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

Kula, Maui

12/7/2023-12/13/2023

As a result of ongoing debris removal operations in response to the Maui Wildfires, a community air monitoring and sampling plan (CAMSP, 2023) has been developed and sampling is being performed at three community locations across the area of Kula.

This approach includes ambient community air monitoring and sampling to monitor conditions and ensure debris removal activities, taking place under the U.S. Army Corps of Engineers (USACE), does not significantly impact air quality in the area of Kula. Data collected is made available to HDOH via online shared site and this weekly report. This approach to air monitoring and sampling will continue until debris removal activities are complete or until HDOH CAB advises otherwise.

Air quality monitoring for particulate matter was collected at all three community locations over a 24-hour period each day in accordance with the CAMSP. Additionally, daily air samples were collected at all community locations for asbestos and heavy metals. Summary analytical data is presented in **Tables 1 and 2**. **Figure 1** depicts the community air monitoring and sampling locations. **Appendix 1** provides detailed analytical results for all community locations where air sampling was performed. Analytical results were compared to site-specific screening levels for particulate matter, asbestos, and heavy metals as published in the CAMSP (Tetra Tech 2023; see Table 2).

Results for Community Locations:
Ambient particulate air monitoring was performed to assess for the presence and concentrations of airborne particulates with a particle size aerodynamic diameter of 2.5 micrometers (µm) and less ($PM_{2.5}$), as well as 10 micrometers (µm) and less (PM_{10}). This particle size diameter is recognized for health evaluations and is identified as "$PM_{2.5}$" and "PM_{10}". The particle size diameters of 2.5 micrometers (µm) and 10 micrometers (µm) are small enough to be inhaled into a person's lungs. Monitoring for $PM_{2.5}$ and PM_{10} was conducted 7 days a week at each of the following locations: Top Property (AM-01) (December 7 – 13), Middle Property (AM-02) 2 (December 7 – 13), Lower Property (AM-03) (December 7 – 13).

The results of PM_{10} monitoring found that screening levels were not exceeded during the duration of this reporting period.

The results of $PM_{2.5}$ monitoring found that screening levels were exceeded at the Top Property air monitoring station on December 7, 9, 12 and 13. The property owner was also observed spreading woodchips and clearing brush on December 7 and 13. The exceedances on December 9 and 12 were confirmed to not be related to USACE crew activities, as the exceedances took place at times when the USACE crews were not present at site. No observations were made by field teams pointing to the source of the exceedances on Dec 9 and 12. The property owner and other local activities could not be confirmed during those time periods.

None of these exceedances of particulate screening levels are likely to be attributable to USACE debris removal operations.

There were twenty-one samples collected for asbestos fibers at community monitoring locations throughout this time frame. Of the twenty-one samples collected, five were voided. Five were voided due to greater than 10% discrepancy between the pre and post calibration values, as stated in the asbestos sampling SOP. The voided samples were from the Middle Property (AM-02) on 12/10, and Lower Property (AM-03) on 12/7, 12/8, 12/9, and 12/12. No asbestos sample returned a value above the laboratory's

detection limit, indicating fibers were not present in air sampled. All asbestos results were below the public health screening level of 0.0034 fibers/cc (as well as the laboratory's detection limits), and therefore not a concern.

Some extremely low levels of heavy metals were detected in ambient air samples at community locations. Although detected, all concentrations were below the public health screening levels for heavy metals. Details for particulates, heavy metal and asbestos sampling data for community locations are found in Attachment 1. The metals lab report 3121111 contains samples outside the range of this report and have been redacted to only show the results pertinent to this reporting period.

Attachments:

Analytical Sampling Results and Particulate Monitoring Results

Air Monitoring and Sampling Locations

Appendix:

Analytical Reports

Attachments

Table 1: HDOH CAB Ambient Community Monitoring and Sampling
Analytical Sampling Results
Maui Wildfire, Kula
12/7/2023-12/13/2023

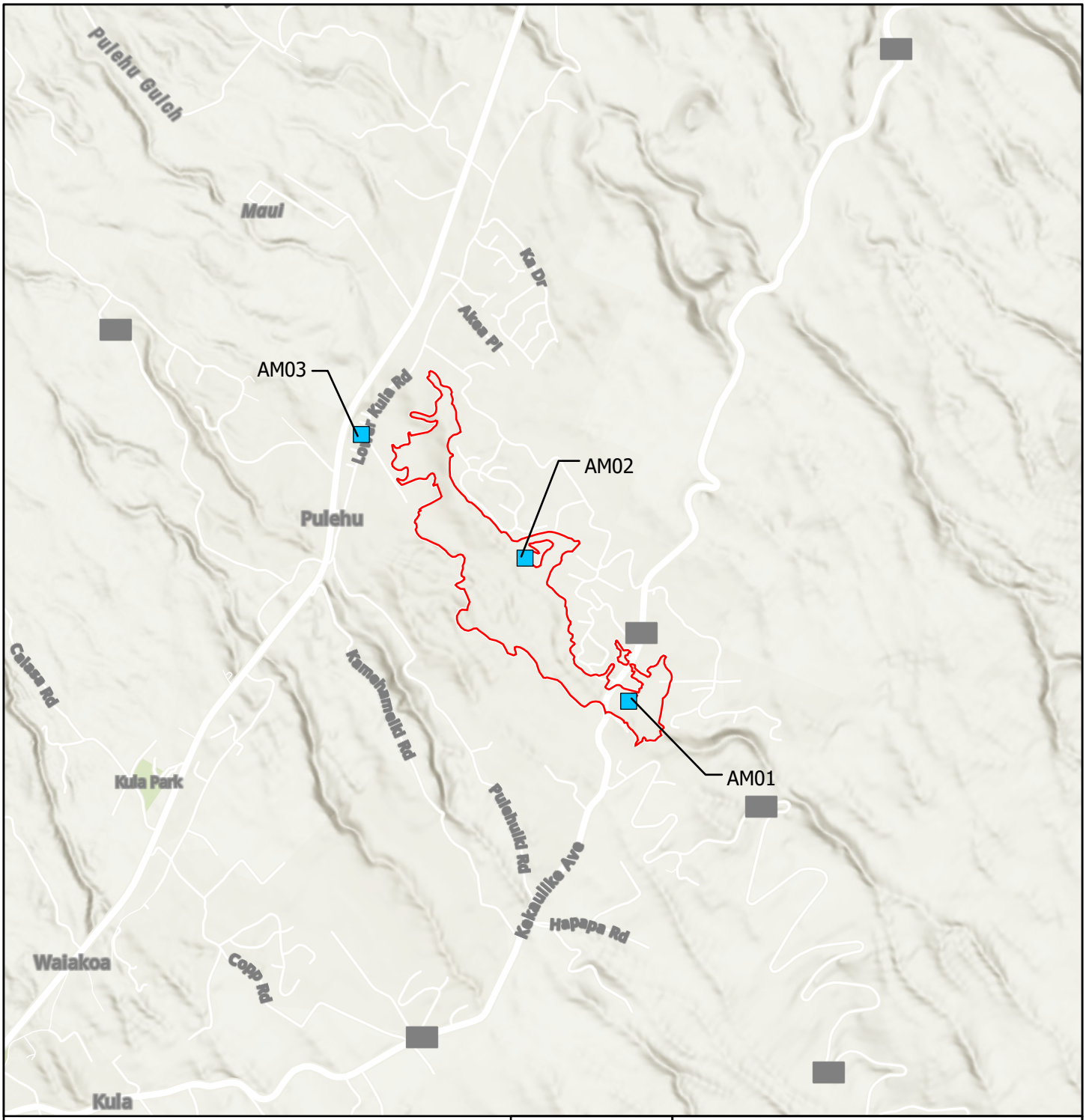
Analyte		Asbestos		Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Manganese	Molybdenum	Nickel	Selenium	Thallium	Vanadium	Zinc
Units		f/cc	Y/N	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3
Screening Level	Location / ID	0.0034 [1]	Confirmed Asbestos [2]	1.4	0.18	2.4	0.1	0.048	24	0.029	480	1.5	0.24	9.6	0.048	96	48	0.48	2400
12/7/2023	Top Property (AM-01)	<0.00050	N	0.0000502	0.00016	0.00661	0.0000252	ND	0.00229	0.000391	0.0265	0.000804	0.0234	0.000845	0.000996	0.000239	0.00000154	0.00247	ND
	Middle Property (AM-02)	<0.00047	N	0.0000469	0.000121	0.00385	0.0000109	ND	0.00185	0.000187	0.0352	0.000871	0.00912	0.000939	0.000737	0.000186	0.000000703	0.00126	ND
	Lower Property (AM-03)	NA	NA	0.0000784	0.000147	0.00734	0.0000211	ND	0.00234	0.00029	0.0629	0.000618	0.0166	0.00165	0.000936	0.000207	0.00000126	0.00179	ND
12/8/2023	Top Property (AM-01)	<0.00048	N	0.000044	0.000119	0.0054	0.0000175	ND	0.00206	0.00026	0.0148	0.000454	0.016	0.00074	0.000792	0.000193	0.00000114	0.00153	ND
	Middle Property (AM-02)	<0.00118	N	0.0000722	0.000194	0.00541	0.0000131	ND	0.00183	0.000189	0.0155	0.000337	0.0106	0.00072	0.000878	0.000157	0.000000926	0.00118	ND
	Lower Property (AM-03)	NA	NA	0.0000839	0.000101	0.00762	0.0000182	ND	0.0021	0.000237	0.0348	0.000343	0.0151	0.00105	ND	0.000162	0.00000143	0.00136	ND
12/9/2003	Top Property (AM-01)	<0.00092	N	0.0000404	0.000204	0.00501	0.0000154	ND	0.00202	0.000238	0.0168	0.000429	0.0143	0.000763	0.000631	0.000146	0.000000993	0.0014	ND
	Middle Property (AM-02)	<0.00089	N	0.0000532	0.000385	0.00635	0.0000202	ND	0.00207	0.000288	0.0159	0.00044	0.0166	0.000721	0.000649	0.000146	0.00000117	0.00168	ND
	Lower Property (AM-03)	NA	NA	0.000089	0.000239	0.0112	0.0000343	ND	0.00288	0.000429	0.0345	0.000686	0.0281	0.000978	0.000803	0.000178	0.00000192	0.00214	ND
12/10/2023	Top Property (AM-01)	<0.00050	N	0.0000546	0.000143	0.00517	0.0000186	ND	0.00197	0.000293	0.0227	0.000697	0.0166	0.000723	ND	0.000137	0.0000011	0.00148	ND
	Middle Property (AM-02)	NA	NA	0.000071	0.00015	0.00724	0.000018	ND	0.00201	0.000288	0.0127	0.000344	0.0166	0.000692	0.000732	0.000138	0.00000105	0.00151	ND
	Lower Property (AM-03)	<0.00050	N	0.0000885	0.000124	0.00717	0.0000195	ND	0.00221	0.000282	0.0274	0.000366	0.0165	0.000819	ND	0.000141	0.00000103	0.00134	ND
12/11/2023	Top Property (AM-01)	<0.00107	N	0.0000624	0.000204	0.00538	0.000019	ND	0.00214	0.000268	0.0157	0.000471	0.0163	0.000721	0.00082	0.000193	0.00000127	0.002	ND
	Middle Property (AM-02)	<0.00049	N	0.0000913	0.00036	0.0113	0.0000263	ND	0.00224	0.000374	0.0167	0.0004	0.0252	0.00101	0.000947	0.000247	0.00000179	0.00269	ND
	Lower Property (AM-03)	<0.00086	N	0.000131	0.000105	0.00599	0.0000144	ND	0.0022	0.000222	0.0593	0.000358	0.0119	0.0016	ND	0.000197	0.000000924	0.00177	ND
12/12/2023	Top Property (AM-01)	<0.00119	N	0.0000606	0.000564	0.00759	0.000032	ND	0.00242	0.000437	0.0146	0.000527	0.0276	0.000813	0.00114	0.000235	0.00000162	0.00284	ND
	Middle Property (AM-02)	<0.00112	N	0.0000597	0.000326	0.00709	0.0000257	0.000191	0.00208	0.000361	0.0161	0.000423	0.0196	0.000987	0.000887	0.000197	0.00000139	0.00242	ND
	Lower Property (AM-03)	NA	NA	0.0000915	0.000166	0.00793	0.0000262	ND	0.00212	0.000353	0.0374	0.000576	0.0211	0.000908	0.000881	0.000179	0.00000138	0.0021	ND
12/13/2023	Top Property (AM-01)	<0.00068	N	0.0000688	0.000318	0.0103	0.0000448	ND	0.0026	0.000636	0.0181	0.000625	0.0388	0.000994	0.00122	0.000253	0.00000218	0.00357	ND
	Middle Property (AM-02)	<0.00052	N	0.0000454	0.000254	0.00708	0.0000268	ND	0.00219	0.000421	0.0238	0.000519	0.0235	0.00121	0.00092	0.000194	0.00000132	0.00252	ND
	Lower Property (AM-03)	<0.00043	N	0.0000871	0.000163	0.0103	0.000034	ND	0.00262	0.000472	0.0418	0.000464	0.0301	0.00114	0.00102	0.000208	0.0000018	0.00255	ND
95% Upper Confidence Limit [3]		0.00092		0.00008	0.00027	0.00808	0.00002	NA	0.0023	0.00038	0.033	0.00058	0.023	0.00105	0.00096	0.0002	0.0000015	0.00225	NA

Notes:
Asbestos sampling was voided at the Middle Property (AM-02) on 12/10 due to the sampling pump not providing a non-fluctuating air flow through the filter and maintain initial volume flow rate within 10% throughout the sampling period.
Asbestos sampling was voided at the Lower Property (AM-03) on 12/7, 12/8, 12/9 and 12/12 due to the sampling pump not providing a non-fluctuating air flow through the filter and maintain initial volume flow rate within 10% throughout the sampling period.
NA = Not Available
f/cc = fibers per cubic centimeter
µg/m3= micrograms per cubic meter
ND = Not detected at or above the laboratory reporting limit or method detection limit
1 Fiber count sample result via Phase Contrast Microscopy
2 Confirmed asbestos sample result via Transmission Electron Microscopy
3 95% UCL determined through 'best fit' lognormal or normal parametric statistics via W test

Table 2: HDOH CAB Ambient Community Monitoring and Sampling
Particulate Monitoring Results
Maui Wildfire, Kula
12/7/2023-12/13/2023

Particulate Size		PM 2.5	PM 10
Screening Level	Location / ID	35 µg/m^3	150 µg/m^3
12/7/2023	Top Property (AM-01)	36	13
	Middle Property (AM-02)	26	7.8
	Lower Property (AM-03)	6.2	8.9
12/8/2023	Top Property (AM-01)	34	23
	Middle Property (AM-02)	20	5.8
	Lower Property (AM-03)	7.3	8.7
12/9/2003	Top Property (AM-01)	41	21
	Middle Property (AM-02)	30	6.4
	Lower Property (AM-03)	5.4	7.2
12/10/2023	Top Property (AM-01)	20	23
	Middle Property (AM-02)	11	7.1
	Lower Property (AM-03)	8.4	7.9
12/11/2023	Top Property (AM-01)	29	15
	Middle Property (AM-02)	16	7.4
	Lower Property (AM-03)	7.4	8.5
12/12/2023	Top Property (AM-01)	40	18
	Middle Property (AM-02)	16	7.1
	Lower Property (AM-03)	7.3	7.5
12/13/2023	Top Property (AM-01)	37	33
	Middle Property (AM-02)	30	6.9
	Lower Property (AM-03)	6.6	9.3

Notes:
The exceedances on 12/7, and 12/13 are a result of the use of a brush clearing, and woodchips spread and private operations on the property.
The exceedances on 12/9, and 12/12 were not related to USACE crew activities. Exceedances took place after crew hours, no observations from field members could confirm cause.
Results are based on 24 hour TWA calculation
24 hour TWA calculation is presented in two significant figures
µg/m3 = micrograms per cubic meter
ND = Not detected at or above the laboratory reporting limit
NA = Not Available



Air Monitoring Locations

Kula Fire Perimeter

N

0 0.25 0.5
Miles

TETRA TECH

Figure 1
Ambient Community
Air Monitoring Locations

Hawaii DOH
2023 Kula Wildfire

Basemap: ESRI ArcGIS World Street Map

Appendix 1

Eurofins J3 Resources, Inc.
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Airborne Asbestos Fiber Analysis by Transmission Electron Microscopy (TEM) ISO 10312 - Ambient Air - Determination of Asbestos Fibers Direct-Transfer Transmission Electron Microscopy Method

Maura McAleese
Tetra Tech
1999 Harrison St, Ste. 500
Oakland, CA 94612

EJ3 Order #: 3480279
Project #: 103S864023141
Receipt Date: 13-Dec-2023
Analysis Date: 18-Dec-2023
Report Date: 18-Dec-2023

HDOH Kula Community Air

Sample Number **MFK-AM01-120723-AB**

Air Volume:	5847.007
Effective Filter Area:	385.0 mm^2
Level of Analysis (Chrysotile):	CDQ
Level of Analysis (Amphibole):	ADQ
Magnification Used for Fiber Counting:	20,000
Aspect Ratio for Fiber Definition:	5:1
Mean Dimension of Grid Openings (GOs):	0.0132 mm^2
Initials of Analyst:	TS
Number of GO's Examined:	10
Analytical Sensitivity: f/Liter:	0.49883
Analytical Sensitivity: f/cm3:	0.00050
Number of primary asbestos structures:	0
Number of asbestos structures counted:	0
Number of asbestos structures > 5 um :	0
Number of asbestos fibers and bundles > 5 um:	0
Number of PCM equivalent asbestos structures:	0
Number of PCM equivalent asbestos fibers:	0
Concentration of Asbestos (Chrysotile) f/cm3:	<0.00050
Concentration of Asbestos (Amphibole) f/cm3:	<0.00050
Concentration of PCME Asbestos (Chrysotile) f/cm3:	<0.00050
Concentration of Asbestos (Chrysotile), Str/L:	0
Concentration of Asbestos (Amphibole), Str/L:	0
Lower 95% Confidence Limit (Chrysotile), Str/L:	0
Upper 95% Confidence Limit (Chrysotile), Str/L:	1.8
Lower 95% Confidence Limit (Amphibole), Str/L:	0
Upper 95% Confidence Limit (Amphibole), Str/L:	1.8

Analyst: Taylor Smylie

Scott M. Ward, Ph.D. **Lab Director**

NVLAP Lab Code: 200525-0; TDSHS License: 30-0273

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HDOH Kula Community Air

Sample Number **MFK-AM02-120723-AB**

Air Volume:	6252.266
Effective Filter Area:	385.0 mm^2
Level of Analysis (Chrysotile):	CDQ
Level of Analysis (Amphibole):	ADQ
Magnification Used for Fiber Counting:	20,000
Aspect Ratio for Fiber Definition:	5:1
Mean Dimension of Grid Openings (GOs):	0.0132 mm^2
Initials of Analyst:	TS
Number of GO's Examined:	10
Analytical Sensitivity: f/Liter:	0.46650
Analytical Sensitivity: f/cm3:	0.00047
Number of primary asbestos structures:	0
Number of asbestos structures counted:	0
Number of asbestos structures > 5 um :	0
Number of asbestos fibers and bundles > 5 um:	0
Number of PCM equivalent asbestos structures:	0
Number of PCM equivalent asbestos fibers:	0
Concentration of Asbestos (Chrysotile) f/cm3:	<0.00047
Concentration of Asbestos (Amphibole) f/cm3:	<0.00047
Concentration of PCME Asbestos (Chrysotile) f/cm3:	<0.00047
Concentration of Asbestos (Chrysotile), Str/L:	0
Concentration of Asbestos (Amphibole), Str/L:	0
Lower 95% Confidence Limit (Chrysotile), Str/L:	0
Upper 95% Confidence Limit (Chrysotile), Str/L:	1.7
Lower 95% Confidence Limit (Amphibole), Str/L:	0
Upper 95% Confidence Limit (Amphibole), Str/L:	1.7

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HDOH Kula Community Air

Sample Number **MFK-FB01-120723-AB**

Air Volume:	0
Effective Filter Area:	385.0 mm^2
Level of Analysis (Chrysotile):	CDQ
Level of Analysis (Amphibole):	ADQ
Magnification Used for Fiber Counting:	20,000
Aspect Ratio for Fiber Definition:	5:1
Mean Dimension of Grid Openings (GOs):	0.0132 mm^2
Initials of Analyst:	TS
Number of GO's Examined:	10
Analytical Sensitivity: f/Liter:	N/A
Analytical Sensitivity: f/cm3:	N/A
Number of primary asbestos structures:	0
Number of asbestos structures counted:	0
Number of asbestos structures > 5 um :	0
Number of asbestos fibers and bundles > 5 um:	0
Number of PCM equivalent asbestos structures:	0
Number of PCM equivalent asbestos fibers:	0
Concentration of Asbestos (Chrysotile) f/cm3:	N/A
Concentration of Asbestos (Amphibole) f/cm3:	N/A
Concentration of PCME Asbestos (Chrysotile) f/cm3:	N/A
Concentration of Asbestos (Chrysotile), Str/L:	N/A
Concentration of Asbestos (Amphibole), Str/L:	N/A
Lower 95% Confidence Limit (Chrysotile), Str/L:	N/A
Upper 95% Confidence Limit (Chrysotile), Str/L:	N/A
Lower 95% Confidence Limit (Amphibole), Str/L:	N/A
Upper 95% Confidence Limit (Amphibole), Str/L:	N/A

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HDOH Kula Community Air

Sample Number **MFK-AM01-120823-AB**

Air Volume:	6110.793
Effective Filter Area:	385.0 mm^2
Level of Analysis (Chrysotile):	CDQ
Level of Analysis (Amphibole):	ADQ
Magnification Used for Fiber Counting:	20,000
Aspect Ratio for Fiber Definition:	5:1
Mean Dimension of Grid Openings (GOs):	0.0132 mm^2
Initials of Analyst:	TS
Number of GO's Examined:	10
Analytical Sensitivity: f/Liter:	0.47730
Analytical Sensitivity: f/cm3:	0.00048
Number of primary asbestos structures:	0
Number of asbestos structures counted:	0
Number of asbestos structures > 5 um :	0
Number of asbestos fibers and bundles > 5 um:	0
Number of PCM equivalent asbestos structures:	0
Number of PCM equivalent asbestos fibers:	0
Concentration of Asbestos (Chrysotile) f/cm3:	<0.00048
Concentration of Asbestos (Amphibole) f/cm3:	<0.00048
Concentration of PCME Asbestos (Chrysotile) f/cm3:	<0.00048
Concentration of Asbestos (Chrysotile), Str/L:	0
Concentration of Asbestos (Amphibole), Str/L:	0
Lower 95% Confidence Limit (Chrysotile), Str/L:	0
Upper 95% Confidence Limit (Chrysotile), Str/L:	1.8
Lower 95% Confidence Limit (Amphibole), Str/L:	0
Upper 95% Confidence Limit (Amphibole), Str/L:	1.8

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HDOH Kula Community Air

Sample Number **MFK-AM02-120823-AB**

Air Volume:	2468.729
Effective Filter Area:	385.0 mm^2
Level of Analysis (Chrysotile):	CDQ
Level of Analysis (Amphibole):	ADQ
Magnification Used for Fiber Counting:	20,000
Aspect Ratio for Fiber Definition:	5:1
Mean Dimension of Grid Openings (GOs):	0.0132 mm^2
Initials of Analyst:	
Number of GO's Examined:	10
Analytical Sensitivity: f/Liter:	1.18144
Analytical Sensitivity: f/cm3:	0.00118
Number of primary asbestos structures:	0
Number of asbestos structures counted:	0
Number of asbestos structures > 5 um :	0
Number of asbestos fibers and bundles > 5 um:	0
Number of PCM equivalent asbestos structures:	0
Number of PCM equivalent asbestos fibers:	0
Concentration of Asbestos (Chrysotile) f/cm3:	<0.00118
Concentration of Asbestos (Amphibole) f/cm3:	<0.00118
Concentration of PCME Asbestos (Chrysotile) f/cm3:	<0.00118
Concentration of Asbestos (Chrysotile), Str/L:	0
Concentration of Asbestos (Amphibole), Str/L:	0
Lower 95% Confidence Limit (Chrysotile), Str/L:	0
Upper 95% Confidence Limit (Chrysotile), Str/L:	4.4
Lower 95% Confidence Limit (Amphibole), Str/L:	0
Upper 95% Confidence Limit (Amphibole), Str/L:	4.4

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Sample Number **MFK-FB01-120823-AB**

