selenium	19000		ng/l	20000		95.1	80-120			
Thallium	520		ng/l	500.00		104	80-120			
Vanadium	18700		ng/l	20000		93.4	80-120			
Zinc	470000		ng/l	500000		93.9	80-120			
Batch B4H0605 - ICP-MS Extraction										
Blank (B4H0605-BLK1)				Prepared & Analyzed: 08/06/24						
Antimony	ND	0.0386	ng/m³ Air							SL, U
Arsenic	ND	0.00937	ng/m³ Air							U
Barium	ND	1.07	ng/m³ Air							U
Beryllium	ND	0.00320	ng/m³ Air							U
Cadmium	ND	0.0741	ng/m³ Air							U
Chromium	ND	2.21	ng/m³ Air							U
Cobalt	ND	0.0436	ng/m³ Air							U
Copper	ND	2.63	ng/m³ Air							U
Lead	ND	0.214	ng/m³ Air							U
Manganese	ND	1.89	ng/m³ Air							U
Molybdenum	ND	0.359	ng/m³ Air							U
Nickel	ND	0.652	ng/m³ Air							U
Selenium	ND	0.00896	ng/m³ Air							U
Thallium	ND	5.89E-4	ng/m³ Air							U
Vanadium	ND	0.0529	ng/m³ Air							U
Zinc	ND	76.8	ng/m³ Air							U
Blank (B4H0605-BLK2)				Prepared & Analyzed: 08/06/24						
Antimony	ND	0.0386	ng/m³ Air							SL, U
Arsenic	ND	0.00937	ng/m³ Air							U
Barium	ND	1.07	ng/m³ Air							U

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4H0605 - ICP-MS Extraction										
Blank (B4H0605-BLK2) Continued					Prepared & Analyzed: 08/06/24					
Beryllium	ND	0.00320	ng/m³ Air							U
Cadmium	ND	0.0741	ng/m³ Air							U
Chromium	ND	2.21	ng/m³ Air							U
Cobalt	ND	0.0436	ng/m³ Air							U
Copper	ND	2.63	ng/m³ Air							U
Lead	ND	0.214	ng/m³ Air							U
Manganese	ND	1.89	ng/m³ Air							U
Molybdenum	ND	0.359	ng/m³ Air							U
Nickel	ND	0.652	ng/m³ Air							U
Selenium	ND	0.00896	ng/m³ Air							U
Thallium	ND	5.89E-4	ng/m³ Air							U
Vanadium	ND	0.0529	ng/m³ Air							U
Zinc	ND	76.8	ng/m³ Air							U
LCS (B4H0605-BS1)					Prepared & Analyzed: 08/06/24					
Antimony	0.530	0.0386	ng/m³ Air	1.3829		38.4	80-120			SL
Arsenic	2.72	0.00937	ng/m³ Air	2.7658		98.4	80-120			
Barium	28.3	1.07	ng/m³ Air	27.658		102	80-120			
Beryllium	1.34	0.00320	ng/m³ Air	1.3829		96.7	80-120			
Cadmium	1.38	0.0741	ng/m³ Air	1.3829		99.6	80-120			
Chromium	15.7	2.21	ng/m³ Air	13.829		114	80-120			
Cobalt	1.35	0.0436	ng/m³ Air	1.3829		97.7	80-120			
Copper	29.0	2.63	ng/m³ Air	27.658		105	80-120			
Lead	13.9	0.214	ng/m³ Air	13.829		100	80-120			
Manganese	8.37	1.89	ng/m³ Air	8.2975		101	80-120			
Molybdenum	1.63	0.359	ng/m³ Air	1.3829		118	80-120			
Nickel	3.11	0.652	ng/m³ Air	2.7658		112	80-120			
Selenium	2.70	0.00896	ng/m³ Air	2.7658		97.6	80-120			
Thallium	0.135	5.89E-4	ng/m³ Air	0.13829		97.7	80-120			
Vanadium	2.74	0.0529	ng/m³ Air	2.7658		99.2	80-120			
Zinc	87.5	76.8	ng/m³ Air	82.975		105	80-120			
LCS (B4H0605-BS2)					Prepared & Analyzed: 08/06/24					
Antimony	0.526	0.0386	ng/m³ Air	1.3829		38.1	80-120			SL
Arsenic	2.76	0.00937	ng/m³ Air	2.7658		99.9	80-120			
Barium	29.2	1.07	ng/m³ Air	27.658		105	80-120			
Beryllium	1.33	0.00320	ng/m³ Air	1.3829		96.2	80-120			
Cadmium	1.41	0.0741	ng/m³ Air	1.3829		102	80-120			
Chromium	16.2	2.21	ng/m³ Air	13.829		117	80-120			
Cobalt	1.39	0.0436	ng/m³ Air	1.3829		101	80-120			