Air Volume:	0
Effective Filter Area:	385.0 mm^2
Level of Analysis (Chrysotile):	CDQ
Level of Analysis (Amphibole):	ADQ
Magnification Used for Fiber Counting:	20,000
Aspect Ratio for Fiber Definition:	5:1
Mean Dimension of Grid Openings (GOs):	0.0132 mm^2
Initials of Analyst:	TS
Number of GO's Examined:	10
Analytical Sensitivity: f/Liter:	N/A
Analytical Sensitivity: f/cm3:	N/A
Number of primary asbestos structures:	0
Number of asbestos structures counted:	0
Number of asbestos structures > 5 um :	0
Number of asbestos fibers and bundles > 5 um:	0
Number of PCM equivalent asbestos structures:	0
Number of PCM equivalent asbestos fibers:	0
Concentration of Asbestos (Chrysotile) f/cm3:	N/A
Concentration of Asbestos (Amphibole) f/cm3:	N/A
Concentration of PCME Asbestos (Chrysotile) f/cm3:	N/A
Concentration of Asbestos (Chrysotile), Str/L:	N/A
Concentration of Asbestos (Amphibole), Str/L:	N/A
Lower 95% Confidence Limit (Chrysotile), Str/L:	N/A
Upper 95% Confidence Limit (Chrysotile), Str/L:	N/A
Lower 95% Confidence Limit (Amphibole), Str/L:	N/A
Upper 95% Confidence Limit (Amphibole), Str/L:	N/A

Analyst: Taylor Smylie

Scott M. Ward, Ph.D. **Lab Director**

NVLAP Lab Code: 200525-0; TDSHS License: 30-0273

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Airborne Asbestos Fiber Analysis by Transmission Electron Microscopy (TEM) ISO 10312 - Ambient Air - Determination of Asbestos Fibers Direct-Transfer Transmission Electron Microscopy Method

Maura McAleese
Tetra Tech
1999 Harrison St, Ste. 500
Oakland, CA 94612

EJ3 Order #: 3480279
Project #: 103S864023141
Receipt Date: 13-Dec-2023
Analysis Date: 18-Dec-2023
Report Date: 18-Dec-2023

HDOH Kula Community Air

Sample Number **MFK-AM01-120923-AB**

Air Volume:	3184.383
Effective Filter Area:	385.0 mm^2
Level of Analysis (Chrysotile):	CDQ
Level of Analysis (Amphibole):	ADQ
Magnification Used for Fiber Counting:	20,000
Aspect Ratio for Fiber Definition:	5:1
Mean Dimension of Grid Openings (GOs):	0.0132 mm^2
Initials of Analyst:	TS
Number of GO's Examined:	10
Analytical Sensitivity: f/Liter:	0.91593
Analytical Sensitivity: f/cm3:	0.00092
Number of primary asbestos structures:	0
Number of asbestos structures counted:	0
Number of asbestos structures > 5 um :	0
Number of asbestos fibers and bundles > 5 um:	0
Number of PCM equivalent asbestos structures:	0
Number of PCM equivalent asbestos fibers:	0
Concentration of Asbestos (Chrysotile) f/cm3:	<0.00092
Concentration of Asbestos (Amphibole) f/cm3:	<0.00092
Concentration of PCME Asbestos (Chrysotile) f/cm3:	<0.00092
Concentration of Asbestos (Chrysotile), Str/L:	0
Concentration of Asbestos (Amphibole), Str/L:	0
Lower 95% Confidence Limit (Chrysotile), Str/L:	0
Upper 95% Confidence Limit (Chrysotile), Str/L:	3.4
Lower 95% Confidence Limit (Amphibole), Str/L:	0
Upper 95% Confidence Limit (Amphibole), Str/L:	3.4

Analyst: Taylor Smylie

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HDOH Kula Community Air

Sample Number **MFK-AM02-120923-AB**

Air Volume:	3293.601
Effective Filter Area:	385.0 mm^2
Level of Analysis (Chrysotile):	CDQ
Level of Analysis (Amphibole):	ADQ
Magnification Used for Fiber Counting:	20,000
Aspect Ratio for Fiber Definition:	5:1
Mean Dimension of Grid Openings (GOs):	0.0132 mm^2
Initials of Analyst:	TS
Number of GO's Examined:	10
Analytical Sensitivity: f/Liter:	0.88556
Analytical Sensitivity: f/cm3:	0.00089
Number of primary asbestos structures:	0
Number of asbestos structures counted:	0
Number of asbestos structures > 5 um :	0
Number of asbestos fibers and bundles > 5 um:	0
Number of PCM equivalent asbestos structures:	0
Number of PCM equivalent asbestos fibers:	0
Concentration of Asbestos (Chrysotile) f/cm3:	<0.00089
Concentration of Asbestos (Amphibole) f/cm3:	<0.00089
Concentration of PCME Asbestos (Chrysotile) f/cm3:	<0.00089
Concentration of Asbestos (Chrysotile), Str/L:	0
Concentration of Asbestos (Amphibole), Str/L:	0
Lower 95% Confidence Limit (Chrysotile), Str/L:	0
Upper 95% Confidence Limit (Chrysotile), Str/L:	3.3
Lower 95% Confidence Limit (Amphibole), Str/L:	0
Upper 95% Confidence Limit (Amphibole), Str/L:	3.3

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HDOH Kula Community Air

Sample Number **MFK-FB01-120923-AB**

Air Volume:	0
Effective Filter Area:	385.0 mm^2
Level of Analysis (Chrysotile):	CDQ
Level of Analysis (Amphibole):	ADQ
Magnification Used for Fiber Counting:	20,000
Aspect Ratio for Fiber Definition:	5:1
Mean Dimension of Grid Openings (GOs):	0.0132 mm^2
Initials of Analyst:	TS
Number of GO's Examined:	10
Analytical Sensitivity: f/Liter:	N/A
Analytical Sensitivity: f/cm3:	N/A
Number of primary asbestos structures:	0
Number of asbestos structures counted:	0
Number of asbestos structures > 5 um :	0
Number of asbestos fibers and bundles > 5 um:	0
Number of PCM equivalent asbestos structures:	0
Number of PCM equivalent asbestos fibers:	0
Concentration of Asbestos (Chrysotile) f/cm3:	N/A
Concentration of Asbestos (Amphibole) f/cm3:	N/A
Concentration of PCME Asbestos (Chrysotile) f/cm3:	N/A
Concentration of Asbestos (Chrysotile), Str/L:	N/A
Concentration of Asbestos (Amphibole), Str/L:	N/A
Lower 95% Confidence Limit (Chrysotile), Str/L:	N/A
Upper 95% Confidence Limit (Chrysotile), Str/L:	N/A
Lower 95% Confidence Limit (Amphibole), Str/L:	N/A
Upper 95% Confidence Limit (Amphibole), Str/L:	N/A

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HDOH Kula Community Air

Sample Number **MFK-AM01-121023-AB**

Air Volume:	5841.036
Effective Filter Area:	385.0 mm^2
Level of Analysis (Chrysotile):	CDQ
Level of Analysis (Amphibole):	ADQ
Magnification Used for Fiber Counting:	20,000
Aspect Ratio for Fiber Definition:	5:1
Mean Dimension of Grid Openings (GOs):	0.0132 mm^2
Initials of Analyst:	TS
Number of GO's Examined:	10
Analytical Sensitivity: f/Liter:	0.49934
Analytical Sensitivity: f/cm3:	0.00050
Number of primary asbestos structures:	0
Number of asbestos structures counted:	0
Number of asbestos structures > 5 um :	0
Number of asbestos fibers and bundles > 5 um:	0
Number of PCM equivalent asbestos structures:	0
Number of PCM equivalent asbestos fibers:	0
Concentration of Asbestos (Chrysotile) f/cm3:	<0.00050
Concentration of Asbestos (Amphibole) f/cm3:	<0.00050
Concentration of PCME Asbestos (Chrysotile) f/cm3:	<0.00050
Concentration of Asbestos (Chrysotile), Str/L:	0
Concentration of Asbestos (Amphibole), Str/L:	0
Lower 95% Confidence Limit (Chrysotile), Str/L:	0
Upper 95% Confidence Limit (Chrysotile), Str/L:	1.8
Lower 95% Confidence Limit (Amphibole), Str/L:	0
Upper 95% Confidence Limit (Amphibole), Str/L:	1.8

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HDOH Kula Community Air

Sample Number **MFK-AM03-121023-AB**

Air Volume:	5832.724
Effective Filter Area:	385.0 mm^2
Level of Analysis (Chrysotile):	CDQ
Level of Analysis (Amphibole):	ADQ
Magnification Used for Fiber Counting:	20,000
Aspect Ratio for Fiber Definition:	5:1
Mean Dimension of Grid Openings (GOs):	0.0132 mm^2
Initials of Analyst:	TS
Number of GO's Examined:	10
Analytical Sensitivity: f/Liter:	0.50005
Analytical Sensitivity: f/cm3:	0.00050
Number of primary asbestos structures:	0
Number of asbestos structures counted:	0
Number of asbestos structures > 5 um :	0
Number of asbestos fibers and bundles > 5 um:	0
Number of PCM equivalent asbestos structures:	0
Number of PCM equivalent asbestos fibers:	0
Concentration of Asbestos (Chrysotile) f/cm3:	<0.00050
Concentration of Asbestos (Amphibole) f/cm3:	<0.00050
Concentration of PCME Asbestos (Chrysotile) f/cm3:	<0.00050
Concentration of Asbestos (Chrysotile), Str/L:	0
Concentration of Asbestos (Amphibole), Str/L:	0
Lower 95% Confidence Limit (Chrysotile), Str/L:	0
Upper 95% Confidence Limit (Chrysotile), Str/L:	1.8
Lower 95% Confidence Limit (Amphibole), Str/L:	0
Upper 95% Confidence Limit (Amphibole), Str/L:	1.8

Analyst: Taylor Smylie

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Report Date: 18-Dec-2023

HDOH Kula Community Air

Sample Number **MFK-FB01-121023-AB**

Air Volume:	0
Effective Filter Area:	385.0 mm^2
Level of Analysis (Chrysotile):	CDQ
Level of Analysis (Amphibole):	ADQ
Magnification Used for Fiber Counting:	20,000
Aspect Ratio for Fiber Definition:	5:1
Mean Dimension of Grid Openings (GOs):	0.0132 mm^2
Initials of Analyst:	TS
Number of GO's Examined:	10
Analytical Sensitivity: f/Liter:	N/A
Analytical Sensitivity: f/cm3:	N/A
Number of primary asbestos structures:	0
Number of asbestos structures counted:	0
Number of asbestos structures > 5 um :	0
Number of asbestos fibers and bundles > 5 um:	0
Number of PCM equivalent asbestos structures:	0
Number of PCM equivalent asbestos fibers:	0
Concentration of Asbestos (Chrysotile) f/cm3:	N/A
Concentration of Asbestos (Amphibole) f/cm3:	N/A
Concentration of PCME Asbestos (Chrysotile) f/cm3:	N/A
Concentration of Asbestos (Chrysotile), Str/L:	N/A
Concentration of Asbestos (Amphibole), Str/L:	N/A
Lower 95% Confidence Limit (Chrysotile), Str/L:	N/A
Upper 95% Confidence Limit (Chrysotile), Str/L:	N/A
Lower 95% Confidence Limit (Amphibole), Str/L:	N/A
Upper 95% Confidence Limit (Amphibole), Str/L:	N/A

Analyst: Taylor Smylie

Scott M. Ward, Ph.D. **Lab Director**

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Stage 1 Data Verification Checklist – Asbestos

HDOH CAB – Ambient Community Air Sampling – Kula

Task Order No. 23141

Reviewed by:
Talaidh Isaacs 12/19/2023 & Shanna Vasser 12/20/2023
Laboratory: Eurofins Built Environment Testing – Houston, TX
Analysis date: 12/18/2023
Report No: 3480279

√	1.	Chain of custody (CoC) documentation is present.
√	2.	Sample receipt condition information is present and acceptable.
√	3.	Laboratory conducting the analysis is identified.
X	4.	All samples submitted to the laboratory are accounted for.
√	5.	Requested analytical methods were performed.
√	6.	Analysis dates are provided.
√	7.	Analyte results are provided.
NA	8.	Result qualifiers and definitions are provided.
√	9.	Result units are reported.
√	10.	Requested reporting limits are present.
NA	11.	Method detection limits are present.
√	12.	Sample collection date and time are present.

Discrepancies:

MFK-AM03-120723-AB, MFK-AM03-120823-AB, MFK-AM03-120923-AB, and MFK-AM02-121023-AB were listed and crossed off the CoC, and no results were present in the laboratory data package. No action was necessary for this discrepancy.

Notes: None

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EJ3 Order #: 3484617
Project #: 103S864023141
Receipt Date: 18-Dec-2023
Analysis Date: 21-Dec-2023
Report Date: 21-Dec-2023

HDOH Kula Community Air

Sample Number **MFK-AM01-121123-AB**

Air Volume:	2727.594
Effective Filter Area:	385.0 mm^2
Level of Analysis (Chrysotile):	CDQ
Level of Analysis (Amphibole):	ADQ
Magnification Used for Fiber Counting:	20,000
Aspect Ratio for Fiber Definition:	5:1
Mean Dimension of Grid Openings (GOs):	0.0132 mm^2
Initials of Analyst:	TS
Number of GO's Examined:	10
Analytical Sensitivity: f/Liter:	1.06932
Analytical Sensitivity: f/cm3:	0.00107
Number of primary asbestos structures:	0
Number of asbestos structures counted:	0
Number of asbestos structures > 5 um :	0
Number of asbestos fibers and bundles > 5 um:	0
Number of PCM equivalent asbestos structures:	0
Number of PCM equivalent asbestos fibers:	0
Concentration of Asbestos (Chrysotile) f/cm3:	<0.00107
Concentration of Asbestos (Amphibole) f/cm3:	<0.00107
Concentration of PCME Asbestos (Chrysotile) f/cm3:	<0.00107
Concentration of Asbestos (Chrysotile), Str/L:	0
Concentration of Asbestos (Amphibole), Str/L:	0
Lower 95% Confidence Limit (Chrysotile), Str/L:	0
Upper 95% Confidence Limit (Chrysotile), Str/L:	3.9
Lower 95% Confidence Limit (Amphibole), Str/L:	0
Upper 95% Confidence Limit (Amphibole), Str/L:	3.9

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HDOH Kula Community Air

Sample Number **MFK-AM02-121123-AB**

Air Volume:	6013.504
Effective Filter Area:	385.0 mm^2
Level of Analysis (Chrysotile):	CDQ
Level of Analysis (Amphibole):	ADQ
Magnification Used for Fiber Counting:	20,000
Aspect Ratio for Fiber Definition:	5:1
Mean Dimension of Grid Openings (GOs):	0.0132 mm^2
Initials of Analyst:	TS
Number of GO's Examined:	10
Analytical Sensitivity: f/Liter:	0.48502
Analytical Sensitivity: f/cm3:	0.00049
Number of primary asbestos structures:	0
Number of asbestos structures counted:	0
Number of asbestos structures > 5 um :	0
Number of asbestos fibers and bundles > 5 um:	0
Number of PCM equivalent asbestos structures:	0
Number of PCM equivalent asbestos fibers:	0
Concentration of Asbestos (Chrysotile) f/cm3:	<0.00049
Concentration of Asbestos (Amphibole) f/cm3:	<0.00049
Concentration of PCME Asbestos (Chrysotile) f/cm3:	<0.00049
Concentration of Asbestos (Chrysotile), Str/L:	0
Concentration of Asbestos (Amphibole), Str/L:	0
Lower 95% Confidence Limit (Chrysotile), Str/L:	0
Upper 95% Confidence Limit (Chrysotile), Str/L:	1.8
Lower 95% Confidence Limit (Amphibole), Str/L:	0
Upper 95% Confidence Limit (Amphibole), Str/L:	1.8

Analyst: Taylor Smylie

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HDOH Kula Community Air

Sample Number **MFK-AM03-121123-AB**

Air Volume:	3395.72
Effective Filter Area:	385.0 mm^2
Level of Analysis (Chrysotile):	CDQ
Level of Analysis (Amphibole):	ADQ
Magnification Used for Fiber Counting:	20,000
Aspect Ratio for Fiber Definition:	5:1
Mean Dimension of Grid Openings (GOs):	0.0132 mm^2
Initials of Analyst:	TS
Number of GO's Examined:	10
Analytical Sensitivity: f/Liter:	0.85892
Analytical Sensitivity: f/cm3:	0.00086
Number of primary asbestos structures:	0
Number of asbestos structures counted:	0
Number of asbestos structures > 5 um :	0
Number of asbestos fibers and bundles > 5 um:	0
Number of PCM equivalent asbestos structures:	0
Number of PCM equivalent asbestos fibers:	0
Concentration of Asbestos (Chrysotile) f/cm3:	<0.00086
Concentration of Asbestos (Amphibole) f/cm3:	<0.00086
Concentration of PCME Asbestos (Chrysotile) f/cm3:	<0.00086
Concentration of Asbestos (Chrysotile), Str/L:	0
Concentration of Asbestos (Amphibole), Str/L:	0
Lower 95% Confidence Limit (Chrysotile), Str/L:	0
Upper 95% Confidence Limit (Chrysotile), Str/L:	3.2
Lower 95% Confidence Limit (Amphibole), Str/L:	0
Upper 95% Confidence Limit (Amphibole), Str/L:	3.2

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HDOH Kula Community Air

Sample Number **MFK-FB01-121123-AB**

Air Volume:	0
Effective Filter Area:	385.0 mm^2
Level of Analysis (Chrysotile):	CDQ
Level of Analysis (Amphibole):	ADQ
Magnification Used for Fiber Counting:	20,000
Aspect Ratio for Fiber Definition:	5:1
Mean Dimension of Grid Openings (GOs):	0.0132 mm^2
Initials of Analyst:	TS
Number of GO's Examined:	10
Analytical Sensitivity: f/Liter:	N/A
Analytical Sensitivity: f/cm3:	N/A
Number of primary asbestos structures:	0
Number of asbestos structures counted:	0
Number of asbestos structures > 5 um :	0
Number of asbestos fibers and bundles > 5 um:	0
Number of PCM equivalent asbestos structures:	0
Number of PCM equivalent asbestos fibers:	0
Concentration of Asbestos (Chrysotile) f/cm3:	N/A
Concentration of Asbestos (Amphibole) f/cm3:	N/A
Concentration of PCME Asbestos (Chrysotile) f/cm3:	N/A
Concentration of Asbestos (Chrysotile), Str/L:	N/A
Concentration of Asbestos (Amphibole), Str/L:	N/A
Lower 95% Confidence Limit (Chrysotile), Str/L:	N/A
Upper 95% Confidence Limit (Chrysotile), Str/L:	N/A
Lower 95% Confidence Limit (Amphibole), Str/L:	N/A
Upper 95% Confidence Limit (Amphibole), Str/L:	N/A

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HDOH Kula Community Air

Sample Number **MFK-AM01-121223-AB**

Air Volume:	2441.473
Effective Filter Area:	385.0 mm^2
Level of Analysis (Chrysotile):	CDQ
Level of Analysis (Amphibole):	ADQ
Magnification Used for Fiber Counting:	20,000
Aspect Ratio for Fiber Definition:	5:1
Mean Dimension of Grid Openings (GOs):	0.0132 mm^2
Initials of Analyst:	TS
Number of GO's Examined:	10
Analytical Sensitivity: f/Liter:	1.19463
Analytical Sensitivity: f/cm3:	0.00119
Number of primary asbestos structures:	0
Number of asbestos structures counted:	0
Number of asbestos structures > 5 um :	0
Number of asbestos fibers and bundles > 5 um:	0
Number of PCM equivalent asbestos structures:	0
Number of PCM equivalent asbestos fibers:	0
Concentration of Asbestos (Chrysotile) f/cm3:	<0.00119
Concentration of Asbestos (Amphibole) f/cm3:	<0.00119
Concentration of PCME Asbestos (Chrysotile) f/cm3:	<0.00119
Concentration of Asbestos (Chrysotile), Str/L:	0
Concentration of Asbestos (Amphibole), Str/L:	0
Lower 95% Confidence Limit (Chrysotile), Str/L:	0
Upper 95% Confidence Limit (Chrysotile), Str/L:	4.4
Lower 95% Confidence Limit (Amphibole), Str/L:	0
Upper 95% Confidence Limit (Amphibole), Str/L:	4.4

Analyst: Taylor Smylie

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Report Date: 21-Dec-2023

HDOH Kula Community Air

Sample Number **MFK-AM02-121223-AB**

Air Volume:	2607.576
Effective Filter Area:	385.0 mm^2
Level of Analysis (Chrysotile):	CDQ
Level of Analysis (Amphibole):	ADQ
Magnification Used for Fiber Counting:	20,000
Aspect Ratio for Fiber Definition:	5:1
Mean Dimension of Grid Openings (GOs):	0.0132 mm^2
Initials of Analyst:	TS
Number of GO's Examined:	10
Analytical Sensitivity: f/Liter:	1.11854
Analytical Sensitivity: f/cm3:	0.00112
Number of primary asbestos structures:	0
Number of asbestos structures counted:	0
Number of asbestos structures > 5 um :	0
Number of asbestos fibers and bundles > 5 um:	0
Number of PCM equivalent asbestos structures:	0
Number of PCM equivalent asbestos fibers:	0
Concentration of Asbestos (Chrysotile) f/cm3:	<0.00112
Concentration of Asbestos (Amphibole) f/cm3:	<0.00112
Concentration of PCME Asbestos (Chrysotile) f/cm3:	<0.00112
Concentration of Asbestos (Chrysotile), Str/L:	0
Concentration of Asbestos (Amphibole), Str/L:	0
Lower 95% Confidence Limit (Chrysotile), Str/L:	0
Upper 95% Confidence Limit (Chrysotile), Str/L:	4.1
Lower 95% Confidence Limit (Amphibole), Str/L:	0
Upper 95% Confidence Limit (Amphibole), Str/L:	4.1

Analyst: Taylor Smylie

Scott M. Ward, Ph.D. **Lab Director**

NVLAP Lab Code: 200525-0; TDSHS License: 30-0273

Eurofins J3 Resources, Inc.
6110 W. 34th Street, Houston, Texas 77092
Phone: (713) 290-0221 Fax: (713) 290-0248
j3resources.com

Airborne Asbestos Fiber Analysis by Transmission Electron Microscopy (TEM) ISO 10312 - Ambient Air - Determination of Asbestos Fibers Direct-Transfer Transmission Electron Microscopy Method

Maura McAleese
Tetra Tech
1999 Harrison St, Ste. 500
Oakland, CA 94612

EJ3 Order #: 3484617
Project #: 103S864023141
Receipt Date: 18-Dec-2023
Analysis Date: 21-Dec-2023
Report Date: 21-Dec-2023

HDOH Kula Community Air

Sample Number **MFK-FB01-121223-AB**

Air Volume:	0
Effective Filter Area:	385.0 mm^2
Level of Analysis (Chrysotile):	CDQ
Level of Analysis (Amphibole):	ADQ
Magnification Used for Fiber Counting:	20,000
Aspect Ratio for Fiber Definition:	5:1
Mean Dimension of Grid Openings (GOs):	0.0132 mm^2
Initials of Analyst:	TS
Number of GO's Examined:	10
Analytical Sensitivity: f/Liter:	N/A
Analytical Sensitivity: f/cm3:	N/A
Number of primary asbestos structures:	0
Number of asbestos structures counted:	0
Number of asbestos structures > 5 um :	0
Number of asbestos fibers and bundles > 5 um:	0
Number of PCM equivalent asbestos structures:	0
Number of PCM equivalent asbestos fibers:	0
Concentration of Asbestos (Chrysotile) f/cm3:	N/A
Concentration of Asbestos (Amphibole) f/cm3:	N/A
Concentration of PCME Asbestos (Chrysotile) f/cm3:	N/A
Concentration of Asbestos (Chrysotile), Str/L:	N/A
Concentration of Asbestos (Amphibole), Str/L:	N/A
Lower 95% Confidence Limit (Chrysotile), Str/L:	N/A
Upper 95% Confidence Limit (Chrysotile), Str/L:	N/A
Lower 95% Confidence Limit (Amphibole), Str/L:	N/A
Upper 95% Confidence Limit (Amphibole), Str/L:	N/A

Analyst: Taylor Smylie

Scott M. Ward, Ph.D. **Lab Director**

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Maura McAleese
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Oakland, CA 94612

EJ3 Order #: 3484617
Project #: 103S864023141
Receipt Date: 18-Dec-2023
Analysis Date: 21-Dec-2023
Report Date: 21-Dec-2023

HDOH Kula Community Air

Sample Number **MFK-AM01-121323-AB**

Air Volume:	4279.203
Effective Filter Area:	385.0 mm^2
Level of Analysis (Chrysotile):	CDQ
Level of Analysis (Amphibole):	ADQ
Magnification Used for Fiber Counting:	20,000
Aspect Ratio for Fiber Definition:	5:1
Mean Dimension of Grid Openings (GOs):	0.0132 mm^2
Initials of Analyst:	TS
Number of GO's Examined:	10
Analytical Sensitivity: f/Liter:	0.68159
Analytical Sensitivity: f/cm3:	0.00068
Number of primary asbestos structures:	0
Number of asbestos structures counted:	0
Number of asbestos structures > 5 um :	0
Number of asbestos fibers and bundles > 5 um:	0
Number of PCM equivalent asbestos structures:	0
Number of PCM equivalent asbestos fibers:	0
Concentration of Asbestos (Chrysotile) f/cm3:	<0.00068
Concentration of Asbestos (Amphibole) f/cm3:	<0.00068
Concentration of PCME Asbestos (Chrysotile) f/cm3:	<0.00068
Concentration of Asbestos (Chrysotile), Str/L:	0
Concentration of Asbestos (Amphibole), Str/L:	0
Lower 95% Confidence Limit (Chrysotile), Str/L:	0
Upper 95% Confidence Limit (Chrysotile), Str/L:	2.5
Lower 95% Confidence Limit (Amphibole), Str/L:	0
Upper 95% Confidence Limit (Amphibole), Str/L:	2.5

Analyst: Taylor Smylie

Scott M. Ward, Ph.D. **Lab Director**

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Oakland, CA 94612

EJ3 Order #: 3484617
Project #: 103S864023141
Receipt Date: 18-Dec-2023
Analysis Date: 21-Dec-2023
Report Date: 21-Dec-2023

HDOH Kula Community Air

Sample Number **MFK-AM02-121323-AB**

Air Volume:	5596.052
Effective Filter Area:	385.0 mm^2
Level of Analysis (Chrysotile):	CDQ
Level of Analysis (Amphibole):	ADQ
Magnification Used for Fiber Counting:	20,000
Aspect Ratio for Fiber Definition:	5:1
Mean Dimension of Grid Openings (GOs):	0.0132 mm^2
Initials of Analyst:	TS
Number of GO's Examined:	10
Analytical Sensitivity: f/Liter:	0.52120
Analytical Sensitivity: f/cm3:	0.00052
Number of primary asbestos structures:	0
Number of asbestos structures counted:	0
Number of asbestos structures > 5 um :	0
Number of asbestos fibers and bundles > 5 um:	0
Number of PCM equivalent asbestos structures:	0
Number of PCM equivalent asbestos fibers:	0
Concentration of Asbestos (Chrysotile) f/cm3:	<0.00052
Concentration of Asbestos (Amphibole) f/cm3:	<0.00052
Concentration of PCME Asbestos (Chrysotile) f/cm3:	<0.00052
Concentration of Asbestos (Chrysotile), Str/L:	0
Concentration of Asbestos (Amphibole), Str/L:	0
Lower 95% Confidence Limit (Chrysotile), Str/L:	0
Upper 95% Confidence Limit (Chrysotile), Str/L:	1.9
Lower 95% Confidence Limit (Amphibole), Str/L:	0
Upper 95% Confidence Limit (Amphibole), Str/L:	1.9

Analyst: Taylor Smylie

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EJ3 Order #: 3484617
Project #: 103S864023141
Receipt Date: 18-Dec-2023
Analysis Date: 21-Dec-2023
Report Date: 21-Dec-2023

HDOH Kula Community Air

Sample Number **MFK-AM03-121323-AB**

Air Volume:	6722.751
Effective Filter Area:	385.0 mm^2
Level of Analysis (Chrysotile):	CDQ
Level of Analysis (Amphibole):	ADQ
Magnification Used for Fiber Counting:	20,000
Aspect Ratio for Fiber Definition:	5:1
Mean Dimension of Grid Openings (GOs):	0.0132 mm^2
Initials of Analyst:	TS
Number of GO's Examined:	10
Analytical Sensitivity: f/Liter:	0.43385
Analytical Sensitivity: f/cm3:	0.00043
Number of primary asbestos structures:	0
Number of asbestos structures counted:	0
Number of asbestos structures > 5 um :	0
Number of asbestos fibers and bundles > 5 um:	0
Number of PCM equivalent asbestos structures:	0
Number of PCM equivalent asbestos fibers:	0
Concentration of Asbestos (Chrysotile) f/cm3:	<0.00043
Concentration of Asbestos (Amphibole) f/cm3:	<0.00043
Concentration of PCME Asbestos (Chrysotile) f/cm3:	<0.00043
Concentration of Asbestos (Chrysotile), Str/L:	0
Concentration of Asbestos (Amphibole), Str/L:	0
Lower 95% Confidence Limit (Chrysotile), Str/L:	0
Upper 95% Confidence Limit (Chrysotile), Str/L:	1.6
Lower 95% Confidence Limit (Amphibole), Str/L:	0
Upper 95% Confidence Limit (Amphibole), Str/L:	1.6

Analyst: Taylor Smylie

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Maura McAleese
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EJ3 Order #: 3484617
Project #: 103S864023141
Receipt Date: 18-Dec-2023
Analysis Date: 21-Dec-2023
Report Date: 21-Dec-2023

HDOH Kula Community Air

Sample Number **MFK-FB01-121323-AB**

Air Volume:	0
Effective Filter Area:	385.0 mm^2
Level of Analysis (Chrysotile):	CDQ
Level of Analysis (Amphibole):	ADQ
Magnification Used for Fiber Counting:	20,000
Aspect Ratio for Fiber Definition:	5:1
Mean Dimension of Grid Openings (GOs):	0.0132 mm^2
Initials of Analyst:	TS
Number of GO's Examined:	10
Analytical Sensitivity: f/Liter:	N/A
Analytical Sensitivity: f/cm3:	N/A
Number of primary asbestos structures:	0
Number of asbestos structures counted:	0
Number of asbestos structures > 5 um :	0
Number of asbestos fibers and bundles > 5 um:	0
Number of PCM equivalent asbestos structures:	0
Number of PCM equivalent asbestos fibers:	0
Concentration of Asbestos (Chrysotile) f/cm3:	N/A
Concentration of Asbestos (Amphibole) f/cm3:	N/A
Concentration of PCME Asbestos (Chrysotile) f/cm3:	N/A
Concentration of Asbestos (Chrysotile), Str/L:	N/A
Concentration of Asbestos (Amphibole), Str/L:	N/A
Lower 95% Confidence Limit (Chrysotile), Str/L:	N/A
Upper 95% Confidence Limit (Chrysotile), Str/L:	N/A
Lower 95% Confidence Limit (Amphibole), Str/L:	N/A
Upper 95% Confidence Limit (Amphibole), Str/L:	N/A

Analyst: Taylor Smylie

Scott M. Ward, Ph.D. **Lab Director**

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Maura McAleese
Tetra Tech
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Oakland, CA 94612

EJ3 Order #: 3484617
Project #: 103S864023141
Receipt Date: 18-Dec-2023
Analysis Date: 21-Dec-2023
Report Date: 21-Dec-2023

HDOH Kula Community Air

Sample Number **MFK-LB01-121323-AB**

Air Volume:	0
Effective Filter Area:	385.0 mm^2
Level of Analysis (Chrysotile):	CDQ
Level of Analysis (Amphibole):	ADQ
Magnification Used for Fiber Counting:	20,000
Aspect Ratio for Fiber Definition:	5:1
Mean Dimension of Grid Openings (GOs):	0.0132 mm^2
Initials of Analyst:	TS
Number of GO's Examined:	10
Analytical Sensitivity: f/Liter:	N/A
Analytical Sensitivity: f/cm3:	N/A
Number of primary asbestos structures:	0
Number of asbestos structures counted:	0
Number of asbestos structures > 5 um :	0
Number of asbestos fibers and bundles > 5 um:	0
Number of PCM equivalent asbestos structures:	0
Number of PCM equivalent asbestos fibers:	0
Concentration of Asbestos (Chrysotile) f/cm3:	N/A
Concentration of Asbestos (Amphibole) f/cm3:	N/A
Concentration of PCME Asbestos (Chrysotile) f/cm3:	N/A
Concentration of Asbestos (Chrysotile), Str/L:	N/A
Concentration of Asbestos (Amphibole), Str/L:	N/A
Lower 95% Confidence Limit (Chrysotile), Str/L:	N/A
Upper 95% Confidence Limit (Chrysotile), Str/L:	N/A
Lower 95% Confidence Limit (Amphibole), Str/L:	N/A
Upper 95% Confidence Limit (Amphibole), Str/L:	N/A

Analyst: Taylor Smylie

Scott M. Ward, Ph.D. **Lab Director**

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Oakland, CA 94612

EJ3 Order #: 3484617
Project #: 103S864023141
Receipt Date: 18-Dec-2023
Analysis Date: 21-Dec-2023
Report Date: 21-Dec-2023

HDOH Kula Community Air

Sample Number **MFK-AM01-112223-AB**

Air Volume:	2146.56
Effective Filter Area:	385.0 mm^2
Level of Analysis (Chrysotile):	CDQ
Level of Analysis (Amphibole):	ADQ
Magnification Used for Fiber Counting:	20,000
Aspect Ratio for Fiber Definition:	5:1
Mean Dimension of Grid Openings (GOs):	0.0132 mm^2
Initials of Analyst:	TS
Number of GO's Examined:	10
Analytical Sensitivity: f/Liter:	1.35876
Analytical Sensitivity: f/cm3:	0.00136
Number of primary asbestos structures:	0
Number of asbestos structures counted:	0
Number of asbestos structures > 5 um :	0
Number of asbestos fibers and bundles > 5 um:	0
Number of PCM equivalent asbestos structures:	0
Number of PCM equivalent asbestos fibers:	0
Concentration of Asbestos (Chrysotile) f/cm3:	<0.00136
Concentration of Asbestos (Amphibole) f/cm3:	<0.00136
Concentration of PCME Asbestos (Chrysotile) f/cm3:	<0.00136
Concentration of Asbestos (Chrysotile), Str/L:	0
Concentration of Asbestos (Amphibole), Str/L:	0
Lower 95% Confidence Limit (Chrysotile), Str/L:	0
Upper 95% Confidence Limit (Chrysotile), Str/L:	5
Lower 95% Confidence Limit (Amphibole), Str/L:	0
Upper 95% Confidence Limit (Amphibole), Str/L:	5

Analyst: Taylor Smylie

Scott M. Ward, Ph.D. **Lab Director**

NVLAP Lab Code: 200525-0; TDSHS License: 30-0273

Stage 1 Data Verification Checklist – Asbestos

HDOH CAB – Ambient Community Air Sampling – Kula

Task Order No. 23141

Reviewed by:
Trinh Vu 12/27/2023 & Shanna Vasser 12/27/2023
Laboratory: Eurofins Built Environment Testing – Houston, TX
Analysis date: 12/21/2023
Report No: 3484617

√	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.

Discrepancies:

MFK-AM03-121223-AB was listed on the CoC but crossed off and noted that it was void and not sent to the laboratory. No results were present in the laboratory report for this sample because it was not sent. No action was required.

Notes:

The CoC noted, “MFK-AM01-112223-AB corresponds to previously sent FB MFK-FB01-112223-AB.”

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

December 19, 2023

Ms. Chelsea Saber
Tetra Tech, Inc.
1777 Sentry Pkwy, Bldg 12
Blue Bell, PA 19422
Project Name: Maui 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 12/11/23 11:34 through 12/13/23 13:27.

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 #: 0000.00
REPORTED: 12/19/23 10:54
SUBMITTED: 12/11/23 to 12/13/23
AQS SITE CODE:
SITE CODE: Maui fires

ANALYTICAL REPORT FOR SAMPLES

SampleName	LabNumber	Matrix	Sampled	Received
TetraTech Q9543005	3121111-01	Air	12/04/23 23:59	12/11/23 11:34
TetraTech Q9543004	3121111-02	Air	12/04/23 23:59	12/11/23 11:34
TetraTech Q9543002	3121111-03	Air	12/04/23 23:59	12/11/23 11:34
TetraTech Q9542995 FB	3121111-04	Air	12/04/23 00:00	12/11/23 11:34
TetraTech Q9542999	3121111-05	Air	12/05/23 23:59	12/11/23 11:34
TetraTech Q9542997	3121111-06	Air	12/05/23 23:59	12/11/23 11:34
TetraTech Q9542996	3121111-07	Air	12/05/23 23:59	12/11/23 11:34
TetraTech Q9542989 FB	3121111-08	Air	12/05/23 00:00	12/11/23 11:34
TetraTech Q9542993	3121111-09	Air	12/06/23 23:59	12/11/23 11:34
TetraTech Q9542992	3121111-10	Air	12/06/23 23:59	12/11/23 11:34
TetraTech Q9542991	3121111-11	Air	12/06/23 23:59	12/11/23 11:34
TetraTech Q9542984 FB	3121111-12	Air	12/06/23 00:00	12/11/23 11:34
TetraTech Q9542988	3121332-01	Air	12/07/23 23:59	12/13/23 13:27
TetraTech Q9542986	3121332-02	Air	12/07/23 23:59	12/13/23 13:27
TetraTech Q9542985	3121332-03	Air	12/07/23 23:59	12/13/23 13:27
TetraTech Q9541906	3121332-04	Air	12/08/23 23:59	12/13/23 13:27
TetraTech Q9542982	3121332-05	Air	12/08/23 23:59	12/13/23 13:27
TetraTech Q9542983	3121332-06	Air	12/08/23 23:59	12/13/23 13:27
TetraTech Q9533914	3121332-07	Air	12/09/23 23:59	12/13/23 13:27
TetraTech Q9533913	3121332-08	Air	12/09/23 23:59	12/13/23 13:27
TetraTech Q9533928	3121332-09	Air	12/09/23 23:59	12/13/23 13:27

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 #: 0000.00
REPORTED: 12/19/23 10:54
SUBMITTED: 12/11/23 to 12/13/23
AQS SITE CODE:
SITE CODE: Maui fires

TetraTech Q9533920 FB	3121332-10	Air	12/09/23 00:00	12/13/23 13:27
TetraTech Q9533933 LB	3121332-11	Air	12/09/23 00:00	12/13/23 13:27
TetraTech Q9533927	3121332-12	Air	12/10/23 23:59	12/13/23 13:27
TetraTech Q9533925	3121332-13	Air	12/10/23 23:59	12/13/23 13:27
TetraTech Q9533924	3121332-14	Air	12/10/23 23:59	12/13/23 13:27
TetraTech Q9533929 FB	3121332-15	Air	12/10/23 00:00	12/13/23 13:27

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 #: 0000.00
REPORTED: 12/19/23 10:54
SUBMITTED: 12/11/23 to 12/13/23
AQS SITE CODE:
SITE CODE: Maui fires

Description: TetraTech Q9543005
Matrix: Air
Comments: MFK-AM01-120423-HM

Lab ID: 3121111-01
Sample Volume: 1913.94 m³
Filter ID:

Sampled: 12/04/23 23:59
Received: 12/11/23 11:34
Analysis Date: 12/13/23 19:38

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Aluminum	**7429-90-5**	**1420**	E	**27.3**
Antimony	**7440-36-0**	**0.0524**	SL	**0.0375**
Arsenic	**7440-38-2**	**0.208**		**0.00812**
Barium	**7440-39-3**	**9.54**		**0.806**
Beryllium	**7440-41-7**	**0.0381**		**0.00282**
Cadmium	7440-43-9	0.0134	U	0.0927
Calcium	**7440-70-2**	**701**	LJ, QB-01	**248**
Chromium	**7440-47-3**	**2.45**		**1.73**
Cobalt	**7440-48-4**	**0.474**	QB-01	**0.0133**
Copper	**7440-50-8**	**18.4**		**2.55**
Lead	**7439-92-1**	**0.417**		**0.235**
Magnesium	**7439-95-4**	**186**		**81.9**
Manganese	**7439-96-5**	**32.9**	QB-01	**1.01**
Molybdenum	**7439-98-7**	**0.975**	QB-01	**0.181**
Nickel	**7440-02-0**	**0.915**		**0.681**
Phosphorus	7723-14-0	440	U, GC-BS	1060
Potassium	**7440-09-7**	**136**		**32.3**
Rubidium	**7440-17-7**	**0.332**		**0.0156**
Selenium	**7782-49-2**	**0.268**		**0.00935**
Sodium	7440-23-5	1240	GC-BS, U	1700
Strontium	**7440-24-6**	**6.96**	QB-01	**0.554**
Thallium	**7440-28-0**	**0.00204**		**4.28E-4**
Thorium	**7440-29-01**	**0.0308**		**0.00255**
Uranium	**7440-61-1**	**0.0257**		**0.0145**
Vanadium	**7440-62-2**	**3.37**	QB-01	**0.0418**
Zinc	7440-66-6	13.5	U	83.1

CERTIFICATE OF ANALYSIS

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

FILE #: 0000.00
REPORTED: 12/19/23 10:54
SUBMITTED: 12/11/23 to 12/13/23
AQS SITE CODE:
SITE CODE: Maui fires

Description: TetraTech Q9543005
Matrix: Air
Comments: MFK-AM01-120423-HM

Lab ID: 3121111-01RE1
Sample Volume: 1913.94 m³
Filter ID:

Sampled: 12/04/23 23:59
Received: 12/11/23 11:34
Analysis Date: 12/15/23 02:50

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Iron	**7439-89-6**	**1380**	D	**41.1**

CERTIFICATE OF ANALYSIS

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

FILE #: 0000.00
REPORTED: 12/19/23 10:54
SUBMITTED: 12/11/23 to 12/13/23
AQS SITE CODE:
SITE CODE: Maui fires

Description: TetraTech Q9543004
Matrix: Air
Comments: MFK-AM02-120423-HM/MS/MSD

Lab ID: 3121111-02
Sample Volume: 1968.659 m³
Filter ID:

Sampled: 12/04/23 23:59
Received: 12/11/23 11:34
Analysis Date: 12/13/23 16:53

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Aluminum	**7429-90-5**	**159**		**26.5**
Antimony	**7440-36-0**	**0.0779**	SL	**0.0364**
Arsenic	**7440-38-2**	**0.176**		**0.00789**
Barium	**7440-39-3**	**3.44**		**0.783**
Beryllium	**7440-41-7**	**0.00625**		**0.00274**
Cadmium	7440-43-9	0.0118	U	0.0901
Calcium	**7440-70-2**	**467**	LJ, QB-01	**241**
Chromium	7440-47-3	1.65	U	1.68
Cobalt	**7440-48-4**	**0.117**	QB-01	**0.0129**
Copper	**7440-50-8**	**18.5**		**2.48**
Iron	**7439-89-6**	**185**	GC-BS, QM-4X	**20.0**
Lead	7439-92-1	0.202	U	0.228
Magnesium	**7439-95-4**	**136**		**79.7**
Manganese	**7439-96-5**	**5.13**	QB-01	**0.983**
Molybdenum	**7439-98-7**	**0.890**	QB-01	**0.176**
Nickel	7440-02-0	0.533	U, LJ, QX	0.662
Phosphorus	7723-14-0	370	U, GC-BS, QM-4X	1030
Potassium	**7440-09-7**	**85.5**		**31.4**
Rubidium	**7440-17-7**	**0.112**		**0.0151**
Selenium	**7782-49-2**	**0.104**		**0.00909**
Sodium	7440-23-5	1340	U, GC-BS, QM-4X	1650
Strontium	**7440-24-6**	**2.18**	QB-01	**0.539**
Thallium	**7440-28-0**	**6.19E-4**		**4.16E-4**
Thorium	**7440-29-01**	**0.00662**	QM-07	**0.00248**
Uranium	7440-61-1	0.00526	U	0.0140
Vanadium	**7440-62-2**	**0.660**	QB-01	**0.0407**
Zinc	7440-66-6	18.1	U	80.7

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 #: 0000.00
REPORTED: 12/19/23 10:54
SUBMITTED: 12/11/23 to 12/13/23
AQS SITE CODE:
SITE CODE: Maui fires

Description: TetraTech Q9543002
Matrix: Air
Comments: MFK-AM03-120423-HM

Lab ID: 3121111-03
Sample Volume: 1668.824 m³
Filter ID:

Sampled: 12/04/23 23:59
Received: 12/11/23 11:34
Analysis Date: 12/13/23 19:52

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Aluminum	**7429-90-5**	**148**		**31.3**
Antimony	**7440-36-0**	**0.0734**	SL	**0.0430**
Arsenic	**7440-38-2**	**0.114**		**0.00931**
Barium	**7440-39-3**	**3.93**		**0.924**
Beryllium	**7440-41-7**	**0.00722**		**0.00324**
Cadmium	7440-43-9	0.00793	U	0.106
Calcium	**7440-70-2**	**521**	LJ, QB-01	**285**
Chromium	7440-47-3	1.91	U	1.98
Cobalt	**7440-48-4**	**0.111**	QB-01	**0.0152**
Copper	**7440-50-8**	**33.1**		**2.92**
Iron	**7439-89-6**	**195**	GC-BS	**23.6**
Lead	7439-92-1	0.211	U	0.269
Magnesium	**7439-95-4**	**166**		**94.0**
Manganese	**7439-96-5**	**5.87**	QB-01	**1.16**
Molybdenum	**7439-98-7**	**1.05**	QB-01	**0.208**
Nickel	7440-02-0	0.538	U	0.781
Phosphorus	7723-14-0	441	U, GC-BS	1220
Potassium	**7440-09-7**	**92.1**		**37.0**
Rubidium	**7440-17-7**	**0.114**		**0.0178**
Selenium	**7782-49-2**	**0.115**		**0.0107**
Sodium	7440-23-5	1610	U, GC-BS	1950
Strontium	**7440-24-6**	**2.44**	QB-01	**0.636**
Thallium	**7440-28-0**	**5.76E-4**		**4.90E-4**
Thorium	**7440-29-01**	**0.00695**		**0.00292**
Uranium	7440-61-1	0.00587	U	0.0166
Vanadium	**7440-62-2**	**0.688**	QB-01	**0.0480**
Zinc	7440-66-6	16.0	U	95.3

CERTIFICATE OF ANALYSIS

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

FILE #: 0000.00
REPORTED: 12/19/23 10:54
SUBMITTED: 12/11/23 to 12/13/23
AQS SITE CODE:
SITE CODE: Maui fires

Description: TetraTech Q9542995 FB
Matrix: Air
Lab ID: 3121111-04
Sample Volume: 1913.94 m³
Filter ID:
Sampled: 12/04/23 00:00
Received: 12/11/23 11:34
Analysis Date: 12/13/23 20:06

Comments: MFK-FB01-120423-HM Field blank

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Aluminum	7429-90-5	9.28	U	27.3
Antimony	7440-36-0	0.00725	SL, U	0.0375
Arsenic	7440-38-2	0.00186	U	0.00812
Barium	7440-39-3	0.609	U	0.806
Beryllium	7440-41-7	9.42E-4	U	0.00282
Cadmium	7440-43-9	0.00239	U	0.0927
Calcium	**7440-70-2**	**344**	FB-01, LJ, QB-01	**248**
Chromium	7440-47-3	1.50	U	1.73
Cobalt	**7440-48-4**	**0.0265**	FB-01, QB-01	**0.0133**
Copper	7440-50-8	0.296	U	2.55
Iron	7439-89-6	15.9	GC-BS, U	20.6
Lead	7439-92-1	0.0553	U	0.235
Magnesium	7439-95-4	42.8	U	81.9
Manganese	7439-96-5	0.900	QB-01, U	1.01
Molybdenum	**7439-98-7**	**0.245**	FB-01, QB-01	**0.181**
Nickel	7440-02-0	0.309	U	0.681
Phosphorus	7723-14-0	337	GC-BS, U	1060
Potassium	7440-09-7	11.6	U	32.3
Rubidium	7440-17-7	0.0141	U	0.0156
Selenium	7782-49-2	0.00358	U	0.00935
Sodium	7440-23-5	699	GC-BS, U	1700
Strontium	**7440-24-6**	**0.698**	FB-01, QB-01	**0.554**
Thallium	7440-28-0	6.24E-5	U	4.28E-4
Thorium	7440-29-01	0.00219	U	0.00255
Uranium	7440-61-1	0.00171	U	0.0145
Vanadium	**7440-62-2**	**0.0433**	FB-01, QB-01	**0.0418**
Zinc	7440-66-6	8.64	U	83.1

CERTIFICATE OF ANALYSIS

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

FILE #: 0000.00
REPORTED: 12/19/23 10:54
SUBMITTED: 12/11/23 to 12/13/23
AQS SITE CODE:
SITE CODE: Maui fires

Description: TetraTech Q9542999
Matrix: Air
Comments: MFK-AM01-120523-HM

Lab ID: 3121111-05
Sample Volume: 1986.678 m³
Filter ID:

Sampled: 12/05/23 23:59
Received: 12/11/23 11:34
Analysis Date: 12/13/23 20:20

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Aluminum	**7429-90-5**	**1900**	E	**26.3**
Antimony	**7440-36-0**	**0.0469**	SL	**0.0361**
Arsenic	**7440-38-2**	**0.212**		**0.00782**
Barium	**7440-39-3**	**11.9**		**0.776**
Beryllium	**7440-41-7**	**0.0514**		**0.00272**
Cadmium	7440-43-9	0.0174	U	0.0893
Calcium	**7440-70-2**	**664**	LJ, QB-01	**239**
Chromium	**7440-47-3**	**2.87**		**1.66**
Cobalt	**7440-48-4**	**0.689**	QB-01	**0.0128**
Copper	**7440-50-8**	**20.0**		**2.46**
Lead	**7439-92-1**	**0.539**		**0.226**
Magnesium	**7439-95-4**	**178**		**78.9**
Manganese	**7439-96-5**	**49.3**	QB-01	**0.975**
Molybdenum	**7439-98-7**	**0.702**	QB-01	**0.174**
Nickel	**7440-02-0**	**0.973**		**0.656**
Phosphorus	7723-14-0	439	GC-BS, U	1020
Potassium	**7440-09-7**	**87.0**		**31.1**
Rubidium	**7440-17-7**	**0.339**		**0.0150**
Selenium	**7782-49-2**	**0.305**		**0.00901**
Sodium	7440-23-5	1150	GC-BS, U	1640
Strontium	**7440-24-6**	**7.08**	QB-01	**0.534**
Thallium	**7440-28-0**	**0.00261**		**4.12E-4**
Thorium	**7440-29-01**	**0.0389**		**0.00246**
Uranium	**7440-61-1**	**0.0334**		**0.0139**
Vanadium	**7440-62-2**	**4.23**	QB-01	**0.0403**
Zinc	7440-66-6	15.2	U	80.0