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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4H0605 - ICP-MS Extraction										
LCS (B4H0605-BS2) Continued					Prepared & Analyzed: 08/06/24					
Copper	29.8	2.63	ng/m³ Air	27.658		108	80-120			
Lead	14.1	0.214	ng/m³ Air	13.829		102	80-120			
Manganese	8.64	1.89	ng/m³ Air	8.2975		104	80-120			
Molybdenum	1.66	0.359	ng/m³ Air	1.3829		120	80-120			
Nickel	3.23	0.652	ng/m³ Air	2.7658		117	80-120			
Selenium	2.72	0.00896	ng/m³ Air	2.7658		98.4	80-120			
Thallium	0.137	5.89E-4	ng/m³ Air	0.13829		99.2	80-120			
Vanadium	2.83	0.0529	ng/m³ Air	2.7658		102	80-120			
Zinc	89.7	76.8	ng/m³ Air	82.975		108	80-120			
Duplicate (B4H0605-DUP1)					**Source: 4080550-02** Prepared & Analyzed: 08/06/24					
Antimony	0.169	0.0295	ng/m³ Air		0.172			1.43	10	SL
Arsenic	0.370	0.00717	ng/m³ Air		0.357			3.55	10	
Barium	4.61	0.819	ng/m³ Air		4.56			1.05	10	
Beryllium	0.0166	0.00245	ng/m³ Air		0.0158			4.58	10	
Cadmium	ND	0.0567	ng/m³ Air		ND				10	U
Chromium	2.68	1.69	ng/m³ Air		2.53			5.56	10	
Cobalt	0.485	0.0334	ng/m³ Air		0.476			1.93	10	
Copper	35.3	2.01	ng/m³ Air		34.5			2.29	10	
Lead	1.20	0.164	ng/m³ Air		1.12			6.47	10	
Manganese	15.1	1.45	ng/m³ Air		14.9			1.61	10	
Molybdenum	1.89	0.275	ng/m³ Air		1.94			2.49	10	
Nickel	1.43	0.499	ng/m³ Air		1.36			4.89	10	
Selenium	0.350	0.00685	ng/m³ Air		0.340			2.96	10	
Thallium	0.00240	4.51E-4	ng/m³ Air		0.00253			5.36	10	
Vanadium	1.75	0.0405	ng/m³ Air		1.74			0.407	10	
Zinc	ND	58.7	ng/m³ Air		ND				10	U
Duplicate (B4H0605-DUP2)					**Source: 4080550-22** Prepared & Analyzed: 08/06/24					
Antimony	0.0923	0.0329	ng/m³ Air		0.0796			14.8	10	SL
Arsenic	0.443	0.00799	ng/m³ Air		0.432			2.59	10	
Barium	3.27	0.913	ng/m³ Air		3.36			2.77	10	
Beryllium	0.00973	0.00273	ng/m³ Air		0.0103			6.12	10	
Cadmium	ND	0.0632	ng/m³ Air		ND				10	U
Chromium	2.51	1.88	ng/m³ Air		2.44			3.19	10	
Cobalt	0.357	0.0372	ng/m³ Air		0.350			2.02	10	
Copper	39.6	2.24	ng/m³ Air		37.7			4.88	10	
Lead	0.859	0.183	ng/m³ Air		0.946			9.65	10	
Manganese	11.5	1.61	ng/m³ Air		11.2			2.56	10	
Molybdenum	2.22	0.306	ng/m³ Air		2.11			5.41	10	