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 #: 0000.00
REPORTED: 12/19/23 10:54
SUBMITTED: 12/11/23 to 12/13/23
AQS SITE CODE:
SITE CODE: Maui fires

Description: TetraTech Q9542999
Matrix: Air
Comments: MFK-AM01-120523-HM

Lab ID: 3121111-05RE1
Sample Volume: 1986.678 m³
Filter ID:

Sampled: 12/05/23 23:59
Received: 12/11/23 11:34
Analysis Date: 12/15/23 03:04

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Iron	**7439-89-6**	**1790**	D	**99.1**

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

FILE #: 0000.00
REPORTED: 12/19/23 10:54
SUBMITTED: 12/11/23 to 12/13/23
AQS SITE CODE:
SITE CODE: Maui fires

Description: TetraTech Q9542997
Matrix: Air
Comments: MFK-AM02-120523-HM

Lab ID: 3121111-06
Sample Volume: 1973.767 m³
Filter ID:

Sampled: 12/05/23 23:59
Received: 12/11/23 11:34
Analysis Date: 12/13/23 20:34

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Aluminum	**7429-90-5**	**263**		**26.5**
Antimony	**7440-36-0**	**0.0570**	SL	**0.0364**
Arsenic	**7440-38-2**	**0.137**		**0.00787**
Barium	**7440-39-3**	**4.16**		**0.781**
Beryllium	**7440-41-7**	**0.00921**		**0.00274**
Cadmium	7440-43-9	0.00868	U	0.0899
Calcium	**7440-70-2**	**480**	LJ, QB-01	**241**
Chromium	**7440-47-3**	**1.72**		**1.67**
Cobalt	**7440-48-4**	**0.157**	QB-01	**0.0129**
Copper	**7440-50-8**	**13.9**		**2.47**
Iron	**7439-89-6**	**303**	GC-BS	**19.9**
Lead	**7439-92-1**	**0.298**		**0.228**
Magnesium	**7439-95-4**	**146**		**79.5**
Manganese	**7439-96-5**	**8.07**	QB-01	**0.981**
Molybdenum	**7439-98-7**	**0.615**	QB-01	**0.176**
Nickel	7440-02-0	0.511	U	0.660
Phosphorus	7723-14-0	355	GC-BS, U	1030
Potassium	**7440-09-7**	**93.9**		**31.3**
Rubidium	**7440-17-7**	**0.149**		**0.0151**
Selenium	**7782-49-2**	**0.120**		**0.00907**
Sodium	7440-23-5	1330	GC-BS, U	1650
Strontium	**7440-24-6**	**2.82**	QB-01	**0.537**
Thallium	**7440-28-0**	**6.72E-4**		**4.15E-4**
Thorium	**7440-29-01**	**0.00836**		**0.00247**
Uranium	7440-61-1	0.00746	U	0.0140
Vanadium	**7440-62-2**	**0.807**	QB-01	**0.0406**
Zinc	7440-66-6	14.3	U	80.5

CERTIFICATE OF ANALYSIS

Tetra Tech, Inc.
1777 Sentry Pkwy, Bldg 12
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FILE #: 0000.00
REPORTED: 12/19/23 10:54
SUBMITTED: 12/11/23 to 12/13/23
AQS SITE CODE:
SITE CODE: Maui fires

Description: TetraTech Q9542996
Matrix: Air
Comments: MFK-AM03-120523-HM

Lab ID: 3121111-07
Sample Volume: 1619.558 m³
Filter ID:

Sampled: 12/05/23 23:59
Received: 12/11/23 11:34
Analysis Date: 12/13/23 20:48

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Aluminum	**7429-90-5**	**283**		**32.2**
Antimony	**7440-36-0**	**0.0723**	SL	**0.0443**
Arsenic	**7440-38-2**	**0.0999**		**0.00959**
Barium	**7440-39-3**	**5.72**		**0.952**
Beryllium	**7440-41-7**	**0.0121**		**0.00334**
Cadmium	7440-43-9	0.00759	U	0.110
Calcium	**7440-70-2**	**559**	LJ, QB-01	**293**
Chromium	7440-47-3	2.01	U	2.04
Cobalt	**7440-48-4**	**0.171**	QB-01	**0.0157**
Copper	**7440-50-8**	**50.5**		**3.01**
Iron	**7439-89-6**	**347**	GC-BS	**24.3**
Lead	**7439-92-1**	**0.563**		**0.277**
Magnesium	**7439-95-4**	**170**		**96.8**
Manganese	**7439-96-5**	**9.64**	QB-01	**1.20**
Molybdenum	**7439-98-7**	**1.20**	QB-01	**0.214**
Nickel	7440-02-0	0.494	U	0.805
Phosphorus	7723-14-0	415	GC-BS, U	1260
Potassium	**7440-09-7**	**90.6**		**38.2**
Rubidium	**7440-17-7**	**0.160**		**0.0184**
Selenium	**7782-49-2**	**0.127**		**0.0111**
Sodium	7440-23-5	1510	GC-BS, U	2010
Strontium	**7440-24-6**	**3.18**	QB-01	**0.655**
Thallium	**7440-28-0**	**7.06E-4**		**5.05E-4**
Thorium	**7440-29-01**	**0.0112**		**0.00301**
Uranium	7440-61-1	0.00846	U	0.0171
Vanadium	**7440-62-2**	**0.887**	QB-01	**0.0494**
Zinc	7440-66-6	18.8	U	98.1

CERTIFICATE OF ANALYSIS

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

FILE #: 0000.00
REPORTED: 12/19/23 10:54
SUBMITTED: 12/11/23 to 12/13/23
AQS SITE CODE:
SITE CODE: Maui fires

Description: TetraTech Q9542989 FB
Matrix: Air
Lab ID: 3121111-08
Sample Volume: 1986.678 m³
Filter ID:
Sampled: 12/05/23 00:00
Received: 12/11/23 11:34
Analysis Date: 12/13/23 21:02

Comments: MFK-FB01-120523-HM Field Blank

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Aluminum	7429-90-5	10.4	U	26.3
Antimony	7440-36-0	0.00607	SL, U	0.0361
Arsenic	7440-38-2	0.00236	U	0.00782
Barium	7440-39-3	0.604	U	0.776
Beryllium	7440-41-7	9.08E-4	U	0.00272
Cadmium	7440-43-9	0.00221	U	0.0893
Calcium	**7440-70-2**	**343**	FB-01, LJ, QB-01	**239**
Chromium	7440-47-3	1.49	U	1.66
Cobalt	**7440-48-4**	**0.0276**	FB-01, QB-01	**0.0128**
Copper	7440-50-8	0.282	U	2.46
Iron	7439-89-6	11.2	GC-BS, U	19.8
Lead	7439-92-1	0.0523	U	0.226
Magnesium	7439-95-4	42.8	U	78.9
Manganese	7439-96-5	0.237	QB-01, U	0.975
Molybdenum	**7439-98-7**	**0.240**	FB-01, QB-01	**0.174**
Nickel	7440-02-0	0.282	U	0.656
Phosphorus	7723-14-0	350	GC-BS, U	1020
Potassium	7440-09-7	10.8	U	31.1
Rubidium	7440-17-7	0.0123	U	0.0150
Selenium	7782-49-2	0.00312	U	0.00901
Sodium	7440-23-5	716	GC-BS, U	1640
Strontium	**7440-24-6**	**0.722**	FB-01, QB-01	**0.534**
Thallium	7440-28-0	5.29E-5	U	4.12E-4
Thorium	7440-29-01	0.00225	U	0.00246
Uranium	7440-61-1	0.00183	U	0.0139
Vanadium	7440-62-2	0.0289	QB-01, U	0.0403
Zinc	7440-66-6	8.58	U	80.0

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 #: 0000.00
REPORTED: 12/19/23 10:54
SUBMITTED: 12/11/23 to 12/13/23
AQS SITE CODE:
SITE CODE: Maui fires

Description: TetraTech Q9542993
Matrix: Air
Comments: MFK-AM01-120623-HM

Lab ID: 3121111-09
Sample Volume: 2026.096 m³
Filter ID:

Sampled: 12/06/23 23:59
Received: 12/11/23 11:34
Analysis Date: 12/13/23 21:16

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Aluminum	**7429-90-5**	**2620**	E	**25.8**
Antimony	**7440-36-0**	**0.0603**	SL	**0.0354**
Arsenic	**7440-38-2**	**0.345**		**0.00767**
Barium	**7440-39-3**	**16.1**		**0.761**
Beryllium	**7440-41-7**	**0.0706**		**0.00267**
Cadmium	7440-43-9	0.0255	U	0.0875
Calcium	**7440-70-2**	**1030**	LJ, QB-01	**234**
Chromium	**7440-47-3**	**3.62**		**1.63**
Cobalt	**7440-48-4**	**1.05**	QB-01	**0.0125**
Copper	**7440-50-8**	**21.2**		**2.41**
Lead	**7439-92-1**	**0.857**		**0.222**
Magnesium	**7439-95-4**	**366**		**77.4**
Manganese	**7439-96-5**	**69.2**	QB-01	**0.956**
Molybdenum	**7439-98-7**	**0.715**	QB-01	**0.171**
Nickel	**7440-02-0**	**1.68**		**0.643**
Phosphorus	7723-14-0	484	GC-BS, U	1000
Potassium	**7440-09-7**	**156**		**30.5**
Rubidium	**7440-17-7**	**0.455**		**0.0147**
Selenium	**7782-49-2**	**0.438**		**0.00883**
Sodium	**7440-23-5**	**2170**	E, GC-BS	**1610**
Strontium	**7440-24-6**	**10.4**	QB-01	**0.524**
Thallium	**7440-28-0**	**0.00381**		**4.04E-4**
Thorium	**7440-29-01**	**0.0602**		**0.00241**
Uranium	**7440-61-1**	**0.0492**		**0.0137**
Vanadium	**7440-62-2**	**6.53**	QB-01	**0.0395**
Zinc	7440-66-6	15.9	U	78.5

CERTIFICATE OF ANALYSIS

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

FILE #: 0000.00
REPORTED: 12/19/23 10:54
SUBMITTED: 12/11/23 to 12/13/23
AQS SITE CODE:
SITE CODE: Maui fires

Description: TetraTech Q9542993
Matrix: Air
Comments: MFK-AM01-120623-HM

Lab ID: 3121111-09RE1
Sample Volume: 2026.096 m³
Filter ID:

Sampled: 12/06/23 23:59
Received: 12/11/23 11:34
Analysis Date: 12/15/23 03:17

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Iron	**7439-89-6**	**2630**	D	**97.2**

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

FILE #: 0000.00
REPORTED: 12/19/23 10:54
SUBMITTED: 12/11/23 to 12/13/23
AQS SITE CODE:
SITE CODE: Maui fires

Description: TetraTech Q9542992
Matrix: Air
Comments: MFK-AM02-120623-HM

Lab ID: 3121111-10
Sample Volume: 2035.303 m³
Filter ID:

Sampled: 12/06/23 23:59
Received: 12/11/23 11:34
Analysis Date: 12/13/23 22:05

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Aluminum	**7429-90-5**	**509**		**25.7**
Antimony	**7440-36-0**	**0.0558**	SL	**0.0353**
Arsenic	**7440-38-2**	**0.188**		**0.00763**
Barium	**7440-39-3**	**5.74**		**0.758**
Beryllium	**7440-41-7**	**0.0181**		**0.00265**
Cadmium	7440-43-9	0.0203	U	0.0871
Calcium	**7440-70-2**	**747**	LJ, QB-01	**233**
Chromium	**7440-47-3**	**2.16**		**1.62**
Cobalt	**7440-48-4**	**0.343**	QB-01	**0.0125**
Copper	**7440-50-8**	**14.9**		**2.40**
Iron	**7439-89-6**	**611**	GC-BS	**19.3**
Lead	**7439-92-1**	**0.879**		**0.221**
Magnesium	**7439-95-4**	**294**		**77.1**
Manganese	**7439-96-5**	**18.8**	QB-01	**0.951**
Molybdenum	**7439-98-7**	**0.652**	QB-01	**0.170**
Nickel	**7440-02-0**	**1.22**		**0.640**
Phosphorus	7723-14-0	367	GC-BS, U	999
Potassium	**7440-09-7**	**134**		**30.4**
Rubidium	**7440-17-7**	**0.209**		**0.0146**
Selenium	**7782-49-2**	**0.183**		**0.00879**
Sodium	**7440-23-5**	**2240**	E, GC-BS	**1600**
Strontium	**7440-24-6**	**5.23**	QB-01	**0.521**
Thallium	**7440-28-0**	**0.00118**		**4.02E-4**
Thorium	**7440-29-01**	**0.0151**		**0.00240**
Uranium	**7440-61-1**	**0.0136**		**0.0136**
Vanadium	**7440-62-2**	**1.94**	QB-01	**0.0393**
Zinc	7440-66-6	13.7	U	78.1

CERTIFICATE OF ANALYSIS

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

FILE #: 0000.00
REPORTED: 12/19/23 10:54
SUBMITTED: 12/11/23 to 12/13/23
AQS SITE CODE:
SITE CODE: Maui fires

Description: TetraTech Q9542991
Matrix: Air
Comments: MFK-AM03-120623-HM

Lab ID: 3121111-11
Sample Volume: 1665.355 m³
Filter ID:

Sampled: 12/06/23 23:59
Received: 12/11/23 11:34
Analysis Date: 12/13/23 22:20

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Aluminum	**7429-90-5**	**441**		**31.4**
Antimony	**7440-36-0**	**0.0719**	SL	**0.0431**
Arsenic	**7440-38-2**	**0.151**		**0.00933**
Barium	**7440-39-3**	**6.85**		**0.926**
Beryllium	**7440-41-7**	**0.0196**		**0.00324**
Cadmium	7440-43-9	0.0101	U	0.106
Calcium	**7440-70-2**	**798**	LJ, QB-01	**285**
Chromium	**7440-47-3**	**2.53**		**1.98**
Cobalt	**7440-48-4**	**0.334**	QB-01	**0.0152**
Copper	**7440-50-8**	**30.1**		**2.93**
Iron	**7439-89-6**	**584**	GC-BS	**23.6**
Lead	**7439-92-1**	**0.418**		**0.270**
Magnesium	**7439-95-4**	**317**		**94.2**
Manganese	**7439-96-5**	**17.4**	QB-01	**1.16**
Molybdenum	**7439-98-7**	**0.892**	QB-01	**0.208**
Nickel	**7440-02-0**	**1.26**		**0.783**
Phosphorus	7723-14-0	438	GC-BS, U	1220
Potassium	**7440-09-7**	**133**		**37.1**
Rubidium	**7440-17-7**	**0.208**		**0.0179**
Selenium	**7782-49-2**	**0.178**		**0.0107**
Sodium	**7440-23-5**	**2500**	E, GC-BS	**1950**
Strontium	**7440-24-6**	**5.38**	QB-01	**0.637**
Thallium	**7440-28-0**	**0.00103**		**4.91E-4**
Thorium	**7440-29-01**	**0.0153**		**0.00293**
Uranium	7440-61-1	0.0128	U	0.0166
Vanadium	**7440-62-2**	**1.86**	QB-01	**0.0481**
Zinc	7440-66-6	15.1	U	95.4

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 #: 0000.00
REPORTED: 12/19/23 10:54
SUBMITTED: 12/11/23 to 12/13/23
AQS SITE CODE:
SITE CODE: Maui fires

Description: TetraTech Q9542984 FB
Matrix: Air
Lab ID: 3121111-12
Sample Volume: 2026.096 m³
Filter ID:
Sampled: 12/06/23 00:00
Received: 12/11/23 11:34
Analysis Date: 12/13/23 22:34

Comments: MFK-FB01-120623-HM Field Blank

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Aluminum	7429-90-5	10.2	U	25.8
Antimony	7440-36-0	0.00667	SL, U	0.0354
Arsenic	7440-38-2	0.00157	U	0.00767
Barium	7440-39-3	0.598	U	0.761
Beryllium	7440-41-7	8.35E-4	U	0.00267
Cadmium	7440-43-9	0.00205	U	0.0875
Calcium	**7440-70-2**	**333**	FB-01, LJ, QB-01	**234**
Chromium	7440-47-3	1.41	U	1.63
Cobalt	**7440-48-4**	**0.0229**	FB-01, QB-01	**0.0125**
Copper	7440-50-8	0.331	U	2.41
Iron	7439-89-6	10.9	GC-BS, U	19.4
Lead	7439-92-1	0.0493	U	0.222
Magnesium	7439-95-4	41.3	U	77.4
Manganese	7439-96-5	0.285	QB-01, U	0.956
Molybdenum	**7439-98-7**	**0.234**	FB-01, QB-01	**0.171**
Nickel	7440-02-0	0.262	U	0.643
Phosphorus	7723-14-0	337	GC-BS, U	1000
Potassium	7440-09-7	9.45	U	30.5
Rubidium	7440-17-7	0.0135	U	0.0147
Selenium	7782-49-2	0.00412	U	0.00883
Sodium	7440-23-5	692	GC-BS, U	1610
Strontium	**7440-24-6**	**0.714**	FB-01, QB-01	**0.524**
Thallium	7440-28-0	4.18E-5	U	4.04E-4
Thorium	7440-29-01	0.00219	U	0.00241
Uranium	7440-61-1	0.00179	U	0.0137
Vanadium	7440-62-2	0.0234	QB-01, U	0.0395
Zinc	7440-66-6	6.27	U	78.5

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 #: 0000.00
REPORTED: 12/19/23 10:54
SUBMITTED: 12/11/23 to 12/13/23
AQS SITE CODE:
SITE CODE: Maui fires

Description: TetraTech Q9542988
Matrix: Air
Comments: MFK-AM01-120723-HM

Lab ID: 3121332-01
Sample Volume: 1968.546 m³
Filter ID:

Sampled: 12/07/23 23:59
Received: 12/13/23 13:27
Analysis Date: 12/14/23 22:37

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Aluminum	**7429-90-5**	**885**	E	**26.5**
Antimony	**7440-36-0**	**0.0502**	SL	**0.0364**
Arsenic	**7440-38-2**	**0.160**		**0.00789**
Barium	**7440-39-3**	**6.61**		**0.784**
Beryllium	**7440-41-7**	**0.0252**		**0.00274**
Cadmium	7440-43-9	0.0113	U	0.0901
Calcium	**7440-70-2**	**680**	LJ, QB-01	**241**
Chromium	**7440-47-3**	**2.29**		**1.68**
Cobalt	**7440-48-4**	**0.391**	QB-01	**0.0129**
Copper	**7440-50-8**	**26.5**		**2.48**
Iron	**7439-89-6**	**883**		**20.0**
Lead	**7439-92-1**	**0.804**		**0.228**
Magnesium	**7439-95-4**	**365**		**79.7**
Manganese	**7439-96-5**	**23.4**		**0.984**
Molybdenum	**7439-98-7**	**0.845**	B, QB-01	**0.176**
Nickel	**7440-02-0**	**0.996**		**0.662**
Phosphorus	7723-14-0	415	U	1030
Potassium	**7440-09-7**	**144**	B	**31.4**
Rubidium	**7440-17-7**	**0.229**		**0.0151**
Selenium	**7782-49-2**	**0.239**		**0.00909**
Sodium	**7440-23-5**	**2950**	E	**1650**
Strontium	**7440-24-6**	**5.61**	QB-01	**0.539**
Thallium	**7440-28-0**	**0.00154**		**4.16E-4**
Thorium	**7440-29-01**	**0.0206**		**0.00248**
Uranium	**7440-61-1**	**0.0180**		**0.0141**
Vanadium	**7440-62-2**	**2.47**		**0.0407**
Zinc	7440-66-6	25.5	U	80.7

CERTIFICATE OF ANALYSIS

Tetra Tech, Inc.
1777 Sentry Pkwy, Bldg 12
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ATTN: Ms. Chelsea Saber
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FILE #: 0000.00
REPORTED: 12/19/23 10:54
SUBMITTED: 12/11/23 to 12/13/23
AQS SITE CODE:
SITE CODE: Maui fires

Description: TetraTech Q9542986
Matrix: Air
Comments: MFK-AM02-120723-HM

Lab ID: 3121332-02
Sample Volume: 2068.806 m³
Filter ID:

Sampled: 12/07/23 23:59
Received: 12/13/23 13:27
Analysis Date: 12/14/23 22:52

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Aluminum	**7429-90-5**	**300**		**25.2**
Antimony	**7440-36-0**	**0.0469**	SL	**0.0347**
Arsenic	**7440-38-2**	**0.121**		**0.00751**
Barium	**7440-39-3**	**3.85**		**0.746**
Beryllium	**7440-41-7**	**0.0109**		**0.00261**
Cadmium	7440-43-9	0.0103	U	0.0857
Calcium	**7440-70-2**	**601**	LJ, QB-01	**230**
Chromium	**7440-47-3**	**1.85**		**1.60**
Cobalt	**7440-48-4**	**0.187**	QB-01	**0.0123**
Copper	**7440-50-8**	**35.2**		**2.36**
Iron	**7439-89-6**	**348**		**19.0**
Lead	**7439-92-1**	**0.871**		**0.217**
Magnesium	**7439-95-4**	**384**		**75.8**
Manganese	**7439-96-5**	**9.12**		**0.936**
Molybdenum	**7439-98-7**	**0.939**	B, QB-01	**0.168**
Nickel	**7440-02-0**	**0.737**		**0.630**
Phosphorus	7723-14-0	384	U	983
Potassium	**7440-09-7**	**155**	B	**29.9**
Rubidium	**7440-17-7**	**0.143**		**0.0144**
Selenium	**7782-49-2**	**0.186**		**0.00865**
Sodium	**7440-23-5**	**3300**	E	**1570**
Strontium	**7440-24-6**	**4.29**	QB-01	**0.513**
Thallium	**7440-28-0**	**7.03E-4**		**3.96E-4**
Thorium	**7440-29-01**	**0.0119**		**0.00236**
Uranium	7440-61-1	0.00886	U	0.0134
Vanadium	**7440-62-2**	**1.26**		**0.0387**
Zinc	7440-66-6	23.8	U	76.8

CERTIFICATE OF ANALYSIS

Tetra Tech, Inc.
1777 Sentry Pkwy, Bldg 12
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ATTN: Ms. Chelsea Saber
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FILE #: 0000.00
REPORTED: 12/19/23 10:54
SUBMITTED: 12/11/23 to 12/13/23
AQS SITE CODE:
SITE CODE: Maui fires

Description: TetraTech Q9542985
Matrix: Air
Comments: MFK-AM03-120723-HM

Lab ID: 3121332-03
Sample Volume: 1666.743 m³
Filter ID:

Sampled: 12/07/23 23:59
Received: 12/13/23 13:27
Analysis Date: 12/14/23 23:07

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Aluminum	**7429-90-5**	**464**		**31.3**
Antimony	**7440-36-0**	**0.0784**	SL	**0.0430**
Arsenic	**7440-38-2**	**0.147**		**0.00932**
Barium	**7440-39-3**	**7.34**		**0.925**
Beryllium	**7440-41-7**	**0.0211**		**0.00324**
Cadmium	7440-43-9	0.00886	U	0.106
Calcium	**7440-70-2**	**750**	LJ, QB-01	**285**
Chromium	**7440-47-3**	**2.34**		**1.98**
Cobalt	**7440-48-4**	**0.290**	QB-01	**0.0152**
Copper	**7440-50-8**	**62.9**		**2.93**
Iron	**7439-89-6**	**559**		**23.6**
Lead	**7439-92-1**	**0.618**		**0.269**
Magnesium	**7439-95-4**	**453**		**94.1**
Manganese	**7439-96-5**	**16.6**		**1.16**
Molybdenum	**7439-98-7**	**1.65**	B, QB-01	**0.208**
Nickel	**7440-02-0**	**0.936**		**0.782**
Phosphorus	7723-14-0	485	U	1220
Potassium	**7440-09-7**	**162**	B	**37.1**
Rubidium	**7440-17-7**	**0.205**		**0.0179**
Selenium	**7782-49-2**	**0.207**		**0.0107**
Sodium	**7440-23-5**	**3830**	E	**1950**
Strontium	**7440-24-6**	**5.91**	QB-01	**0.636**
Thallium	**7440-28-0**	**0.00126**		**4.91E-4**
Thorium	**7440-29-01**	**0.0191**		**0.00293**
Uranium	7440-61-1	0.0130	U	0.0166
Vanadium	**7440-62-2**	**1.79**		**0.0480**
Zinc	7440-66-6	22.6	U	95.4

CERTIFICATE OF ANALYSIS

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

FILE #: 0000.00
REPORTED: 12/19/23 10:54
SUBMITTED: 12/11/23 to 12/13/23
AQS SITE CODE:
SITE CODE: Maui fires

Description: TetraTech Q9541906
Matrix: Air
Comments: MFK-AM01-120823-HM

Lab ID: 3121332-04
Sample Volume: 2028.629 m³
Filter ID:

Sampled: 12/08/23 23:59
Received: 12/13/23 13:27
Analysis Date: 12/14/23 23:21

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Aluminum	**7429-90-5**	**601**		**25.7**
Antimony	**7440-36-0**	**0.0440**	SL	**0.0354**
Arsenic	**7440-38-2**	**0.119**		**0.00766**
Barium	**7440-39-3**	**5.40**		**0.760**
Beryllium	**7440-41-7**	**0.0175**		**0.00266**
Cadmium	7440-43-9	0.00818	U	0.0874
Calcium	**7440-70-2**	**590**	LJ, QB-01	**234**
Chromium	**7440-47-3**	**2.06**		**1.63**
Cobalt	**7440-48-4**	**0.260**	QB-01	**0.0125**
Copper	**7440-50-8**	**14.8**		**2.41**
Iron	**7439-89-6**	**594**		**19.4**
Lead	**7439-92-1**	**0.454**		**0.221**
Magnesium	**7439-95-4**	**228**		**77.3**
Manganese	**7439-96-5**	**16.0**		**0.954**
Molybdenum	**7439-98-7**	**0.740**	B, QB-01	**0.171**
Nickel	**7440-02-0**	**0.792**		**0.642**
Phosphorus	7723-14-0	403	U	1000
Potassium	**7440-09-7**	**96.6**	B	**30.5**
Rubidium	**7440-17-7**	**0.172**		**0.0147**
Selenium	**7782-49-2**	**0.193**		**0.00882**
Sodium	**7440-23-5**	**1940**	E	**1600**
Strontium	**7440-24-6**	**4.19**	QB-01	**0.523**
Thallium	**7440-28-0**	**0.00114**		**4.03E-4**
Thorium	**7440-29-01**	**0.0136**		**0.00241**
Uranium	7440-61-1	0.0129	U	0.0136
Vanadium	**7440-62-2**	**1.53**		**0.0395**
Zinc	7440-66-6	16.9	U	78.4

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 #: 0000.00
REPORTED: 12/19/23 10:54
SUBMITTED: 12/11/23 to 12/13/23
AQS SITE CODE:
SITE CODE: Maui fires

Description: TetraTech Q9542982
Matrix: Air
Comments: MFK-AM02-120823-HM

Lab ID: 3121332-05
Sample Volume: 2051.566 m³
Filter ID:

Sampled: 12/08/23 23:59
Received: 12/13/23 13:27
Analysis Date: 12/14/23 23:37

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Aluminum	**7429-90-5**	**381**		**25.5**
Antimony	**7440-36-0**	**0.0722**	SL	**0.0350**
Arsenic	**7440-38-2**	**0.194**		**0.00757**
Barium	**7440-39-3**	**5.41**		**0.752**
Beryllium	**7440-41-7**	**0.0131**		**0.00263**
Cadmium	7440-43-9	0.0186	U	0.0864
Calcium	**7440-70-2**	**574**	LJ, QB-01	**232**
Chromium	**7440-47-3**	**1.83**		**1.61**
Cobalt	**7440-48-4**	**0.189**	QB-01	**0.0124**
Copper	**7440-50-8**	**15.5**		**2.38**
Iron	**7439-89-6**	**388**		**19.2**
Lead	**7439-92-1**	**0.337**		**0.219**
Magnesium	**7439-95-4**	**227**		**76.5**
Manganese	**7439-96-5**	**10.6**		**0.944**
Molybdenum	**7439-98-7**	**0.720**	B, QB-01	**0.169**
Nickel	**7440-02-0**	**0.878**		**0.635**
Phosphorus	7723-14-0	404	U	991
Potassium	**7440-09-7**	**122**	B	**30.1**
Rubidium	**7440-17-7**	**0.163**		**0.0145**
Selenium	**7782-49-2**	**0.157**		**0.00872**
Sodium	**7440-23-5**	**1990**	E	**1590**
Strontium	**7440-24-6**	**4.21**	QB-01	**0.517**
Thallium	**7440-28-0**	**9.26E-4**		**3.99E-4**
Thorium	**7440-29-01**	**0.0118**		**0.00238**
Uranium	7440-61-1	0.0101	U	0.0135
Vanadium	**7440-62-2**	**1.18**		**0.0390**
Zinc	7440-66-6	15.3	U	77.5

CERTIFICATE OF ANALYSIS

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

FILE #: 0000.00
REPORTED: 12/19/23 10:54
SUBMITTED: 12/11/23 to 12/13/23
AQS SITE CODE:
SITE CODE: Maui fires

Description: TetraTech Q9542983
Matrix: Air
Comments: MFK-AM03-120823-HM

Lab ID: 3121332-06
Sample Volume: 1734.714 m³
Filter ID:

Sampled: 12/08/23 23:59
Received: 12/13/23 13:27
Analysis Date: 12/14/23 19:58

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Aluminum	**7429-90-5**	**383**		**30.1**
Antimony	**7440-36-0**	**0.0839**	SL	**0.0414**
Arsenic	**7440-38-2**	**0.101**		**0.00896**
Barium	**7440-39-3**	**7.62**		**0.889**
Beryllium	**7440-41-7**	**0.0182**		**0.00311**
Cadmium	7440-43-9	0.00833	U	0.102
Calcium	**7440-70-2**	**623**	A-01, LJ, QB-01	**274**
Chromium	**7440-47-3**	**2.10**		**1.90**
Cobalt	**7440-48-4**	**0.237**	QB-01	**0.0146**
Copper	**7440-50-8**	**34.8**		**2.81**
Iron	**7439-89-6**	**478**	QM-4X	**22.7**
Lead	**7439-92-1**	**0.343**		**0.259**
Magnesium	**7439-95-4**	**254**		**90.4**
Manganese	**7439-96-5**	**15.1**		**1.12**
Molybdenum	**7439-98-7**	**1.05**	B, QB-01	**0.200**
Nickel	7440-02-0	0.621	U	0.751
Phosphorus	7723-14-0	461	QM-4X, U	1170
Potassium	**7440-09-7**	**105**	B, QM-07	**35.6**
Rubidium	**7440-17-7**	**0.185**		**0.0172**
Selenium	**7782-49-2**	**0.162**		**0.0103**
Sodium	**7440-23-5**	**2200**	A-01, E, QM-4X	**1880**
Strontium	**7440-24-6**	**4.71**	QB-01	**0.612**
Thallium	**7440-28-0**	**0.00143**		**4.72E-4**
Thorium	**7440-29-01**	**0.0143**	QM-07	**0.00281**
Uranium	7440-61-1	0.0119	U	0.0159
Vanadium	**7440-62-2**	**1.36**		**0.0461**
Zinc	7440-66-6	30.0	U	91.6

CERTIFICATE OF ANALYSIS

Tetra Tech, Inc.
1777 Sentry Pkwy, Bldg 12
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FILE #: 0000.00
REPORTED: 12/19/23 10:54
SUBMITTED: 12/11/23 to 12/13/23
AQS SITE CODE:
SITE CODE: Maui fires

Description: TetraTech Q9533914
Matrix: Air
Comments: MFK-AM01-120923-HM

Lab ID: 3121332-07
Sample Volume: 2065.514 m³
Filter ID:

Sampled: 12/09/23 23:59
Received: 12/13/23 13:27
Analysis Date: 12/14/23 23:52

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Aluminum	**7429-90-5**	**484**		**25.3**
Antimony	**7440-36-0**	**0.0404**	SL	**0.0347**
Arsenic	**7440-38-2**	**0.204**		**0.00752**
Barium	**7440-39-3**	**5.01**		**0.747**
Beryllium	**7440-41-7**	**0.0154**		**0.00262**
Cadmium	7440-43-9	0.00852	U	0.0859
Calcium	**7440-70-2**	**437**	QB-01, LJ	**230**
Chromium	**7440-47-3**	**2.02**		**1.60**
Cobalt	**7440-48-4**	**0.238**	QB-01	**0.0123**
Copper	**7440-50-8**	**16.8**		**2.36**
Iron	**7439-89-6**	**517**		**19.1**
Lead	**7439-92-1**	**0.429**		**0.217**
Magnesium	**7439-95-4**	**161**		**75.9**
Manganese	**7439-96-5**	**14.3**		**0.937**
Molybdenum	**7439-98-7**	**0.763**	B, QB-01	**0.168**
Nickel	**7440-02-0**	**0.631**		**0.631**
Phosphorus	7723-14-0	331	U	985
Potassium	**7440-09-7**	**71.2**	B	**29.9**
Rubidium	**7440-17-7**	**0.149**		**0.0144**
Selenium	**7782-49-2**	**0.146**		**0.00866**
Sodium	7440-23-5	1380	U	1580
Strontium	**7440-24-6**	**3.22**	QB-01	**0.514**
Thallium	**7440-28-0**	**9.93E-4**		**3.96E-4**
Thorium	**7440-29-01**	**0.0126**		**0.00236**
Uranium	7440-61-1	0.0110	U	0.0134
Vanadium	**7440-62-2**	**1.40**		**0.0388**
Zinc	7440-66-6	15.2	U	77.0

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 #: 0000.00
REPORTED: 12/19/23 10:54
SUBMITTED: 12/11/23 to 12/13/23
AQS SITE CODE:
SITE CODE: Maui fires

Description: TetraTech Q9533913
Matrix: Air
Comments: MFK-AM02-120923-HM

Lab ID: 3121332-08
Sample Volume: 2068.806 m³
Filter ID:

Sampled: 12/09/23 23:59
Received: 12/13/23 13:27
Analysis Date: 12/15/23 00:06

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Aluminum	**7429-90-5**	**605**		**25.2**
Antimony	**7440-36-0**	**0.0532**	SL	**0.0347**
Arsenic	**7440-38-2**	**0.385**		**0.00751**
Barium	**7440-39-3**	**6.35**		**0.746**
Beryllium	**7440-41-7**	**0.0202**		**0.00261**
Cadmium	7440-43-9	0.0186	U	0.0857
Calcium	**7440-70-2**	**481**	LJ, QB-01	**230**
Chromium	**7440-47-3**	**2.07**		**1.60**
Cobalt	**7440-48-4**	**0.288**	QB-01	**0.0123**
Copper	**7440-50-8**	**15.9**		**2.36**
Iron	**7439-89-6**	**633**		**19.0**
Lead	**7439-92-1**	**0.440**		**0.217**
Magnesium	**7439-95-4**	**174**		**75.8**
Manganese	**7439-96-5**	**16.6**		**0.936**
Molybdenum	**7439-98-7**	**0.721**	B, QB-01	**0.168**
Nickel	**7440-02-0**	**0.649**		**0.630**
Phosphorus	7723-14-0	334	U	983
Potassium	**7440-09-7**	**136**	B	**29.9**
Rubidium	**7440-17-7**	**0.253**		**0.0144**
Selenium	**7782-49-2**	**0.146**		**0.00865**
Sodium	7440-23-5	1370	U	1570
Strontium	**7440-24-6**	**3.98**	QB-01	**0.513**
Thallium	**7440-28-0**	**0.00117**		**3.96E-4**
Thorium	**7440-29-01**	**0.0185**		**0.00236**
Uranium	**7440-61-1**	**0.0138**		**0.0134**
Vanadium	**7440-62-2**	**1.68**		**0.0387**
Zinc	7440-66-6	14.8	U	76.8

CERTIFICATE OF ANALYSIS

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

FILE #: 0000.00
REPORTED: 12/19/23 10:54
SUBMITTED: 12/11/23 to 12/13/23
AQS SITE CODE:
SITE CODE: Maui fires

Description: TetraTech Q9533928
Matrix: Air
Comments: MFK-AM03-120923-HM

Lab ID: 3121332-09
Sample Volume: 1795.42 m³
Filter ID:

Sampled: 12/09/23 23:59
Received: 12/13/23 13:27
Analysis Date: 12/15/23 00:20

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Aluminum	**7429-90-5**	**720**		**29.1**
Antimony	**7440-36-0**	**0.0890**	SL	**0.0400**
Arsenic	**7440-38-2**	**0.239**		**0.00865**
Barium	**7440-39-3**	**11.2**		**0.859**
Beryllium	**7440-41-7**	**0.0343**		**0.00301**
Cadmium	7440-43-9	0.0151	U	0.0988
Calcium	**7440-70-2**	**585**	LJ, QB-01	**265**
Chromium	**7440-47-3**	**2.88**		**1.84**
Cobalt	**7440-48-4**	**0.429**	QB-01	**0.0141**
Copper	**7440-50-8**	**34.5**		**2.72**
Iron	**7439-89-6**	**881**		**21.9**
Lead	**7439-92-1**	**0.686**		**0.250**
Magnesium	**7439-95-4**	**207**		**87.4**
Manganese	**7439-96-5**	**28.1**		**1.08**
Molybdenum	**7439-98-7**	**0.978**	B, QB-01	**0.193**
Nickel	**7440-02-0**	**0.803**		**0.726**
Phosphorus	7723-14-0	387	U	1130
Potassium	**7440-09-7**	**115**	B	**34.4**
Rubidium	**7440-17-7**	**0.289**		**0.0166**
Selenium	**7782-49-2**	**0.178**		**0.00997**
Sodium	7440-23-5	1450	U	1810
Strontium	**7440-24-6**	**6.70**	QB-01	**0.591**
Thallium	**7440-28-0**	**0.00192**		**4.56E-4**
Thorium	**7440-29-01**	**0.0250**		**0.00272**
Uranium	**7440-61-1**	**0.0186**		**0.0154**
Vanadium	**7440-62-2**	**2.14**		**0.0446**
Zinc	7440-66-6	20.9	U	88.5

CERTIFICATE OF ANALYSIS

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

FILE #: 0000.00
REPORTED: 12/19/23 10:54
SUBMITTED: 12/11/23 to 12/13/23
AQS SITE CODE:
SITE CODE: Maui fires

Description: TetraTech Q9533920 FB
Matrix: Air
Lab ID: 3121332-10
Sample Volume: 2065.514 m³
Filter ID:
Sampled: 12/09/23 00:00
Received: 12/13/23 13:27
Analysis Date: 12/15/23 00:35

Comments: MFK-FB01-120923-HM Field Blank

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Aluminum	7429-90-5	9.67	U	25.3
Antimony	7440-36-0	0.00576	SL, U	0.0347
Arsenic	**7440-38-2**	**0.00973**	FB-01	**0.00752**
Barium	7440-39-3	0.561	U	0.747
Beryllium	7440-41-7	8.68E-4	U	0.00262
Cadmium	7440-43-9	0.00230	U	0.0859
Calcium	**7440-70-2**	**235**	FB-01, LJ, QB-01	**230**
Chromium	7440-47-3	1.45	U	1.60
Cobalt	**7440-48-4**	**0.0498**	FB-01, QB-01	**0.0123**
Copper	7440-50-8	0.548	U	2.36
Iron	7439-89-6	10.7	U	19.1
Lead	7439-92-1	0.0515	U	0.217
Magnesium	7439-95-4	36.9	U	75.9
Manganese	7439-96-5	0.156	U	0.937
Molybdenum	**7439-98-7**	**0.222**	B, FB-01, QB-01	**0.168**
Nickel	7440-02-0	0.306	U	0.631
Phosphorus	7723-14-0	275	U	985
Potassium	7440-09-7	12.0	B, U	29.9
Rubidium	7440-17-7	0.0103	U	0.0144
Selenium	7782-49-2	0.00248	U	0.00866
Sodium	7440-23-5	636	U	1580
Strontium	7440-24-6	0.499	QB-01, U	0.514
Thallium	7440-28-0	7.26E-5	U	3.96E-4
Thorium	7440-29-01	0.00189	U	0.00236
Uranium	7440-61-1	0.00145	U	0.0134
Vanadium	7440-62-2	0.00206	U	0.0388
Zinc	7440-66-6	7.69	U	77.0

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 #: 0000.00
REPORTED: 12/19/23 10:54
SUBMITTED: 12/11/23 to 12/13/23
AQS SITE CODE:
SITE CODE: Maui fires

Description: TetraTech Q9533933 LB
Matrix: Air
Comments: MFK-LB01-120923-HM Lot Blank

Lab ID: 3121332-11
Sample Volume: 2065.514 m³
Filter ID:

Sampled: 12/09/23 00:00
Received: 12/13/23 13:27
Analysis Date: 12/15/23 00:49

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Aluminum	7429-90-5	9.32	U	25.3
Antimony	7440-36-0	0.00651	SL, U	0.0347
Arsenic	7440-38-2	0.00347	U	0.00752
Barium	**7440-39-3**	**0.815**	FB-01	**0.747**
Beryllium	7440-41-7	8.58E-4	U	0.00262
Cadmium	7440-43-9	0.00271	U	0.0859
Calcium	**7440-70-2**	**238**	FB-01, LJ, QB-01	**230**
Chromium	7440-47-3	1.56	U	1.60
Cobalt	**7440-48-4**	**0.0438**	FB-01, QB-01	**0.0123**
Copper	7440-50-8	0.297	U	2.36
Iron	7439-89-6	10.9	U	19.1
Lead	7439-92-1	0.0467	U	0.217
Magnesium	7439-95-4	38.0	U	75.9
Manganese	7439-96-5	0.136	U	0.937
Molybdenum	**7439-98-7**	**0.231**	B, FB-01, QB-01	**0.168**
Nickel	7440-02-0	0.308	U	0.631
Phosphorus	7723-14-0	282	U	985
Potassium	7440-09-7	12.7	B, U	29.9
Rubidium	7440-17-7	0.0109	U	0.0144
Selenium	7782-49-2	0.00146	U	0.00866
Sodium	7440-23-5	649	U	1580
Strontium	**7440-24-6**	**0.514**	QB-01	**0.514**
Thallium	7440-28-0	7.54E-5	U	3.96E-4
Thorium	7440-29-01	0.00192	U	0.00236
Uranium	7440-61-1	0.00144	U	0.0134
Vanadium	7440-62-2	0.00378	U	0.0388
Zinc	7440-66-6	7.94	U	77.0

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 #: 0000.00
REPORTED: 12/19/23 10:54
SUBMITTED: 12/11/23 to 12/13/23
AQS SITE CODE:
SITE CODE: Maui fires

Description: TetraTech Q9533927
Matrix: Air
Comments: MFK-AM01-121023-HM

Lab ID: 3121332-12
Sample Volume: 2056.907 m³
Filter ID:

Sampled: 12/10/23 23:59
Received: 12/13/23 13:27
Analysis Date: 12/15/23 01:36

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Aluminum	**7429-90-5**	**528**		**25.4**
Antimony	**7440-36-0**	**0.0546**	SL	**0.0349**
Arsenic	**7440-38-2**	**0.143**		**0.00755**
Barium	**7440-39-3**	**5.17**		**0.750**
Beryllium	**7440-41-7**	**0.0186**		**0.00263**
Cadmium	7440-43-9	0.00883	U	0.0862
Calcium	**7440-70-2**	**424**	LJ, QB-01	**231**
Chromium	**7440-47-3**	**1.97**		**1.61**
Cobalt	**7440-48-4**	**0.293**	QB-01	**0.0123**
Copper	**7440-50-8**	**22.7**		**2.37**
Iron	**7439-89-6**	**586**		**19.1**
Lead	**7439-92-1**	**0.697**		**0.218**
Magnesium	**7439-95-4**	**134**		**76.3**
Manganese	**7439-96-5**	**16.6**		**0.941**
Molybdenum	**7439-98-7**	**0.723**	B, QB-01	**0.168**
Nickel	7440-02-0	0.592	U	0.634
Phosphorus	7723-14-0	309	U	989
Potassium	**7440-09-7**	**65.5**	B	**30.1**
Rubidium	**7440-17-7**	**0.173**		**0.0145**
Selenium	**7782-49-2**	**0.137**		**0.00870**
Sodium	7440-23-5	1050	U	1580
Strontium	**7440-24-6**	**3.37**	QB-01	**0.516**
Thallium	**7440-28-0**	**0.00110**		**3.98E-4**
Thorium	**7440-29-01**	**0.0158**		**0.00237**
Uranium	7440-61-1	0.0123	U	0.0134
Vanadium	**7440-62-2**	**1.48**		**0.0389**
Zinc	7440-66-6	15.5	U	77.3

CERTIFICATE OF ANALYSIS

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

FILE #: 0000.00
REPORTED: 12/19/23 10:54
SUBMITTED: 12/11/23 to 12/13/23
AQS SITE CODE:
SITE CODE: Maui fires

Description: TetraTech Q9533925
Matrix: Air
Comments: MFK-AM02-121023-HM

Lab ID: 3121332-13
Sample Volume: 2040.36 m³
Filter ID:

Sampled: 12/10/23 23:59
Received: 12/13/23 13:27
Analysis Date: 12/15/23 02:06

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Aluminum	**7429-90-5**	**522**		**25.6**
Antimony	**7440-36-0**	**0.0710**	SL	**0.0352**
Arsenic	**7440-38-2**	**0.150**		**0.00762**
Barium	**7440-39-3**	**7.24**		**0.756**
Beryllium	**7440-41-7**	**0.0180**		**0.00265**
Cadmium	7440-43-9	0.0113	U	0.0869
Calcium	**7440-70-2**	**447**	LJ, QB-01	**233**
Chromium	**7440-47-3**	**2.01**		**1.62**
Cobalt	**7440-48-4**	**0.288**	QB-01	**0.0124**
Copper	**7440-50-8**	**12.7**		**2.39**
Iron	**7439-89-6**	**601**		**19.3**
Lead	**7439-92-1**	**0.344**		**0.220**
Magnesium	**7439-95-4**	**146**		**76.9**
Manganese	**7439-96-5**	**16.6**		**0.949**
Molybdenum	**7439-98-7**	**0.692**	B, QB-01	**0.170**
Nickel	**7440-02-0**	**0.732**		**0.639**
Phosphorus	7723-14-0	322	U	997
Potassium	**7440-09-7**	**92.9**	B	**30.3**
Rubidium	**7440-17-7**	**0.190**		**0.0146**
Selenium	**7782-49-2**	**0.138**		**0.00877**
Sodium	7440-23-5	1140	U	1590
Strontium	**7440-24-6**	**4.30**	QB-01	**0.520**
Thallium	**7440-28-0**	**0.00105**		**4.01E-4**
Thorium	**7440-29-01**	**0.0179**		**0.00239**
Uranium	7440-61-1	0.0121	U	0.0136
Vanadium	**7440-62-2**	**1.51**		**0.0392**
Zinc	7440-66-6	13.0	U	77.9

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 #: 0000.00
REPORTED: 12/19/23 10:54
SUBMITTED: 12/11/23 to 12/13/23
AQS SITE CODE:
SITE CODE: Maui fires

Description: TetraTech Q9533924
Matrix: Air
Comments: MFK-AM03-121023-HM

Lab ID: 3121332-14
Sample Volume: 1713.084 m³
Filter ID:

Sampled: 12/10/23 23:59
Received: 12/13/23 13:27
Analysis Date: 12/15/23 02:22

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Aluminum	**7429-90-5**	**416**		**30.5**
Antimony	**7440-36-0**	**0.0885**	SL	**0.0419**
Arsenic	**7440-38-2**	**0.124**		**0.00907**
Barium	**7440-39-3**	**7.17**		**0.900**
Beryllium	**7440-41-7**	**0.0195**		**0.00315**
Cadmium	7440-43-9	0.00875	U	0.104
Calcium	**7440-70-2**	**488**	LJ, QB-01	**277**
Chromium	**7440-47-3**	**2.21**		**1.93**
Cobalt	**7440-48-4**	**0.282**	QB-01	**0.0148**
Copper	**7440-50-8**	**27.4**		**2.85**
Iron	**7439-89-6**	**530**		**23.0**
Lead	**7439-92-1**	**0.366**		**0.262**
Magnesium	**7439-95-4**	**168**		**91.6**
Manganese	**7439-96-5**	**16.5**		**1.13**
Molybdenum	**7439-98-7**	**0.819**	B, QB-01	**0.202**
Nickel	7440-02-0	0.720	U	0.761
Phosphorus	7723-14-0	373	U	1190
Potassium	**7440-09-7**	**83.5**	B	**36.1**
Rubidium	**7440-17-7**	**0.185**		**0.0174**
Selenium	**7782-49-2**	**0.141**		**0.0104**
Sodium	7440-23-5	1380	U	1900
Strontium	**7440-24-6**	**4.00**	QB-01	**0.619**
Thallium	**7440-28-0**	**0.00103**		**4.78E-4**
Thorium	**7440-29-01**	**0.0166**		**0.00285**
Uranium	7440-61-1	0.0118	U	0.0161
Vanadium	**7440-62-2**	**1.34**		**0.0467**
Zinc	7440-66-6	13.2	U	92.8

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 #: 0000.00
REPORTED: 12/19/23 10:54
SUBMITTED: 12/11/23 to 12/13/23
AQS SITE CODE:
SITE CODE: Maui fires

Description: TetraTech Q9533929 FB
Matrix: Air
Lab ID: 3121332-15
Sample Volume: 2056.907 m³
Filter ID:
Sampled: 12/10/23 00:00
Received: 12/13/23 13:27
Analysis Date: 12/15/23 02:36