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4H0605 - ICP-MS Extraction										
Duplicate (B4H0605-DUP2) Continued			**Source: 4080550-22**		Prepared & Analyzed: 08/06/24					
Nickel	1.03	0.556	ng/m³ Air		1.06			2.76	10	
Selenium	0.147	0.00764	ng/m³ Air		0.143			2.70	10	
Thallium	6.66E-4	5.02E-4	ng/m³ Air		7.10E-4			6.37	10	
Vanadium	1.01	0.0451	ng/m³ Air		1.01			0.868	10	
Zinc	ND	65.5	ng/m³ Air		ND				10	U
Duplicate (B4H0605-DUP3)			**Source: 4080550-14**		Prepared: 08/06/24 Analyzed: 08/07/24					
Antimony	0.0577	0.0325	ng/m³ Air		0.0586			1.61	10	SL
Arsenic	0.388	0.00788	ng/m³ Air		0.380			2.09	10	
Barium	3.25	0.900	ng/m³ Air		3.23			0.567	10	
Beryllium	0.0104	0.00269	ng/m³ Air		0.00996			4.40	10	
Cadmium	ND	0.0623	ng/m³ Air		ND				10	U
Chromium	2.47	1.86	ng/m³ Air		2.47			0.194	10	
Cobalt	0.336	0.0367	ng/m³ Air		0.336			0.0921	10	
Copper	194	2.21	ng/m³ Air		194			0.155	10	
Lead	0.264	0.180	ng/m³ Air		0.266			0.704	10	
Manganese	10.0	1.59	ng/m³ Air		10.0			0.385	10	
Molybdenum	8.97	0.302	ng/m³ Air		9.01			0.510	10	
Nickel	1.12	0.549	ng/m³ Air		1.12			0.248	10	
Selenium	0.141	0.00754	ng/m³ Air		0.142			0.412	10	
Thallium	6.57E-4	4.96E-4	ng/m³ Air		6.67E-4			1.65	10	
Vanadium	1.25	0.0445	ng/m³ Air		1.25			0.00673	10	
Zinc	ND	64.6	ng/m³ Air		ND				10	U
Duplicate (B4H0605-DUP4)			**Source: 4080550-26**		Prepared: 08/06/24 Analyzed: 08/07/24					
Antimony	0.0698	0.0315	ng/m³ Air		0.0694			0.601	10	SL
Arsenic	0.454	0.00766	ng/m³ Air		0.448			1.25	10	
Barium	3.77	0.874	ng/m³ Air		3.69			2.07	10	
Beryllium	0.0171	0.00261	ng/m³ Air		0.0168			1.94	10	
Cadmium	ND	0.0605	ng/m³ Air		ND				10	U
Chromium	3.08	1.81	ng/m³ Air		3.05			0.838	10	
Cobalt	0.482	0.0356	ng/m³ Air		0.482			0.0429	10	
Copper	39.0	2.15	ng/m³ Air		38.8			0.599	10	
Lead	0.765	0.175	ng/m³ Air		0.759			0.755	10	
Manganese	16.0	1.54	ng/m³ Air		16.0			0.123	10	
Molybdenum	1.89	0.293	ng/m³ Air		1.88			0.445	10	
Nickel	1.27	0.533	ng/m³ Air		1.26			0.588	10	
Selenium	0.151	0.00732	ng/m³ Air		0.146			3.13	10	
Thallium	8.27E-4	4.81E-4	ng/m³ Air		8.14E-4			1.59	10	
Vanadium	1.26	0.0432	ng/m³ Air		1.26			0.186	10	

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AQS SITE CODE:
SITE CODE: Lahaina fires

Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4H0605 - ICP-MS Extraction										
Duplicate (B4H0605-DUP4) Continued		**Source: 4080550-26**		Prepared: 08/06/24 Analyzed: 08/07/24						
Zinc	ND	62.7	ng/m³ Air		ND				10	U
Matrix Spike (B4H0605-MS1)		**Source: 4080550-02**		Prepared & Analyzed: 08/06/24						
Antimony	0.698	0.0295	ng/m³ Air	1.0579	0.172	49.8	80-120			SL
Arsenic	2.40	0.00717	ng/m³ Air	2.1158	0.357	96.5	80-120			
Barium	25.8	0.819	ng/m³ Air	21.158	4.56	100	80-120			
Beryllium	1.05	0.00245	ng/m³ Air	1.0579	0.0158	98.0	80-120			
Cadmium	1.04	0.0567	ng/m³ Air	1.0579	ND	98.1	80-120			
Chromium	12.8	1.69	ng/m³ Air	10.579	2.53	97.2	80-120			
Cobalt	1.47	0.0334	ng/m³ Air	1.0579	0.476	94.4	80-120			
Copper	56.7	2.01	ng/m³ Air	21.158	34.5	105	80-120			
Lead	11.8	0.164	ng/m³ Air	10.579	1.12	101	80-120			
Manganese	21.1	1.45	ng/m³ Air	6.3473	14.9	98.1	80-120			
Molybdenum	2.97	0.275	ng/m³ Air	1.0579	1.94	97.4	80-120			
Nickel	3.42	0.499	ng/m³ Air	2.1158	1.36	97.1	80-120			
Selenium	2.34	0.00685	ng/m³ Air	2.1158	0.340	94.7	80-120			
Thallium	0.104	4.51E-4	ng/m³ Air	0.10579	0.00253	96.1	80-120			
Vanadium	3.73	0.0405	ng/m³ Air	2.1158	1.74	94.2	80-120			
Zinc	76.6	58.7	ng/m³ Air	63.473	ND	121	80-120			
Matrix Spike (B4H0605-MS2)		**Source: 4080550-22**		Prepared & Analyzed: 08/06/24						
Antimony	0.760	0.0329	ng/m³ Air	1.1795	0.0796	57.7	80-120			SL
Arsenic	2.72	0.00799	ng/m³ Air	2.3589	0.432	97.1	80-120			
Barium	26.8	0.913	ng/m³ Air	23.589	3.36	99.6	80-120			
Beryllium	1.16	0.00273	ng/m³ Air	1.1795	0.0103	97.4	80-120			
Cadmium	1.18	0.0632	ng/m³ Air	1.1795	ND	100	80-120			
Chromium	14.4	1.88	ng/m³ Air	11.795	2.44	101	80-120			
Cobalt	1.47	0.0372	ng/m³ Air	1.1795	0.350	94.9	80-120			
Copper	61.9	2.24	ng/m³ Air	23.589	37.7	103	80-120			
Lead	12.9	0.183	ng/m³ Air	11.795	0.946	101	80-120			
Manganese	18.1	1.61	ng/m³ Air	7.0768	11.2	97.1	80-120			
Molybdenum	3.25	0.306	ng/m³ Air	1.1795	2.11	97.3	80-120			
Nickel	3.37	0.556	ng/m³ Air	2.3589	1.06	98.0	80-120			
Selenium	2.42	0.00764	ng/m³ Air	2.3589	0.143	96.3	80-120			
Thallium	0.116	5.02E-4	ng/m³ Air	0.11795	7.10E-4	98.0	80-120			
Vanadium	3.31	0.0451	ng/m³ Air	2.3589	1.01	97.6	80-120			
Zinc	83.6	65.5	ng/m³ Air	70.768	ND	118	80-120			
Matrix Spike Dup (B4H0605-MSD1)		**Source: 4080550-02**		Prepared & Analyzed: 08/06/24						
Antimony	0.702	0.0295	ng/m³ Air	1.0579	0.172	50.1	80-120	0.512	20	SL
Arsenic	2.40	0.00717	ng/m³ Air	2.1158	0.357	96.3	80-120	0.194	20	