Comments: MFK-FB01-121023-HM Field Blank

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Aluminum	7429-90-5	11.5	U	25.4
Antimony	7440-36-0	0.00721	SL, U	0.0349
Arsenic	7440-38-2	0.00711	U	0.00755
Barium	**7440-39-3**	**1.10**	FB-01	**0.750**
Beryllium	7440-41-7	9.75E-4	U	0.00263
Cadmium	7440-43-9	0.0297	U	0.0862
Calcium	**7440-70-2**	**250**	FB-01, LJ, QB-01	**231**
Chromium	**7440-47-3**	**3.16**	FB-01	**1.61**
Cobalt	**7440-48-4**	**0.0617**	FB-01, QB-01	**0.0123**
Copper	7440-50-8	1.24	U	2.37
Iron	7439-89-6	13.7	U	19.1
Lead	7439-92-1	0.111	U	0.218
Magnesium	7439-95-4	38.6	U	76.3
Manganese	7439-96-5	0.407	U	0.941
Molybdenum	**7439-98-7**	**1.44**	B, FB-01, QB-01	**0.168**
Nickel	7440-02-0	0.391	U	0.634
Phosphorus	7723-14-0	286	U	989
Potassium	7440-09-7	11.1	B, U	30.1
Rubidium	7440-17-7	0.0129	U	0.0145
Selenium	7782-49-2	0.00512	U	0.00870
Sodium	7440-23-5	657	U	1580
Strontium	**7440-24-6**	**0.548**	FB-01, QB-01	**0.516**
Thallium	7440-28-0	8.27E-5	U	3.98E-4
Thorium	7440-29-01	0.00234	U	0.00237
Uranium	7440-61-1	0.00174	U	0.0134
Vanadium	7440-62-2	0.0132	U	0.0389
Zinc	7440-66-6	9.52	U	77.3

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AQS SITE CODE:
SITE CODE: Maui 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 2312039 - B3L1203										
Calibration Blank (2312039-CCB1)				Prepared & Analyzed: 12/13/23						
Aluminum	25.4		ng/l							
Antimony	1.30		ng/l							
Arsenic	-1.44		ng/l							U
Barium	-1.73		ng/l							U
Beryllium	1.11		ng/l							
Cadmium	1.09		ng/l							
Calcium	1190		ng/l							
Chromium	6.40		ng/l							
Cobalt	0.872		ng/l							
Copper	171		ng/l							
Iron	117		ng/l							
Lead	8.89		ng/l							
Magnesium	61.3		ng/l							
Manganese	18.9		ng/l							
Molybdenum	26.2		ng/l							
Nickel	1.67		ng/l							
Phosphorus	-373		ng/l							U
Potassium	694		ng/l							
Rubidium	1.66		ng/l							
Selenium	6.80		ng/l							
Sodium	18.6		ng/l							
Strontium	0.978		ng/l							
Thallium	0.600		ng/l							
Thorium	0.426		ng/l							
Uranium	0.00938		ng/l							
Vanadium	66.0		ng/l							
Zinc	-23.7		ng/l							U
Calibration Blank (2312039-CCB2)				Prepared & Analyzed: 12/13/23						
Aluminum	-57.6		ng/l							U
Antimony	0.943		ng/l							
Arsenic	-3.91		ng/l							U
Barium	-3.39		ng/l							U
Beryllium	0.580		ng/l							LJ, QX
Cadmium	0.559		ng/l							
Calcium	960		ng/l							
Chromium	5.15		ng/l							
Cobalt	0.778		ng/l							
Copper	59.8		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 2312039 - B3L1203										
Calibration Blank (2312039-CCB2) Contin				Prepared & Analyzed: 12/13/23						
Iron	-10.2		ng/l							U
Lead	4.27		ng/l							
Magnesium	-12.6		ng/l							U
Manganese	10.5		ng/l							
Molybdenum	10.0		ng/l							
Nickel	2.29		ng/l							
Phosphorus	-455		ng/l							U
Potassium	67.4		ng/l							
Rubidium	0.856		ng/l							
Selenium	4.40		ng/l							
Sodium	-288		ng/l							U
Strontium	2.23		ng/l							
Thallium	0.468		ng/l							
Thorium	0.305		ng/l							
Uranium	0.00576		ng/l							
Vanadium	31.9		ng/l							
Zinc	-35.0		ng/l							U
Calibration Blank (2312039-CCB3)				Prepared & Analyzed: 12/13/23						
Aluminum	-21.7		ng/l							U
Antimony	1.02		ng/l							
Arsenic	-1.85		ng/l							U
Barium	-4.22		ng/l							U
Beryllium	-0.196		ng/l							U
Cadmium	0.261		ng/l							
Calcium	622		ng/l							
Chromium	0.812		ng/l							
Cobalt	0.202		ng/l							
Copper	36.0		ng/l							
Iron	22.7		ng/l							
Lead	2.44		ng/l							
Magnesium	-14.0		ng/l							U
Manganese	4.54		ng/l							
Molybdenum	9.03		ng/l							
Nickel	2.52		ng/l							
Phosphorus	-831		ng/l							U
Potassium	-626		ng/l							U
Rubidium	0.575		ng/l							
Selenium	15.1		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 2312039 - B3L1203										
Calibration Blank (2312039-CCB3) Contin				Prepared & Analyzed: 12/13/23						
Sodium	-255		ng/l							U
Strontium	0.470		ng/l							
Thallium	0.374		ng/l							
Thorium	0.255		ng/l							
Uranium	0.00335		ng/l							
Vanadium	2.19		ng/l							
Zinc	-45.0		ng/l							U
Calibration Blank (2312039-CCB4)				Prepared & Analyzed: 12/13/23						
Aluminum	-65.9		ng/l							U
Antimony	0.696		ng/l							
Arsenic	-2.29		ng/l							U
Barium	-5.77		ng/l							U
Beryllium	-0.0548		ng/l							LJ, QX, U
Cadmium	0.189		ng/l							
Calcium	985		ng/l							
Chromium	1.11		ng/l							
Cobalt	0.302		ng/l							
Copper	25.5		ng/l							
Iron	-32.4		ng/l							U
Lead	2.01		ng/l							
Magnesium	-47.8		ng/l							U
Manganese	3.62		ng/l							
Molybdenum	8.33		ng/l							
Nickel	3.02		ng/l							
Phosphorus	-513		ng/l							U
Potassium	-432		ng/l							U
Rubidium	0.791		ng/l							
Selenium	-0.974		ng/l							U
Sodium	-292		ng/l							U
Strontium	1.09		ng/l							
Thallium	0.336		ng/l							
Thorium	0.384		ng/l							
Uranium	0.00637		ng/l							
Vanadium	3.02		ng/l							
Zinc	-64.3		ng/l							U
Calibration Check (2312039-CCV1)				Prepared & Analyzed: 12/13/23						
Aluminum	1.51E6		ng/l	1.5000E6		100	90-110			
Antimony	20200		ng/l	20000		101	90-110			

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Inorganics by Compendium Method IO-3.5 - Quality Control

Batch 2312039 - B3L1203

Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Calibration Check (2312039-CCV1) Contin				Prepared & Analyzed: 12/13/23						
Arsenic	19700		ng/l	20000		98.6	90-110			
Barium	197000		ng/l	200000		98.7	90-110			
Beryllium	4910		ng/l	5000.0		98.3	90-110			
Cadmium	20100		ng/l	20000		101	90-110			
Calcium	2.49E7		ng/l	2.5000E7		99.8	90-110			
Chromium	234000		ng/l	240000		97.4	90-110			
Cobalt	49300		ng/l	50000		98.6	90-110			
Copper	1.98E6		ng/l	2.0000E6		98.8	90-110			
Iron	2.47E6		ng/l	2.5000E6		98.8	90-110			
Lead	198000		ng/l	200000		98.8	90-110			
Magnesium	1.01E6		ng/l	1.0000E6		101	90-110			
Manganese	492000		ng/l	500000		98.4	90-110			
Molybdenum	49100		ng/l	50000		98.1	90-110			
Nickel	119000		ng/l	120000		99.6	90-110			
Phosphorus	201000		ng/l	200000		101	90-110			
Potassium	2.59E6		ng/l	2.5000E6		104	90-110			
Rubidium	9990		ng/l	10000		99.9	90-110			
Selenium	19900		ng/l	20000		99.5	90-110			
Sodium	2.48E6		ng/l	2.5000E6		99.2	90-110			
Strontium	49800		ng/l	50000		99.5	90-110			
Thallium	484		ng/l	500.00		96.9	90-110			
Thorium	501		ng/l	500.00		100	90-110			
Uranium	492		ng/l	500.00		98.4	90-110			
Vanadium	19700		ng/l	20000		98.4	90-110			
Zinc	521000		ng/l	500000		104	90-110			
Calibration Check (2312039-CCV2)				Prepared & Analyzed: 12/13/23						
Aluminum	1.45E6		ng/l	1.5000E6		96.8	90-110			
Antimony	20000		ng/l	20000		100	90-110			
Arsenic	19500		ng/l	20000		97.7	90-110			
Barium	202000		ng/l	200000		101	90-110			
Beryllium	5030		ng/l	5000.0		101	90-110			
Cadmium	19900		ng/l	20000		99.5	90-110			
Calcium	2.43E7		ng/l	2.5000E7		97.3	90-110			
Chromium	233000		ng/l	240000		97.0	90-110			
Cobalt	48300		ng/l	50000		96.6	90-110			
Copper	1.95E6		ng/l	2.0000E6		97.6	90-110			
Iron	2.42E6		ng/l	2.5000E6		96.9	90-110			
Lead	195000		ng/l	200000		97.6	90-110			

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AQS SITE CODE:
SITE CODE: Maui 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 2312039 - B3L1203										
Calibration Check (2312039-CCV2) Contin					Prepared & Analyzed: 12/13/23					
Magnesium	974000		ng/l	1.0000E6		97.4	90-110			
Manganese	483000		ng/l	500000		96.6	90-110			
Molybdenum	49400		ng/l	50000		98.8	90-110			
Nickel	117000		ng/l	120000		97.8	90-110			
Phosphorus	183000		ng/l	200000		91.6	90-110			
Potassium	2.50E6		ng/l	2.5000E6		99.9	90-110			
Rubidium	9970		ng/l	10000		99.7	90-110			
Selenium	19900		ng/l	20000		99.5	90-110			
Sodium	2.40E6		ng/l	2.5000E6		96.2	90-110			
Strontium	49500		ng/l	50000		99.0	90-110			
Thallium	479		ng/l	500.00		95.8	90-110			
Thorium	488		ng/l	500.00		97.6	90-110			
Uranium	482		ng/l	500.00		96.3	90-110			
Vanadium	19600		ng/l	20000		97.9	90-110			
Zinc	516000		ng/l	500000		103	90-110			
Calibration Check (2312039-CCV3)					Prepared & Analyzed: 12/13/23					
Aluminum	1.45E6		ng/l	1.5000E6		97.0	90-110			
Antimony	20200		ng/l	20000		101	90-110			
Arsenic	19700		ng/l	20000		98.4	90-110			
Barium	204000		ng/l	200000		102	90-110			
Beryllium	5150		ng/l	5000.0		103	90-110			
Cadmium	20200		ng/l	20000		101	90-110			
Calcium	2.45E7		ng/l	2.5000E7		98.2	90-110			
Chromium	239000		ng/l	240000		99.6	90-110			
Cobalt	48800		ng/l	50000		97.6	90-110			
Copper	1.98E6		ng/l	2.0000E6		99.2	90-110			
Iron	2.45E6		ng/l	2.5000E6		97.9	90-110			
Lead	199000		ng/l	200000		99.7	90-110			
Magnesium	976000		ng/l	1.0000E6		97.6	90-110			
Manganese	489000		ng/l	500000		97.9	90-110			
Molybdenum	50500		ng/l	50000		101	90-110			
Nickel	119000		ng/l	120000		99.1	90-110			
Phosphorus	190000		ng/l	200000		94.8	90-110			
Potassium	2.51E6		ng/l	2.5000E6		100	90-110			
Rubidium	10000		ng/l	10000		100	90-110			
Selenium	20200		ng/l	20000		101	90-110			
Sodium	2.41E6		ng/l	2.5000E6		96.6	90-110			
Strontium	50100		ng/l	50000		100	90-110			

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AQS SITE CODE:
SITE CODE: Maui 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 2312039 - B3L1203										
Calibration Check (2312039-CCV3) Contin					Prepared & Analyzed: 12/13/23					
Thallium	483		ng/l	500.00		96.6	90-110			
Thorium	496		ng/l	500.00		99.1	90-110			
Uranium	493		ng/l	500.00		98.5	90-110			
Vanadium	20000		ng/l	20000		99.9	90-110			
Zinc	525000		ng/l	500000		105	90-110			
Calibration Check (2312039-CCV4)					Prepared & Analyzed: 12/13/23					
Aluminum	1.47E6		ng/l	1.5000E6		97.8	90-110			
Antimony	20500		ng/l	20000		102	90-110			
Arsenic	20000		ng/l	20000		100	90-110			
Barium	208000		ng/l	200000		104	90-110			
Beryllium	5280		ng/l	5000.0		106	90-110			
Cadmium	20500		ng/l	20000		102	90-110			
Calcium	2.47E7		ng/l	2.5000E7		99.0	90-110			
Chromium	239000		ng/l	240000		99.7	90-110			
Cobalt	49400		ng/l	50000		98.9	90-110			
Copper	2.01E6		ng/l	2.0000E6		101	90-110			
Iron	2.47E6		ng/l	2.5000E6		98.7	90-110			
Lead	202000		ng/l	200000		101	90-110			
Magnesium	979000		ng/l	1.0000E6		97.9	90-110			
Manganese	491000		ng/l	500000		98.1	90-110			
Molybdenum	50900		ng/l	50000		102	90-110			
Nickel	121000		ng/l	120000		100	90-110			
Phosphorus	193000		ng/l	200000		96.4	90-110			
Potassium	2.51E6		ng/l	2.5000E6		100	90-110			
Rubidium	10100		ng/l	10000		101	90-110			
Selenium	20200		ng/l	20000		101	90-110			
Sodium	2.42E6		ng/l	2.5000E6		97.0	90-110			
Strontium	50600		ng/l	50000		101	90-110			
Thallium	489		ng/l	500.00		97.8	90-110			
Thorium	505		ng/l	500.00		101	90-110			
Uranium	496		ng/l	500.00		99.1	90-110			
Vanadium	19900		ng/l	20000		99.6	90-110			
Zinc	530000		ng/l	500000		106	90-110			
High Cal Check (2312039-HCV1)					Prepared & Analyzed: 12/13/23					
Aluminum	2.91E6		ng/l	3.0000E6		97.0	95-105			
Antimony	39700		ng/l	40000		99.2	95-105			
Arsenic	39200		ng/l	40000		98.1	95-105			
Barium	399000		ng/l	400000		99.8	95-105			

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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 2312039 - B3L1203										
High Cal Check (2312039-HCV1) Continue					Prepared & Analyzed: 12/13/23					
Beryllium	9560		ng/l	10000		95.6	95-105			
Cadmium	39300		ng/l	40000		98.2	95-105			
Calcium	4.96E7		ng/l	5.0000E7		99.1	95-105			
Chromium	471000		ng/l	480000		98.2	95-105			
Cobalt	97400		ng/l	100000		97.4	95-105			
Copper	3.88E6		ng/l	4.0000E6		97.0	95-105			
Iron	4.91E6		ng/l	5.0000E6		98.2	95-105			
Lead	399000		ng/l	400000		99.8	95-105			
Magnesium	1.94E6		ng/l	2.0000E6		96.9	95-105			
Manganese	981000		ng/l	1.0000E6		98.1	95-105			
Molybdenum	98300		ng/l	100000		98.3	95-105			
Nickel	233000		ng/l	240000		97.0	95-105			
Phosphorus	386000		ng/l	400000		96.4	95-105			
Potassium	4.85E6		ng/l	5.0000E6		97.0	95-105			
Rubidium	19900		ng/l	20000		99.5	95-105			
Selenium	39700		ng/l	40000		99.3	95-105			
Sodium	4.88E6		ng/l	5.0000E6		97.5	95-105			
Strontium	99900		ng/l	100000		99.9	95-105			
Thallium	1000		ng/l	1000.0		100	95-105			
Thorium	1000		ng/l	1000.0		100	95-105			
Uranium	1000		ng/l	1000.0		100	95-105			
Vanadium	39500		ng/l	40000		98.7	95-105			
Zinc	966000		ng/l	1.0000E6		96.6	95-105			
Initial Cal Blank (2312039-ICB1)					Prepared & Analyzed: 12/13/23					
Aluminum	-33.9		ng/l							U
Antimony	5.72		ng/l							
Arsenic	-4.22		ng/l							U
Barium	-5.71		ng/l							U
Beryllium	0.926		ng/l							
Cadmium	0.334		ng/l							
Calcium	967		ng/l							
Chromium	2.07		ng/l							
Cobalt	0.293		ng/l							
Copper	58.2		ng/l							
Iron	-70.6		ng/l							U
Lead	4.98		ng/l							
Magnesium	-8.64		ng/l							U
Manganese	7.96		ng/l							

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 #: 0000.00
REPORTED: 12/19/23 10:54
SUBMITTED: 12/11/23 to 12/13/23
AQS SITE CODE:
SITE CODE: Maui 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 2312039 - B3L1203										
Initial Cal Blank (2312039-ICB1) Continu				Prepared & Analyzed: 12/13/23						
Molybdenum	14.5		ng/l							
Nickel	-2.26		ng/l							U
Phosphorus	-347		ng/l							U
Potassium	274		ng/l							
Rubidium	0.773		ng/l							
Selenium	20.9		ng/l							
Sodium	-230		ng/l							U
Strontium	0.119		ng/l							
Thallium	0.445		ng/l							
Thorium	0.576		ng/l							
Uranium	0.0124		ng/l							
Vanadium	71.4		ng/l							
Zinc	-25.0		ng/l							U
Initial Cal Check (2312039-ICV1)				Prepared & Analyzed: 12/13/23						
Aluminum	1.43E6		ng/l	1.5000E6		95.6	90-110			
Antimony	19400		ng/l	20000		97.2	90-110			
Arsenic	19500		ng/l	20000		97.4	90-110			
Barium	196000		ng/l	200000		97.8	90-110			
Beryllium	4970		ng/l	5000.0		99.3	90-110			
Cadmium	20300		ng/l	20000		101	90-110			
Calcium	2.41E7		ng/l	2.5000E7		96.4	90-110			
Chromium	231000		ng/l	240000		96.4	90-110			
Cobalt	48900		ng/l	50000		97.9	90-110			
Copper	1.98E6		ng/l	2.0000E6		98.8	90-110			
Iron	2.45E6		ng/l	2.5000E6		97.8	90-110			
Lead	195000		ng/l	200000		97.6	90-110			
Magnesium	963000		ng/l	1.0000E6		96.3	90-110			
Manganese	485000		ng/l	500000		97.1	90-110			
Molybdenum	48800		ng/l	50000		97.7	90-110			
Nickel	118000		ng/l	120000		98.1	90-110			
Phosphorus	191000		ng/l	200000		95.3	90-110			
Potassium	2.54E6		ng/l	2.5000E6		102	90-110			
Rubidium	9650		ng/l	10000		96.5	90-110			
Selenium	20500		ng/l	20000		102	90-110			
Sodium	2.40E6		ng/l	2.5000E6		96.0	90-110			
Strontium	49500		ng/l	50000		99.1	90-110			
Thallium	480		ng/l	500.00		96.0	90-110			
Thorium	487		ng/l	500.00		97.5	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 2312039 - B3L1203										
Initial Cal Check (2312039-ICV1) Continu				Prepared & Analyzed: 12/13/23						
Uranium	483		ng/l	500.00		96.7	90-110			
Vanadium	19700		ng/l	20000		98.4	90-110			
Zinc	522000		ng/l	500000		104	90-110			
Interference Check A (2312039-IFA1)				Prepared & Analyzed: 12/13/23						
Aluminum	1.45E7		ng/l	1.5000E7		96.5	80-120			
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
Calcium	9.27E7		ng/l	1.0040E8		92.4	80-120			
Chromium	0.00		ng/l				80-120			U
Cobalt	0.00		ng/l				80-120			U
Copper	0.00		ng/l				80-120			U
Iron	1.45E7		ng/l	1.5000E7		96.4	80-120			
Lead	0.00		ng/l				80-120			U
Magnesium	1.50E7		ng/l	1.5000E7		99.8	80-120			
Manganese	0.00		ng/l				80-120			U
Molybdenum	293000		ng/l	300000		97.7	80-120			
Nickel	0.00		ng/l				80-120			U
Phosphorus	1.54E7		ng/l	1.5000E7		102	80-120			
Potassium	1.49E7		ng/l	1.5000E7		99.2	80-120			
Rubidium	0.00		ng/l				80-120			U
Selenium	0.00		ng/l				80-120			U
Sodium	1.50E7		ng/l	1.5000E7		99.7	80-120			
Strontium	0.00		ng/l				80-120			U
Thallium	0.00		ng/l				80-120			U
Thorium	0.00		ng/l				80-120			U
Uranium	0.00		ng/l				80-120			U
Vanadium	0.00		ng/l				80-120			U
Zinc	0.00		ng/l				80-120			U
Interference Check B (2312039-IFB1)				Prepared & Analyzed: 12/13/23						
Aluminum	1.61E7		ng/l	1.6500E7		97.7	80-120			
Antimony	20000		ng/l	20000		100	80-120			
Arsenic	20200		ng/l	20000		101	80-120			
Barium	199000		ng/l	200000		99.4	80-120			
Beryllium	4790		ng/l	5000.0		95.9	80-120			
Cadmium	19300		ng/l	20000		96.7	80-120			

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2312039 - B3L1203										
Interference Check B (2312039-IFB1) Co					Prepared & Analyzed: 12/13/23					
Calcium	1.16E8		ng/l	1.2540E8		92.6	80-120			
Chromium	226000		ng/l	240000		94.3	80-120			
Cobalt	48500		ng/l	50000		97.1	80-120			
Copper	1.85E6		ng/l	2.0000E6		92.4	80-120			
Iron	1.69E7		ng/l	1.7500E7		96.4	80-120			
Lead	203000		ng/l	200000		102	80-120			
Magnesium	1.60E7		ng/l	1.6000E7		99.7	80-120			
Manganese	504000		ng/l	500000		101	80-120			
Molybdenum	339000		ng/l	350000		96.9	80-120			
Nickel	114000		ng/l	120000		95.4	80-120			
Phosphorus	1.57E7		ng/l	1.5200E7		103	80-120			
Potassium	1.77E7		ng/l	1.7500E7		101	80-120			
Rubidium	10100		ng/l	10000		101	80-120			
Selenium	19000		ng/l	20000		94.8	80-120			
Sodium	1.78E7		ng/l	1.7500E7		102	80-120			
Strontium	50200		ng/l	50000		100	80-120			
Thallium	506		ng/l	500.00		101	80-120			
Thorium	539		ng/l	500.00		108	80-120			
Uranium	534		ng/l	500.00		107	80-120			
Vanadium	19100		ng/l	20000		95.6	80-120			
Zinc	473000		ng/l	500000		94.7	80-120			
Serial Dilution (2312039-SRD1)		**Source: 3121111-02**			Prepared: 12/12/23 Analyzed: 12/13/23					
Aluminum	159	133	ng/m³ Air		159			0.182	10	
Antimony	ND	0.182	ng/m³ Air		ND				10	SL, U
Arsenic	0.167	0.0395	ng/m³ Air		0.176			4.76	10	
Barium	ND	3.92	ng/m³ Air		ND				10	U
Beryllium	ND	0.0137	ng/m³ Air		ND				10	U
Cadmium	ND	0.450	ng/m³ Air		ND				10	U
Calcium	ND	1210	ng/m³ Air		ND				10	LJ, QB-01, U
Chromium	ND	8.39	ng/m³ Air		ND				10	U
Cobalt	0.115	0.0645	ng/m³ Air		0.117			1.93	10	QB-01
Copper	18.5	12.4	ng/m³ Air		18.5			0.259	10	
Iron	184	100	ng/m³ Air		185			0.398	10	GC-BS
Lead	ND	1.14	ng/m³ Air		ND				10	U
Magnesium	ND	398	ng/m³ Air		ND				10	U
Manganese	5.10	4.92	ng/m³ Air		5.13			0.542	10	QB-01
Molybdenum	0.891	0.880	ng/m³ Air		0.890			0.109	10	QB-01
Nickel	ND	3.31	ng/m³ Air		ND				10	U

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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 2312039 - B3L1203										
Serial Dilution (2312039-SRD1) Continue Source: 3121111-02 Prepared: 12/12/23 Analyzed: 12/13/23										
Phosphorus	ND	5170	ng/m³ Air		ND				10	GC-BS, U
Potassium	ND	157	ng/m³ Air		ND				10	U
Rubidium	0.110	0.0756	ng/m³ Air		0.112			1.84	10	
Selenium	0.0986	0.0455	ng/m³ Air		0.104			5.10	10	
Sodium	ND	8260	ng/m³ Air		ND				10	GC-BS, U
Strontium	ND	2.69	ng/m³ Air		ND				10	QB-01, U
Thallium	ND	0.00208	ng/m³ Air		ND				10	U
Thorium	ND	0.0124	ng/m³ Air		ND				10	U
Uranium	ND	0.0702	ng/m³ Air		ND				10	U
Vanadium	0.722	0.203	ng/m³ Air		0.660			9.05	10	QB-01
Zinc	ND	404	ng/m³ Air		ND				10	U
Batch 2312044 - B3L1203										
Calibration Blank (2312044-CCB1) Prepared & Analyzed: 12/14/23										
Aluminum	125		ng/l							
Antimony	1.21		ng/l							
Arsenic	6.90		ng/l							
Barium	0.658		ng/l							
Beryllium	0.347		ng/l							
Cadmium	0.268		ng/l							
Calcium	294		ng/l							
Chromium	3.74		ng/l							
Cobalt	0.565		ng/l							
Copper	252		ng/l							
Iron	12.8		ng/l							
Lead	5.89		ng/l							
Magnesium	57.2		ng/l							
Manganese	9.93		ng/l							
Molybdenum	16.7		ng/l							
Nickel	30.3		ng/l							
Phosphorus	227		ng/l							
Potassium	1970		ng/l							
Rubidium	1.31		ng/l							
Selenium	6.84		ng/l							
Sodium	118		ng/l							
Strontium	-0.106		ng/l							U
Thallium	0.632		ng/l							
Thorium	0.212		ng/l							
Uranium	0.00146		ng/l							

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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 2312044 - B3L1203										
Calibration Blank (2312044-CCB1) Contin				Prepared & Analyzed: 12/14/23						
Vanadium	-88.1		ng/l							U
Zinc	-215		ng/l							U
Calibration Blank (2312044-CCB2)				Prepared & Analyzed: 12/14/23						
Aluminum	28.6		ng/l							
Antimony	0.958		ng/l							
Arsenic	3.58		ng/l							
Barium	0.565		ng/l							
Beryllium	0.395		ng/l							
Cadmium	0.145		ng/l							
Calcium	471		ng/l							
Chromium	5.52		ng/l							
Cobalt	0.567		ng/l							
Copper	98.6		ng/l							
Iron	161		ng/l							
Lead	3.82		ng/l							
Magnesium	5.49		ng/l							
Manganese	8.99		ng/l							
Molybdenum	8.90		ng/l							
Nickel	39.6		ng/l							
Phosphorus	598		ng/l							
Potassium	552		ng/l							
Rubidium	1.25		ng/l							
Selenium	1.74		ng/l							
Sodium	-175		ng/l							U
Strontium	-0.333		ng/l							U
Thallium	0.764		ng/l							
Thorium	0.530		ng/l							
Uranium	0.0223		ng/l							
Vanadium	-92.8		ng/l							U
Zinc	-229		ng/l							U
Calibration Blank (2312044-CCB3)				Prepared: 12/14/23 Analyzed: 12/15/23						
Aluminum	113		ng/l							
Antimony	1.22		ng/l							
Arsenic	3.82		ng/l							
Barium	2.58		ng/l							
Beryllium	0.113		ng/l							
Cadmium	0.0243		ng/l							
Calcium	159		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 2312044 - B3L1203										
Calibration Blank (2312044-CCB3) Contin				Prepared: 12/14/23 Analyzed: 12/15/23						
Chromium	8.72		ng/l							
Cobalt	1.10		ng/l							
Copper	94.3		ng/l							
Iron	78.3		ng/l							
Lead	4.12		ng/l							
Magnesium	21.9		ng/l							
Manganese	14.8		ng/l							
Molybdenum	6.10		ng/l							
Nickel	42.1		ng/l							
Phosphorus	588		ng/l							
Potassium	964		ng/l							
Rubidium	1.07		ng/l							
Selenium	7.11		ng/l							
Sodium	110		ng/l							
Strontium	0.747		ng/l							
Thallium	0.433		ng/l							
Thorium	0.133		ng/l							
Uranium	-0.0128		ng/l							U
Vanadium	-94.8		ng/l							U
Zinc	-203		ng/l							U
Calibration Blank (2312044-CCB4)				Prepared: 12/14/23 Analyzed: 12/15/23						
Aluminum	91.9		ng/l							
Antimony	0.652		ng/l							
Arsenic	5.24		ng/l							
Barium	0.957		ng/l							
Beryllium	0.201		ng/l							
Cadmium	-0.0525		ng/l							U
Calcium	-200		ng/l							U
Chromium	7.02		ng/l							
Cobalt	0.754		ng/l							
Copper	73.9		ng/l							
Iron	61.0		ng/l							
Lead	3.30		ng/l							
Magnesium	19.8		ng/l							
Manganese	11.1		ng/l							
Molybdenum	6.84		ng/l							
Nickel	39.8		ng/l							
Phosphorus	-289		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 2312044 - B3L1203										
Calibration Blank (2312044-CCB4) Contin				Prepared: 12/14/23 Analyzed: 12/15/23						
Potassium	1150		ng/l							
Rubidium	0.262		ng/l							
Selenium	8.49		ng/l							
Sodium	106		ng/l							
Strontium	1.09		ng/l							
Thallium	0.382		ng/l							
Thorium	0.117		ng/l							
Uranium	0.00185		ng/l							
Vanadium	-95.5		ng/l							U
Zinc	-226		ng/l							U
Calibration Check (2312044-CCV1)				Prepared & Analyzed: 12/14/23						
Aluminum	1.54E6		ng/l	1.5000E6		103	90-110			
Antimony	20300		ng/l	20000		102	90-110			
Arsenic	20100		ng/l	20000		100	90-110			
Barium	202000		ng/l	200000		101	90-110			
Beryllium	4790		ng/l	5000.0		95.8	90-110			
Cadmium	20500		ng/l	20000		103	90-110			
Calcium	2.50E7		ng/l	2.5000E7		100	90-110			
Chromium	238000		ng/l	240000		99.2	90-110			
Cobalt	51300		ng/l	50000		103	90-110			
Copper	2.04E6		ng/l	2.0000E6		102	90-110			
Iron	2.56E6		ng/l	2.5000E6		102	90-110			
Lead	198000		ng/l	200000		99.0	90-110			
Magnesium	1.05E6		ng/l	1.0000E6		105	90-110			
Manganese	494000		ng/l	500000		98.8	90-110			
Molybdenum	51000		ng/l	50000		102	90-110			
Nickel	123000		ng/l	120000		102	90-110			
Phosphorus	207000		ng/l	200000		103	90-110			
Potassium	2.64E6		ng/l	2.5000E6		106	90-110			
Rubidium	10100		ng/l	10000		101	90-110			
Selenium	20000		ng/l	20000		100	90-110			
Sodium	2.60E6		ng/l	2.5000E6		104	90-110			
Strontium	49900		ng/l	50000		99.9	90-110			
Thallium	485		ng/l	500.00		97.0	90-110			
Thorium	503		ng/l	500.00		101	90-110			
Uranium	492		ng/l	500.00		98.4	90-110			
Vanadium	19600		ng/l	20000		97.9	90-110			
Zinc	531000		ng/l	500000		106	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 #: 0000.00
REPORTED: 12/19/23 10:54
SUBMITTED: 12/11/23 to 12/13/23
AQS SITE CODE:
SITE CODE: Maui 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 2312044 - B3L1203										
Calibration Check (2312044-CCV2)				Prepared & Analyzed: 12/14/23						
Aluminum	1.52E6		ng/l	1.5000E6		101	90-110			
Antimony	20400		ng/l	20000		102	90-110			
Arsenic	20300		ng/l	20000		101	90-110			
Barium	201000		ng/l	200000		101	90-110			
Beryllium	5520		ng/l	5000.0		110	90-110			
Cadmium	20800		ng/l	20000		104	90-110			
Calcium	2.51E7		ng/l	2.5000E7		100	90-110			
Chromium	240000		ng/l	240000		100	90-110			
Cobalt	51000		ng/l	50000		102	90-110			
Copper	2.05E6		ng/l	2.0000E6		103	90-110			
Iron	2.55E6		ng/l	2.5000E6		102	90-110			
Lead	201000		ng/l	200000		100	90-110			
Magnesium	1.04E6		ng/l	1.0000E6		104	90-110			
Manganese	496000		ng/l	500000		99.1	90-110			
Molybdenum	51600		ng/l	50000		103	90-110			
Nickel	123000		ng/l	120000		103	90-110			
Phosphorus	208000		ng/l	200000		104	90-110			
Potassium	2.63E6		ng/l	2.5000E6		105	90-110			
Rubidium	10100		ng/l	10000		101	90-110			
Selenium	20100		ng/l	20000		101	90-110			
Sodium	2.60E6		ng/l	2.5000E6		104	90-110			
Strontium	49700		ng/l	50000		99.3	90-110			
Thallium	491		ng/l	500.00		98.2	90-110			
Thorium	504		ng/l	500.00		101	90-110			
Uranium	496		ng/l	500.00		99.1	90-110			
Vanadium	19900		ng/l	20000		99.5	90-110			
Zinc	534000		ng/l	500000		107	90-110			
Calibration Check (2312044-CCV3)				Prepared: 12/14/23 Analyzed: 12/15/23						
Aluminum	1.48E6		ng/l	1.5000E6		99.0	90-110			
Antimony	20200		ng/l	20000		101	90-110			
Arsenic	19900		ng/l	20000		99.6	90-110			
Barium	198000		ng/l	200000		99.2	90-110			
Beryllium	5330		ng/l	5000.0		107	90-110			
Cadmium	20500		ng/l	20000		103	90-110			
Calcium	2.47E7		ng/l	2.5000E7		98.8	90-110			
Chromium	241000		ng/l	240000		101	90-110			
Cobalt	50500		ng/l	50000		101	90-110			
Copper	2.06E6		ng/l	2.0000E6		103	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 2312044 - B3L1203										
Calibration Check (2312044-CCV3) Contin					Prepared: 12/14/23 Analyzed: 12/15/23					
Iron	2.52E6		ng/l	2.5000E6		101	90-110			
Lead	198000		ng/l	200000		99.2	90-110			
Magnesium	1.03E6		ng/l	1.0000E6		103	90-110			
Manganese	494000		ng/l	500000		98.8	90-110			
Molybdenum	51000		ng/l	50000		102	90-110			
Nickel	123000		ng/l	120000		103	90-110			
Phosphorus	205000		ng/l	200000		102	90-110			
Potassium	2.62E6		ng/l	2.5000E6		105	90-110			
Rubidium	10000		ng/l	10000		100	90-110			
Selenium	20000		ng/l	20000		99.8	90-110			
Sodium	2.61E6		ng/l	2.5000E6		105	90-110			
Strontium	48900		ng/l	50000		97.8	90-110			
Thallium	480		ng/l	500.00		95.9	90-110			
Thorium	491		ng/l	500.00		98.2	90-110			
Uranium	478		ng/l	500.00		95.7	90-110			
Vanadium	19800		ng/l	20000		99.1	90-110			
Zinc	528000		ng/l	500000		106	90-110			
Calibration Check (2312044-CCV4)					Prepared: 12/14/23 Analyzed: 12/15/23					
Aluminum	1.50E6		ng/l	1.5000E6		100	90-110			
Antimony	20400		ng/l	20000		102	90-110			
Arsenic	20200		ng/l	20000		101	90-110			
Barium	198000		ng/l	200000		98.9	90-110			
Beryllium	5320		ng/l	5000.0		106	90-110			
Cadmium	20500		ng/l	20000		102	90-110			
Calcium	2.49E7		ng/l	2.5000E7		99.5	90-110			
Chromium	242000		ng/l	240000		101	90-110			
Cobalt	50900		ng/l	50000		102	90-110			
Copper	2.08E6		ng/l	2.0000E6		104	90-110			
Iron	2.53E6		ng/l	2.5000E6		101	90-110			
Lead	199000		ng/l	200000		99.4	90-110			
Magnesium	1.04E6		ng/l	1.0000E6		104	90-110			
Manganese	498000		ng/l	500000		99.7	90-110			
Molybdenum	50900		ng/l	50000		102	90-110			
Nickel	124000		ng/l	120000		103	90-110			
Phosphorus	206000		ng/l	200000		103	90-110			
Potassium	2.64E6		ng/l	2.5000E6		106	90-110			
Rubidium	10100		ng/l	10000		101	90-110			
Selenium	19800		ng/l	20000		99.2	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 2312044 - B3L1203										
Calibration Check (2312044-CCV4) Contin				Prepared: 12/14/23 Analyzed: 12/15/23						
Sodium	2.61E6		ng/l	2.5000E6		104	90-110			
Strontium	49300		ng/l	50000		98.5	90-110			
Thallium	474		ng/l	500.00		94.9	90-110			
Thorium	493		ng/l	500.00		98.5	90-110			
Uranium	486		ng/l	500.00		97.2	90-110			
Vanadium	19900		ng/l	20000		99.5	90-110			
Zinc	533000		ng/l	500000		107	90-110			
High Cal Check (2312044-HCV1)				Prepared & Analyzed: 12/14/23						
Aluminum	2.93E6		ng/l	3.0000E6		97.5	95-105			
Antimony	39300		ng/l	40000		98.4	95-105			
Arsenic	39500		ng/l	40000		98.9	95-105			
Barium	398000		ng/l	400000		99.5	95-105			
Beryllium	10300		ng/l	10000		103	95-105			
Cadmium	39100		ng/l	40000		97.7	95-105			
Calcium	4.93E7		ng/l	5.0000E7		98.6	95-105			
Chromium	464000		ng/l	480000		96.6	95-105			
Cobalt	98500		ng/l	100000		98.5	95-105			
Copper	3.88E6		ng/l	4.0000E6		97.1	95-105			
Iron	4.95E6		ng/l	5.0000E6		98.9	95-105			
Lead	393000		ng/l	400000		98.3	95-105			
Magnesium	1.97E6		ng/l	2.0000E6		98.3	95-105			
Manganese	971000		ng/l	1.0000E6		97.1	95-105			
Molybdenum	99100		ng/l	100000		99.1	95-105			
Nickel	235000		ng/l	240000		97.8	95-105			
Phosphorus	401000		ng/l	400000		100	95-105			
Potassium	4.87E6		ng/l	5.0000E6		97.4	95-105			
Rubidium	19600		ng/l	20000		98.0	95-105			
Selenium	39100		ng/l	40000		97.7	95-105			
Sodium	4.95E6		ng/l	5.0000E6		99.1	95-105			
Strontium	96500		ng/l	100000		96.5	95-105			
Thallium	987		ng/l	1000.0		98.7	95-105			
Thorium	988		ng/l	1000.0		98.8	95-105			
Uranium	993		ng/l	1000.0		99.3	95-105			
Vanadium	39200		ng/l	40000		98.0	95-105			
Zinc	953000		ng/l	1.0000E6		95.3	95-105			
Initial Cal Blank (2312044-ICB1)				Prepared & Analyzed: 12/14/23						
Aluminum	49.1		ng/l							
Antimony	1.91		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 2312044 - B3L1203										
Initial Cal Blank (2312044-ICB1) Continu				Prepared & Analyzed: 12/14/23						
Arsenic	1.34		ng/l							
Barium	5.75		ng/l							
Beryllium	0.590		ng/l							
Cadmium	0.717		ng/l							
Calcium	152		ng/l							
Chromium	6.75		ng/l							
Cobalt	1.19		ng/l							
Copper	197		ng/l							
Iron	5.45		ng/l							
Lead	8.67		ng/l							
Magnesium	41.8		ng/l							
Manganese	16.5		ng/l							
Molybdenum	13.6		ng/l							
Nickel	63.6		ng/l							
Phosphorus	233		ng/l							
Potassium	729		ng/l							
Rubidium	0.939		ng/l							
Selenium	4.77		ng/l							
Sodium	-153		ng/l							U
Strontium	-0.858		ng/l							U
Thallium	0.602		ng/l							
Thorium	0.506		ng/l							
Uranium	0.0195		ng/l							
Vanadium	-88.2		ng/l							U
Zinc	-216		ng/l							U
Initial Cal Check (2312044-ICV1)				Prepared & Analyzed: 12/14/23						
Aluminum	1.45E6		ng/l	1.5000E6		96.7	90-110			
Antimony	19500		ng/l	20000		97.6	90-110			
Arsenic	19600		ng/l	20000		97.8	90-110			
Barium	195000		ng/l	200000		97.7	90-110			
Beryllium	4610		ng/l	5000.0		92.2	90-110			
Cadmium	20300		ng/l	20000		101	90-110			
Calcium	2.40E7		ng/l	2.5000E7		96.0	90-110			
Chromium	231000		ng/l	240000		96.1	90-110			
Cobalt	49200		ng/l	50000		98.4	90-110			
Copper	1.97E6		ng/l	2.0000E6		98.5	90-110			
Iron	2.46E6		ng/l	2.5000E6		98.3	90-110			
Lead	194000		ng/l	200000		96.9	90-110			

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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2312044 - B3L1203										
Initial Cal Check (2312044-ICV1) Continu				Prepared & Analyzed: 12/14/23						
Magnesium	980000		ng/l	1.0000E6		98.0	90-110			
Manganese	481000		ng/l	500000		96.1	90-110			
Molybdenum	49000		ng/l	50000		98.0	90-110			
Nickel	118000		ng/l	120000		98.3	90-110			
Phosphorus	196000		ng/l	200000		97.9	90-110			
Potassium	2.62E6		ng/l	2.5000E6		105	90-110			
Rubidium	9560		ng/l	10000		95.6	90-110			
Selenium	20200		ng/l	20000		101	90-110			
Sodium	2.46E6		ng/l	2.5000E6		98.5	90-110			
Strontium	48900		ng/l	50000		97.8	90-110			
Thallium	470		ng/l	500.00		93.9	90-110			
Thorium	487		ng/l	500.00		97.4	90-110			
Uranium	475		ng/l	500.00		95.1	90-110			
Vanadium	19700		ng/l	20000		98.7	90-110			
Zinc	523000		ng/l	500000		105	90-110			
Interference Check A (2312044-IFA1)				Prepared & Analyzed: 12/14/23						
Aluminum	1.49E7		ng/l	1.5000E7		99.4	80-120			
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
Calcium	9.35E7		ng/l	1.0040E8		93.1	80-120			
Chromium	0.00		ng/l				80-120			U
Cobalt	0.00		ng/l				80-120			U
Copper	0.00		ng/l				80-120			U
Iron	1.50E7		ng/l	1.5000E7		99.7	80-120			
Lead	0.00		ng/l				80-120			U
Magnesium	1.59E7		ng/l	1.5000E7		106	80-120			
Manganese	0.00		ng/l				80-120			U
Molybdenum	296000		ng/l	300000		98.7	80-120			
Nickel	0.00		ng/l				80-120			U
Phosphorus	1.64E7		ng/l	1.5000E7		109	80-120			
Potassium	1.55E7		ng/l	1.5000E7		103	80-120			
Rubidium	0.00		ng/l				80-120			U
Selenium	0.00		ng/l				80-120			U
Sodium	1.59E7		ng/l	1.5000E7		106	80-120			
Strontium	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 2312044 - B3L1203										
Interference Check A (2312044-IFA1) Co					Prepared & Analyzed: 12/14/23					
Thallium	0.00		ng/l				80-120			U
Thorium	0.00		ng/l				80-120			U
Uranium	0.00		ng/l				80-120			U
Vanadium	0.00		ng/l				80-120			U
Zinc	0.00		ng/l				80-120			U
Interference Check B (2312044-IFB1)					Prepared & Analyzed: 12/14/23					
Aluminum	1.65E7		ng/l	1.6500E7		99.8	80-120			
Antimony	19800		ng/l	20000		98.9	80-120			
Arsenic	20200		ng/l	20000		101	80-120			
Barium	198000		ng/l	200000		99.1	80-120			
Beryllium	5010		ng/l	5000.0		100	80-120			
Cadmium	19300		ng/l	20000		96.5	80-120			
Calcium	1.16E8		ng/l	1.2540E8		92.3	80-120			
Chromium	228000		ng/l	240000		95.1	80-120			
Cobalt	50000		ng/l	50000		100	80-120			
Copper	1.90E6		ng/l	2.0000E6		95.2	80-120			
Iron	1.72E7		ng/l	1.7500E7		98.4	80-120			
Lead	203000		ng/l	200000		101	80-120			
Magnesium	1.69E7		ng/l	1.6000E7		106	80-120			
Manganese	512000		ng/l	500000		102	80-120			
Molybdenum	339000		ng/l	350000		96.7	80-120			
Nickel	117000		ng/l	120000		97.2	80-120			
Phosphorus	1.67E7		ng/l	1.5200E7		110	80-120			
Potassium	1.82E7		ng/l	1.7500E7		104	80-120			
Rubidium	10100		ng/l	10000		101	80-120			
Selenium	18700		ng/l	20000		93.3	80-120			
Sodium	1.89E7		ng/l	1.7500E7		108	80-120			
Strontium	49400		ng/l	50000		98.8	80-120			
Thallium	500		ng/l	500.00		100	80-120			
Thorium	534		ng/l	500.00		107	80-120			
Uranium	527		ng/l	500.00		105	80-120			
Vanadium	18300		ng/l	20000		91.4	80-120			
Zinc	484000		ng/l	500000		96.8	80-120			
Serial Dilution (2312044-SRD1)		**Source: 3121332-06**			Prepared & Analyzed: 12/14/23					
Aluminum	380	151	ng/m³ Air		383			0.776	10	
Antimony	ND	0.207	ng/m³ Air		ND				10	SL, U
Arsenic	0.107	0.0448	ng/m³ Air		0.101			5.31	10	
Barium	7.41	4.45	ng/m³ Air		7.62			2.74	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 2312044 - B3L1203										
Serial Dilution (2312044-SRD1) Continue Source: 3121332-06 Prepared & Analyzed: 12/14/23										
Beryllium	0.0187	0.0156	ng/m³ Air		0.0182			2.23	10	
Cadmium	ND	0.511	ng/m³ Air		ND				10	U
Calcium	ND	1370	ng/m³ Air		ND				10	LJ, QB-01, U
Chromium	ND	9.52	ng/m³ Air		ND				10	U
Cobalt	0.234	0.0732	ng/m³ Air		0.237			1.26	10	QB-01
Copper	34.6	14.1	ng/m³ Air		34.8			0.687	10	
Iron	471	113	ng/m³ Air		478			1.46	10	
Lead	ND	1.29	ng/m³ Air		ND				10	U
Magnesium	ND	452	ng/m³ Air		ND				10	U
Manganese	15.0	5.58	ng/m³ Air		15.1			0.897	10	
Molybdenum	1.04	0.999	ng/m³ Air		1.05			0.734	10	B, QB-01
Nickel	ND	3.76	ng/m³ Air		ND				10	U
Phosphorus	ND	5860	ng/m³ Air		ND				10	U
Potassium	ND	178	ng/m³ Air		ND				10	B, U
Rubidium	0.175	0.0858	ng/m³ Air		0.185			5.24	10	
Selenium	0.155	0.0516	ng/m³ Air		0.162			4.42	10	
Sodium	ND	9380	ng/m³ Air		ND				10	U
Strontium	4.62	3.06	ng/m³ Air		4.71			1.97	10	QB-01
Thallium	ND	0.00236	ng/m³ Air		ND				10	U
Thorium	ND	0.0141	ng/m³ Air		0.0143				10	U
Uranium	ND	0.0797	ng/m³ Air		ND				10	U
Vanadium	1.30	0.231	ng/m³ Air		1.36			4.18	10	
Zinc	ND	458	ng/m³ Air		ND				10	U
Batch B3L1203 - ICP-MS Extraction										
Blank (B3L1203-BLK1) Prepared: 12/12/23 Analyzed: 12/13/23										
Aluminum	ND	32.1	ng/m³ Air							U
Antimony	ND	0.0441	ng/m³ Air							SL, U
Arsenic	ND	0.00955	ng/m³ Air							U
Barium	ND	0.948	ng/m³ Air							U
Beryllium	ND	0.00332	ng/m³ Air							U
Cadmium	ND	0.109	ng/m³ Air							U
Calcium	ND	292	ng/m³ Air							LJ, QB-01, U
Chromium	ND	2.03	ng/m³ Air							U
Cobalt	ND	0.0156	ng/m³ Air							QB-01, U
Copper	ND	3.00	ng/m³ Air							U
Iron	ND	24.2	ng/m³ Air							GC-BS, U
Lead	ND	0.276	ng/m³ Air							U
Magnesium	ND	96.4	ng/m³ Air							U