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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4H0605 - ICP-MS Extraction										
Matrix Spike Dup (B4H0605-MSD1) Conti			**Source: 4080550-02**		Prepared & Analyzed: 08/06/24					
Barium	25.5	0.819	ng/m³ Air	21.158	4.56	99.0	80-120	0.992	20	
Beryllium	1.06	0.00245	ng/m³ Air	1.0579	0.0158	98.4	80-120	0.349	20	
Cadmium	1.04	0.0567	ng/m³ Air	1.0579	ND	98.2	80-120	0.0365	20	
Chromium	12.9	1.69	ng/m³ Air	10.579	2.53	97.9	80-120	0.545	20	
Cobalt	1.47	0.0334	ng/m³ Air	1.0579	0.476	93.6	80-120	0.603	20	
Copper	56.2	2.01	ng/m³ Air	21.158	34.5	103	80-120	0.900	20	
Lead	11.8	0.164	ng/m³ Air	10.579	1.12	100	80-120	0.215	20	
Manganese	20.2	1.45	ng/m³ Air	6.3473	14.9	83.2	80-120	4.57	20	
Molybdenum	2.91	0.275	ng/m³ Air	1.0579	1.94	91.5	80-120	2.11	20	
Nickel	3.42	0.499	ng/m³ Air	2.1158	1.36	97.3	80-120	0.0939	20	
Selenium	2.34	0.00685	ng/m³ Air	2.1158	0.340	94.6	80-120	0.157	20	
Thallium	0.105	4.51E-4	ng/m³ Air	0.10579	0.00253	96.7	80-120	0.610	20	
Vanadium	3.68	0.0405	ng/m³ Air	2.1158	1.74	91.7	80-120	1.42	20	
Zinc	75.9	58.7	ng/m³ Air	63.473	ND	120	80-120	0.952	20	
Matrix Spike Dup (B4H0605-MSD2)			**Source: 4080550-22**		Prepared & Analyzed: 08/06/24					
Antimony	0.681	0.0329	ng/m³ Air	1.1795	0.0796	51.0	80-120	11.0	20	SL
Arsenic	2.71	0.00799	ng/m³ Air	2.3589	0.432	96.6	80-120	0.506	20	
Barium	26.7	0.913	ng/m³ Air	23.589	3.36	98.8	80-120	0.711	20	
Beryllium	1.15	0.00273	ng/m³ Air	1.1795	0.0103	97.0	80-120	0.398	20	
Cadmium	1.17	0.0632	ng/m³ Air	1.1795	ND	99.1	80-120	0.866	20	
Chromium	14.3	1.88	ng/m³ Air	11.795	2.44	101	80-120	0.281	20	
Cobalt	1.50	0.0372	ng/m³ Air	1.1795	0.350	97.4	80-120	2.00	20	
Copper	62.9	2.24	ng/m³ Air	23.589	37.7	107	80-120	1.57	20	
Lead	13.0	0.183	ng/m³ Air	11.795	0.946	102	80-120	0.965	20	
Manganese	18.5	1.61	ng/m³ Air	7.0768	11.2	102	80-120	2.09	20	
Molybdenum	3.23	0.306	ng/m³ Air	1.1795	2.11	95.5	80-120	0.678	20	
Nickel	3.47	0.556	ng/m³ Air	2.3589	1.06	102	80-120	2.78	20	
Selenium	2.39	0.00764	ng/m³ Air	2.3589	0.143	95.2	80-120	1.14	20	
Thallium	0.115	5.02E-4	ng/m³ Air	0.11795	7.10E-4	96.7	80-120	1.29	20	
Vanadium	3.31	0.0451	ng/m³ Air	2.3589	1.01	97.9	80-120	0.179	20	
Zinc	82.1	65.5	ng/m³ Air	70.768	ND	116	80-120	1.82	20	
Post Spike (B4H0605-PS1)			**Source: 4080550-02**		Prepared & Analyzed: 08/06/24					
Antimony	0.386	0.0295	ng/m³ Air	0.21158	0.172	101	75-125			SL
Arsenic	1.39	0.00717	ng/m³ Air	1.0579	0.357	97.2	75-125			
Barium	6.74	0.819	ng/m³ Air	2.1158	4.56	103	75-125			
Beryllium	0.224	0.00245	ng/m³ Air	0.21158	0.0158	98.6	75-125			
Cadmium	0.123	0.0567	ng/m³ Air	0.10579	ND	117	75-125			
Chromium	3.64	1.69	ng/m³ Air	1.0579	2.53	105	75-125			

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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4H0605 - ICP-MS Extraction										
Post Spike (B4H0605-PS1) Continued			**Source: 4080550-02**		Prepared & Analyzed: 08/06/24					
Cobalt	0.700	0.0334	ng/m³ Air	0.21158	0.476	106	75-125			
Copper	46.8	2.01	ng/m³ Air	10.579	34.5	117	75-125			
Lead	22.9	0.164	ng/m³ Air	21.158	1.12	103	75-125			
Manganese	17.4	1.45	ng/m³ Air	2.1158	14.9	117	75-125			
Molybdenum	3.03	0.275	ng/m³ Air	1.0579	1.94	103	75-125			
Nickel	3.56	0.499	ng/m³ Air	2.1158	1.36	104	75-125			
Selenium	1.38	0.00685	ng/m³ Air	1.0579	0.340	98.6	75-125			
Thallium	0.0550	4.51E-4	ng/m³ Air	5.2894E-2	0.00253	99.2	75-125			
Vanadium	2.79	0.0405	ng/m³ Air	1.0579	1.74	99.1	75-125			
Zinc	ND	58.7	ng/m³ Air	21.158	ND		75-125			U
Post Spike (B4H0605-PS2)			**Source: 4080550-22**		Prepared & Analyzed: 08/06/24					
Antimony	0.307	0.0329	ng/m³ Air	0.23589	0.0796	96.4	75-125			SL
Arsenic	1.55	0.00799	ng/m³ Air	1.1795	0.432	94.4	75-125			
Barium	5.66	0.913	ng/m³ Air	2.3589	3.36	97.5	75-125			
Beryllium	0.240	0.00273	ng/m³ Air	0.23589	0.0103	97.2	75-125			
Cadmium	0.128	0.0632	ng/m³ Air	0.11795	ND	109	75-125			
Chromium	3.58	1.88	ng/m³ Air	1.1795	2.44	97.2	75-125			
Cobalt	0.575	0.0372	ng/m³ Air	0.23589	0.350	95.2	75-125			
Copper	50.1	2.24	ng/m³ Air	11.795	37.7	105	75-125			
Lead	24.6	0.183	ng/m³ Air	23.589	0.946	100	75-125			
Manganese	13.5	1.61	ng/m³ Air	2.3589	11.2	95.2	75-125			
Molybdenum	3.25	0.306	ng/m³ Air	1.1795	2.11	97.4	75-125			
Nickel	3.42	0.556	ng/m³ Air	2.3589	1.06	100	75-125			
Selenium	1.29	0.00764	ng/m³ Air	1.1795	0.143	97.0	75-125			
Thallium	0.0583	5.02E-4	ng/m³ Air	5.8974E-2	7.10E-4	97.6	75-125			
Vanadium	2.14	0.0451	ng/m³ Air	1.1795	1.01	96.2	75-125			
Zinc	ND	65.5	ng/m³ Air	23.589	ND		75-125			U
Dilution Check (B4H0605-SRL1)			**Source: 4080550-02**		Prepared & Analyzed: 08/06/24					
Antimony	0.170	0.148	ng/m³ Air		0.172			0.904	10	SL
Arsenic	0.366	0.0358	ng/m³ Air		0.357			2.28	10	
Barium	4.62	4.09	ng/m³ Air		4.56			1.22	10	
Beryllium	0.0168	0.0122	ng/m³ Air		0.0158			5.87	10	
Cadmium	ND	0.283	ng/m³ Air		ND				10	U
Chromium	ND	8.45	ng/m³ Air		ND				10	U
Cobalt	0.486	0.167	ng/m³ Air		0.476			2.04	10	
Copper	36.0	10.1	ng/m³ Air		34.5			4.35	10	
Lead	1.10	0.819	ng/m³ Air		1.12			1.83	10	
Manganese	15.6	7.23	ng/m³ Air		14.9			4.40	10	

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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4H0605 - ICP-MS Extraction										
Dilution Check (B4H0605-SRL1) Continue				**Source: 4080550-02**		Prepared & Analyzed: 08/06/24				
Molybdenum	1.97	1.37	ng/m³ Air		1.94			1.22	10	
Nickel	ND	2.49	ng/m³ Air		ND				10	U
Selenium	0.342	0.0343	ng/m³ Air		0.340			0.506	10	
Thallium	0.00391	0.00225	ng/m³ Air		0.00253			43.0	10	
Vanadium	1.71	0.202	ng/m³ Air		1.74			1.84	10	
Zinc	ND	294	ng/m³ Air		ND				10	U
Dilution Check (B4H0605-SRL2)				**Source: 4080550-22**		Prepared & Analyzed: 08/06/24				
Antimony	ND	0.165	ng/m³ Air		ND				10	SL, U
Arsenic	0.446	0.0400	ng/m³ Air		0.432			3.18	10	
Barium	ND	4.56	ng/m³ Air		ND				10	U
Beryllium	ND	0.0136	ng/m³ Air		ND				10	U
Cadmium	ND	0.316	ng/m³ Air		ND				10	U
Chromium	ND	9.42	ng/m³ Air		ND				10	U
Cobalt	0.357	0.186	ng/m³ Air		0.350			1.83	10	
Copper	38.1	11.2	ng/m³ Air		37.7			1.05	10	
Lead	0.943	0.913	ng/m³ Air		0.946			0.377	10	
Manganese	11.3	8.06	ng/m³ Air		11.2			0.804	10	
Molybdenum	2.11	1.53	ng/m³ Air		2.11			0.273	10	
Nickel	ND	2.78	ng/m³ Air		ND				10	U
Selenium	0.141	0.0382	ng/m³ Air		0.143			1.45	10	
Thallium	ND	0.00251	ng/m³ Air		ND				10	U
Vanadium	0.982	0.226	ng/m³ Air		1.01			2.35	10	
Zinc	ND	328	ng/m³ Air		ND				10	U

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Notes and Definitions

U	Under Detection Limit
SL	The spike recovery was outside acceptance limits. Reported value may be biased low.
FB-01	Analyte exceeds Field Blank criteria.
D	This result obtained by dilution.
ND	Analyte NOT DETECTED
NR	Not Reported
MDL	Method Detection Limit
RPD	Relative Percent Difference

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

Stage 1 Data Verification Checklist – Metals

HDOH CAB – Ambient Community Air Sampling – Lahaina

Task Order No. 23141

Reviewed by:
Kierra Johnson 3/26/2024 and Shanna Vasser 3/26/2024
Laboratory: Eastern Research Group – Morrisville, NC
Collection date(s): 2/29/2024 – 3/6/2024
Report No: 4301151

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

Discrepancies:

13. Field blank detections above the method detection limit were reported for arsenic in MFL-FB01-030224-HM and cobalt in MFL-FB01-030424-HM.

Notes:

2. The laboratory reported that MFL-AM03-030124-HM, MFL-AM04-030224-HM, MFL-AM04-030324-HM, MFL-AM03-030524-HM were nonhomogeneous.

7. MFL-AM01-030424-HM was analyzed at a two-fold dilution for chromium and nickel.

   Report was revised on March 21, 2024 to add the dilution check results. A five-fold dilution check was performed on MFL-AM03-030324-HM/MS/MSD, MFL-AM01-030424-HM, and MFL-AM02-030424-HM two-fold dilution for all analytes.

   Report was revised on March 25, 2024 to match the updated volumes on the revised CoC.