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

FILE #: 0000.00
REPORTED: 12/19/23 10:54
SUBMITTED: 12/11/23 to 12/13/23
AQS SITE CODE:
SITE CODE: Maui 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 B3L1203 - ICP-MS Extraction										
Blank (B3L1203-BLK1) Continued				Prepared: 12/12/23 Analyzed: 12/13/23						
Manganese	ND	1.19	ng/m³ Air							QB-01, U
Molybdenum	ND	0.213	ng/m³ Air							QB-01, U
Nickel	ND	0.801	ng/m³ Air							U
Phosphorus	ND	1250	ng/m³ Air							GC-BS, U
Potassium	ND	38.0	ng/m³ Air							U
Rubidium	ND	0.0183	ng/m³ Air							U
Selenium	ND	0.0110	ng/m³ Air							U
Sodium	ND	2000	ng/m³ Air							GC-BS, U
Strontium	ND	0.652	ng/m³ Air							QB-01, U
Thallium	ND	5.03E-4	ng/m³ Air							U
Thorium	ND	0.00300	ng/m³ Air							U
Uranium	ND	0.0170	ng/m³ Air							U
Vanadium	ND	0.0492	ng/m³ Air							QB-01, U
Zinc	ND	97.7	ng/m³ Air							U
LCS (B3L1203-BS1)				Prepared: 12/12/23 Analyzed: 12/13/23						
Aluminum	92.8	32.1	ng/m³ Air	82.975		112	80-120			
Antimony	0.550	0.0441	ng/m³ Air	1.3829		39.8	80-120			SL
Arsenic	2.72	0.00955	ng/m³ Air	2.7658		98.3	80-120			
Barium	28.2	0.948	ng/m³ Air	27.658		102	80-120			
Beryllium	1.37	0.00332	ng/m³ Air	1.3829		98.8	80-120			
Cadmium	1.39	0.109	ng/m³ Air	1.3829		101	80-120			
Calcium	547	292	ng/m³ Air	69.146		791	80-120			LJ, QB-01
Chromium	15.7	2.03	ng/m³ Air	13.829		113	80-120			
Cobalt	1.35	0.0156	ng/m³ Air	1.3829		97.6	80-120			QB-01
Copper	31.0	3.00	ng/m³ Air	27.658		112	80-120			
Iron	42.9	24.2	ng/m³ Air	27.658		155	80-120			GC-BS
Lead	13.5	0.276	ng/m³ Air	13.829		98.0	80-120			
Magnesium	ND	96.4	ng/m³ Air	27.658			80-120			U
Manganese	9.10	1.19	ng/m³ Air	8.2975		110	80-120			QB-01
Molybdenum	1.59	0.213	ng/m³ Air	1.3829		115	80-120			B, QB-01
Nickel	3.09	0.801	ng/m³ Air	2.7658		112	80-120			
Phosphorus	ND	1250	ng/m³ Air	13.829			80-120			GC-BS, U
Potassium	73.3	38.0	ng/m³ Air	55.317		132	80-120			B
Rubidium	1.35	0.0183	ng/m³ Air	1.3829		97.9	80-120			
Selenium	2.74	0.0110	ng/m³ Air	2.7658		99.1	80-120			
Sodium	ND	2000	ng/m³ Air	55.317			80-120			GC-BS, U
Strontium	2.24	0.652	ng/m³ Air	1.3829		162	80-120			QB-01
Thallium	0.132	5.03E-4	ng/m³ Air	0.13829		95.6	80-120			

CERTIFICATE OF ANALYSIS

Tetra Tech, Inc.
1777 Sentry Pkwy, Bldg 12
Blue Bell, PA 19422
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FILE #: 0000.00
REPORTED: 12/19/23 10:54
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AQS SITE CODE:
SITE CODE: Maui 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 B3L1203 - ICP-MS Extraction										
LCS (B3L1203-BS1) Continued				Prepared: 12/12/23 Analyzed: 12/13/23						
Thorium	0.133	0.00300	ng/m³ Air	0.13829		96.0	80-120			
Uranium	0.130	0.0170	ng/m³ Air	0.13829		93.9	80-120			
Vanadium	2.75	0.0492	ng/m³ Air	2.7658		99.4	80-120			QB-01
Zinc	113	97.7	ng/m³ Air	82.975		137	80-120			
Duplicate (B3L1203-DUP1)		**Source: 3121111-02**		Prepared: 12/12/23 Analyzed: 12/13/23						
Aluminum	159	26.5	ng/m³ Air		159			0.260	10	
Antimony	0.0878	0.0364	ng/m³ Air		0.0779			12.0	10	SL
Arsenic	0.195	0.00789	ng/m³ Air		0.176			10.5	10	
Barium	3.11	0.783	ng/m³ Air		3.44			10.0	10	
Beryllium	0.00599	0.00274	ng/m³ Air		0.00625			4.26	10	
Cadmium	ND	0.0901	ng/m³ Air		ND				10	U
Calcium	477	241	ng/m³ Air		467			2.19	10	LJ, QB-01
Chromium	1.71	1.68	ng/m³ Air		ND				10	
Cobalt	0.116	0.0129	ng/m³ Air		0.117			1.07	10	QB-01
Copper	19.4	2.48	ng/m³ Air		18.5			4.71	10	
Iron	179	20.0	ng/m³ Air		185			3.25	10	GC-BS
Lead	ND	0.228	ng/m³ Air		ND				10	U
Magnesium	140	79.7	ng/m³ Air		136			2.74	10	
Manganese	5.33	0.983	ng/m³ Air		5.13			3.92	10	QB-01
Molybdenum	0.892	0.176	ng/m³ Air		0.890			0.233	10	QB-01
Nickel	ND	0.662	ng/m³ Air		ND				10	U
Phosphorus	ND	1030	ng/m³ Air		ND				10	GC-BS, U
Potassium	87.0	31.4	ng/m³ Air		85.5			1.70	10	
Rubidium	0.110	0.0151	ng/m³ Air		0.112			2.37	10	
Selenium	0.0963	0.00909	ng/m³ Air		0.104			7.50	10	
Sodium	ND	1650	ng/m³ Air		ND				10	GC-BS, U
Strontium	2.21	0.539	ng/m³ Air		2.18			1.28	10	QB-01
Thallium	5.94E-4	4.16E-4	ng/m³ Air		6.19E-4			4.10	10	
Thorium	0.00600	0.00248	ng/m³ Air		0.00662			9.77	10	
Uranium	ND	0.0140	ng/m³ Air		ND				10	U
Vanadium	0.670	0.0407	ng/m³ Air		0.660			1.52	10	QB-01
Zinc	ND	80.7	ng/m³ Air		ND				10	U
Matrix Spike (B3L1203-MS1)		**Source: 3121111-02**		Prepared: 12/12/23 Analyzed: 12/13/23						
Aluminum	225	26.5	ng/m³ Air	68.575	159	95.6	80-120			
Antimony	0.569	0.0364	ng/m³ Air	1.1429	0.0779	42.9	80-120			SL
Arsenic	2.39	0.00789	ng/m³ Air	2.2858	0.176	97.0	80-120			
Barium	26.2	0.783	ng/m³ Air	22.858	3.44	99.8	80-120			
Beryllium	1.12	0.00274	ng/m³ Air	1.1429	0.00625	97.9	80-120			

CERTIFICATE OF ANALYSIS

Tetra Tech, Inc.
1777 Sentry Pkwy, Bldg 12
Blue Bell, PA 19422
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FILE #: 0000.00
REPORTED: 12/19/23 10:54
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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 B3L1203 - ICP-MS Extraction										
Matrix Spike (B3L1203-MS1) Continued Source: 3121111-02 Prepared: 12/12/23 Analyzed: 12/13/23										
Cadmium	1.16	0.0901	ng/m³ Air	1.1429	ND	101	80-120			
Calcium	533	241	ng/m³ Air	57.146	467	115	80-120			LJ, QB-01
Chromium	13.2	1.68	ng/m³ Air	11.429	ND	116	80-120			
Cobalt	1.20	0.0129	ng/m³ Air	1.1429	0.117	94.7	80-120			QB-01
Copper	45.1	2.48	ng/m³ Air	22.858	18.5	116	80-120			
Iron	201	20.0	ng/m³ Air	22.858	185	70.5	80-120			GC-BS, QM-4
Lead	11.4	0.228	ng/m³ Air	11.429	ND	99.4	80-120			
Magnesium	160	79.7	ng/m³ Air	22.858	136	108	80-120			
Manganese	12.2	0.983	ng/m³ Air	6.8575	5.13	104	80-120			QB-01
Molybdenum	1.98	0.176	ng/m³ Air	1.1429	0.890	95.1	80-120			B, QB-01
Nickel	2.73	0.662	ng/m³ Air	2.2858	ND	119	80-120			
Phosphorus	ND	1030	ng/m³ Air	11.429	ND		80-120			GC-BS, U
Potassium	130	31.4	ng/m³ Air	45.716	85.5	96.7	80-120			B
Rubidium	1.20	0.0151	ng/m³ Air	1.1429	0.112	94.9	80-120			
Selenium	2.38	0.00909	ng/m³ Air	2.2858	0.104	99.5	80-120			
Sodium	ND	1650	ng/m³ Air	45.716	ND		80-120			GC-BS, U
Strontium	3.30	0.539	ng/m³ Air	1.1429	2.18	98.1	80-120			QB-01
Thallium	0.109	4.16E-4	ng/m³ Air	0.11429	6.19E-4	94.9	80-120			
Thorium	0.0575	0.00248	ng/m³ Air	0.11429	0.00662	44.5	80-120			QM-07
Uranium	0.112	0.0140	ng/m³ Air	0.11429	ND	97.7	80-120			
Vanadium	2.90	0.0407	ng/m³ Air	2.2858	0.660	98.2	80-120			QB-01
Zinc	88.0	80.7	ng/m³ Air	68.575	ND	128	80-120			
Matrix Spike Dup (B3L1203-MSD1) Source: 3121111-02 Prepared: 12/12/23 Analyzed: 12/13/23										
Aluminum	226	26.5	ng/m³ Air	68.575	159	97.0	80-120	0.432	20	
Antimony	0.568	0.0364	ng/m³ Air	1.1429	0.0779	42.9	80-120	0.0979	20	SL
Arsenic	2.43	0.00789	ng/m³ Air	2.2858	0.176	98.4	80-120	1.37	20	
Barium	26.1	0.783	ng/m³ Air	22.858	3.44	99.3	80-120	0.414	20	
Beryllium	1.13	0.00274	ng/m³ Air	1.1429	0.00625	98.4	80-120	0.509	20	
Cadmium	1.16	0.0901	ng/m³ Air	1.1429	ND	102	80-120	0.445	20	
Calcium	523	241	ng/m³ Air	57.146	467	99.1	80-120	1.77	20	LJ, QB-01
Chromium	14.5	1.68	ng/m³ Air	11.429	ND	127	80-120	9.47	20	
Cobalt	1.22	0.0129	ng/m³ Air	1.1429	0.117	96.8	80-120	2.00	20	QB-01
Copper	45.5	2.48	ng/m³ Air	22.858	18.5	118	80-120	0.813	20	
Iron	209	20.0	ng/m³ Air	22.858	185	106	80-120	4.00	20	GC-BS
Lead	11.5	0.228	ng/m³ Air	11.429	ND	101	80-120	1.33	20	
Magnesium	160	79.7	ng/m³ Air	22.858	136	105	80-120	0.409	20	
Manganese	12.3	0.983	ng/m³ Air	6.8575	5.13	105	80-120	0.443	20	QB-01
Molybdenum	2.17	0.176	ng/m³ Air	1.1429	0.890	112	80-120	9.29	20	QB-01

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

FILE #: 0000.00
REPORTED: 12/19/23 10:54
SUBMITTED: 12/11/23 to 12/13/23
AQS SITE CODE:
SITE CODE: Maui 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 B3L1203 - ICP-MS Extraction										
Matrix Spike Dup (B3L1203-MSD1) Contir			**Source: 3121111-02**		Prepared: 12/12/23		Analyzed: 12/13/23			
Nickel	3.60	0.662	ng/m³ Air	2.2858	ND	158	80-120	27.7	20	LJ, QM-06, Q
Phosphorus	ND	1030	ng/m³ Air	11.429	ND		80-120		20	GC-BS, QM-4X, U
Potassium	131	31.4	ng/m³ Air	45.716	85.5	99.7	80-120	1.03	20	
Rubidium	1.23	0.0151	ng/m³ Air	1.1429	0.112	98.0	80-120	2.90	20	
Selenium	2.39	0.00909	ng/m³ Air	2.2858	0.104	100	80-120	0.674	20	
Sodium	ND	1650	ng/m³ Air	45.716	ND		80-120		20	GC-BS, QM-4X, U
Strontium	3.38	0.539	ng/m³ Air	1.1429	2.18	105	80-120	2.33	20	QB-01
Thallium	0.110	4.16E-4	ng/m³ Air	0.11429	6.19E-4	95.5	80-120	0.633	20	
Thorium	0.0641	0.00248	ng/m³ Air	0.11429	0.00662	50.3	80-120	10.9	20	QM-07
Uranium	0.114	0.0140	ng/m³ Air	0.11429	ND	99.5	80-120	1.76	20	
Vanadium	2.92	0.0407	ng/m³ Air	2.2858	0.660	98.7	80-120	0.363	20	QB-01
Zinc	87.4	80.7	ng/m³ Air	68.575	ND	127	80-120	0.668	20	
Post Spike (B3L1203-PS1)			**Source: 3121111-02**		Prepared: 12/12/23		Analyzed: 12/13/23			
Aluminum	179	26.5	ng/m³ Air	22.858	159	89.0	75-125			
Antimony	0.304	0.0364	ng/m³ Air	0.22858	0.0779	98.8	75-125			SL
Arsenic	1.27	0.00789	ng/m³ Air	1.1429	0.176	96.2	75-125			
Barium	5.73	0.783	ng/m³ Air	2.2858	3.44	101	75-125			
Beryllium	0.220	0.00274	ng/m³ Air	0.22858	0.00625	93.4	75-125			
Cadmium	0.126	0.0901	ng/m³ Air	0.11429	ND	110	75-125			
Calcium	497	241	ng/m³ Air	22.858	467	132	75-125			A-01a, LJ, QB-01
Chromium	2.77	1.68	ng/m³ Air	1.1429	ND	243	75-125			
Cobalt	0.337	0.0129	ng/m³ Air	0.22858	0.117	96.2	75-125			QB-01
Copper	30.5	2.48	ng/m³ Air	11.429	18.5	105	75-125			
Iron	208	20.0	ng/m³ Air	22.858	185	98.2	75-125			GC-BS
Lead	22.5	0.228	ng/m³ Air	22.858	ND	98.4	75-125			
Magnesium	158	79.7	ng/m³ Air	22.858	136	97.1	75-125			
Manganese	7.38	0.983	ng/m³ Air	2.2858	5.13	98.7	75-125			QB-01
Molybdenum	1.98	0.176	ng/m³ Air	1.1429	0.890	95.1	75-125			QB-01
Nickel	2.73	0.662	ng/m³ Air	2.2858	ND	119	75-125			
Phosphorus	ND	1030	ng/m³ Air	4.5716	ND		75-125			A-01a, GC-BS U
Potassium	107	31.4	ng/m³ Air	22.858	85.5	96.0	75-125			
Rubidium	0.217	0.0151	ng/m³ Air	0.11429	0.112	91.4	75-125			
Selenium	1.24	0.00909	ng/m³ Air	1.1429	0.104	99.1	75-125			
Sodium	ND	1650	ng/m³ Air	22.858	ND		75-125			A-01a, GC-BS U

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FILE #: 0000.00
REPORTED: 12/19/23 10:54
SUBMITTED: 12/11/23 to 12/13/23
AQS SITE CODE:
SITE CODE: Maui 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 B3L1203 - ICP-MS Extraction										
Post Spike (B3L1203-PS1) Continued			**Source: 3121111-02**		Prepared: 12/12/23 Analyzed: 12/13/23					
Strontium	3.31	0.539	ng/m³ Air	1.1429	2.18	98.7	75-125			QB-01
Thallium	0.0542	4.16E-4	ng/m³ Air	5.7146E-2	6.19E-4	93.8	75-125			
Thorium	0.0584	0.00248	ng/m³ Air	5.7146E-2	0.00662	90.6	75-125			
Uranium	0.0582	0.0140	ng/m³ Air	5.7146E-2	ND	102	75-125			
Vanadium	1.78	0.0407	ng/m³ Air	1.1429	0.660	97.6	75-125			QB-01
Zinc	ND	80.7	ng/m³ Air	22.858	ND		75-125			U
Batch B3L1403 - ICP-MS Extraction										
Blank (B3L1403-BLK1)					Prepared & Analyzed: 12/14/23					
Aluminum	ND	32.1	ng/m³ Air							U
Antimony	ND	0.0441	ng/m³ Air							SL, U
Arsenic	ND	0.00955	ng/m³ Air							U
Barium	ND	0.948	ng/m³ Air							U
Beryllium	ND	0.00332	ng/m³ Air							U
Cadmium	ND	0.109	ng/m³ Air							U
Calcium	ND	292	ng/m³ Air							LJ, QB-01, U
Chromium	ND	2.03	ng/m³ Air							U
Cobalt	ND	0.0156	ng/m³ Air							QB-01, U
Copper	ND	3.00	ng/m³ Air							U
Iron	ND	24.2	ng/m³ Air							U
Lead	ND	0.276	ng/m³ Air							U
Magnesium	ND	96.4	ng/m³ Air							U
Manganese	ND	1.19	ng/m³ Air							U
Molybdenum	ND	0.213	ng/m³ Air							B, QB-01, U
Nickel	ND	0.801	ng/m³ Air							U
Phosphorus	ND	1250	ng/m³ Air							U
Potassium	ND	38.0	ng/m³ Air							B, U
Rubidium	ND	0.0183	ng/m³ Air							U
Selenium	ND	0.0110	ng/m³ Air							U
Sodium	ND	2000	ng/m³ Air							U
Strontium	ND	0.652	ng/m³ Air							QB-01, U
Thallium	ND	5.03E-4	ng/m³ Air							U
Thorium	ND	0.00300	ng/m³ Air							U
Uranium	ND	0.0170	ng/m³ Air							U
Vanadium	ND	0.0492	ng/m³ Air							U
Zinc	ND	97.7	ng/m³ Air							U
LCS (B3L1403-BS1)					Prepared & Analyzed: 12/14/23					
Aluminum	94.6	32.1	ng/m³ Air	82.975		114	80-120			
Antimony	0.539	0.0441	ng/m³ Air	1.3829		39.0	80-120			SL

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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 B3L1403 - ICP-MS Extraction										
LCS (B3L1403-BS1) Continued				Prepared & Analyzed: 12/14/23						
Arsenic	2.74	0.00955	ng/m³ Air	2.7658		99.0	80-120			
Barium	28.0	0.948	ng/m³ Air	27.658		101	80-120			
Beryllium	1.35	0.00332	ng/m³ Air	1.3829		97.7	80-120			
Cadmium	1.41	0.109	ng/m³ Air	1.3829		102	80-120			
Calcium	564	292	ng/m³ Air	69.146		815	80-120			LJ, QB-01
Chromium	16.3	2.03	ng/m³ Air	13.829		118	80-120			
Cobalt	1.40	0.0156	ng/m³ Air	1.3829		101	80-120			QB-01
Copper	32.3	3.00	ng/m³ Air	27.658		117	80-120			
Iron	41.9	24.2	ng/m³ Air	27.658		152	80-120			
Lead	13.6	0.276	ng/m³ Air	13.829		98.2	80-120			
Magnesium	ND	96.4	ng/m³ Air	27.658			80-120			U
Manganese	8.80	1.19	ng/m³ Air	8.2975		106	80-120			
Molybdenum	1.66	0.213	ng/m³ Air	1.3829		120	80-120			B, QB-01
Nickel	3.19	0.801	ng/m³ Air	2.7658		115	80-120			
Phosphorus	ND	1250	ng/m³ Air	13.829			80-120			U
Potassium	72.6	38.0	ng/m³ Air	55.317		131	80-120			B
Rubidium	1.32	0.0183	ng/m³ Air	1.3829		95.5	80-120			
Selenium	2.72	0.0110	ng/m³ Air	2.7658		98.3	80-120			
Sodium	ND	2000	ng/m³ Air	55.317			80-120			U
Strontium	2.19	0.652	ng/m³ Air	1.3829		158	80-120			QB-01
Thallium	0.132	5.03E-4	ng/m³ Air	0.13829		95.3	80-120			
Thorium	0.132	0.00300	ng/m³ Air	0.13829		95.3	80-120			
Uranium	0.130	0.0170	ng/m³ Air	0.13829		94.2	80-120			
Vanadium	2.75	0.0492	ng/m³ Air	2.7658		99.3	80-120			
Zinc	125	97.7	ng/m³ Air	82.975		151	80-120			
Duplicate (B3L1403-DUP1)		**Source: 3121332-06**		Prepared & Analyzed: 12/14/23						
Aluminum	378	30.1	ng/m³ Air		383			1.17	10	
Antimony	0.0764	0.0414	ng/m³ Air		0.0839			9.31	10	SL
Arsenic	0.101	0.00896	ng/m³ Air		0.101			0.656	10	
Barium	7.37	0.889	ng/m³ Air		7.62			3.28	10	
Beryllium	0.0206	0.00311	ng/m³ Air		0.0182			12.3	10	
Cadmium	ND	0.102	ng/m³ Air		ND				10	U
Calcium	628	274	ng/m³ Air		623			0.807	10	LJ, QB-01
Chromium	2.18	1.90	ng/m³ Air		2.10			3.88	10	
Cobalt	0.238	0.0146	ng/m³ Air		0.237			0.384	10	QB-01
Copper	34.4	2.81	ng/m³ Air		34.8			1.14	10	
Iron	475	22.7	ng/m³ Air		478			0.780	10	
Lead	0.363	0.259	ng/m³ Air		0.343			5.71	10	

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

FILE #: 0000.00
REPORTED: 12/19/23 10:54
SUBMITTED: 12/11/23 to 12/13/23
AQS SITE CODE:
SITE CODE: Maui 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 B3L1403 - ICP-MS Extraction										
Duplicate (B3L1403-DUP1) Continued			**Source: 3121332-06**		Prepared & Analyzed: 12/14/23					
Magnesium	250	90.4	ng/m³ Air		254			1.26	10	
Manganese	15.1	1.12	ng/m³ Air		15.1			0.186	10	
Molybdenum	1.04	0.200	ng/m³ Air		1.05			0.480	10	B, QB-01
Nickel	ND	0.751	ng/m³ Air		ND				10	U
Phosphorus	ND	1170	ng/m³ Air		ND				10	U
Potassium	108	35.6	ng/m³ Air		105			2.78	10	B
Rubidium	0.183	0.0172	ng/m³ Air		0.185			1.18	10	
Selenium	0.168	0.0103	ng/m³ Air		0.162			3.77	10	
Sodium	2170	1880	ng/m³ Air		2200			1.32	10	E
Strontium	4.65	0.612	ng/m³ Air		4.71			1.32	10	QB-01
Thallium	0.00135	4.72E-4	ng/m³ Air		0.00143			5.78	10	
Thorium	0.0137	0.00281	ng/m³ Air		0.0143			4.60	10	
Uranium	ND	0.0159	ng/m³ Air		ND				10	U
Vanadium	1.32	0.0461	ng/m³ Air		1.36			2.65	10	
Zinc	ND	91.6	ng/m³ Air		ND				10	U
Duplicate (B3L1403-DUP2)			**Source: 3121332-12**		Prepared: 12/14/23 Analyzed: 12/15/23					
Aluminum	531	25.4	ng/m³ Air		528			0.675	10	
Antimony	0.0541	0.0349	ng/m³ Air		0.0546			0.953	10	SL
Arsenic	0.141	0.00755	ng/m³ Air		0.143			1.23	10	
Barium	5.12	0.750	ng/m³ Air		5.17			0.912	10	
Beryllium	0.0179	0.00263	ng/m³ Air		0.0186			3.68	10	
Cadmium	ND	0.0862	ng/m³ Air		ND				10	U
Calcium	419	231	ng/m³ Air		424			1.14	10	LJ, QB-01
Chromium	1.98	1.61	ng/m³ Air		1.97			0.508	10	
Cobalt	0.295	0.0123	ng/m³ Air		0.293			0.697	10	QB-01
Copper	22.8	2.37	ng/m³ Air		22.7			0.602	10	
Iron	590	19.1	ng/m³ Air		586			0.594	10	
Lead	0.691	0.218	ng/m³ Air		0.697			1.00	10	
Magnesium	135	76.3	ng/m³ Air		134			0.571	10	
Manganese	16.5	0.941	ng/m³ Air		16.6			0.215	10	
Molybdenum	0.723	0.168	ng/m³ Air		0.723			0.0941	10	B, QB-01
Nickel	ND	0.634	ng/m³ Air		ND				10	U
Phosphorus	ND	989	ng/m³ Air		ND				10	U
Potassium	65.2	30.1	ng/m³ Air		65.5			0.549	10	B
Rubidium	0.171	0.0145	ng/m³ Air		0.173			1.00	10	
Selenium	0.131	0.00870	ng/m³ Air		0.137			4.96	10	
Sodium	ND	1580	ng/m³ Air		ND				10	U
Strontium	3.34	0.516	ng/m³ Air		3.37			1.01	10	QB-01

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 #: 0000.00
REPORTED: 12/19/23 10:54
SUBMITTED: 12/11/23 to 12/13/23
AQS SITE CODE:
SITE CODE: Maui 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 B3L1403 - ICP-MS Extraction										
Duplicate (B3L1403-DUP2) Continued		**Source: 3121332-12**		Prepared: 12/14/23 Analyzed: 12/15/23						
Thallium	0.00110	3.98E-4	ng/m³ Air		0.00110			0.0815	10	
Thorium	0.0158	0.00237	ng/m³ Air		0.0158			0.0139	10	
Uranium	ND	0.0134	ng/m³ Air		ND				10	U
Vanadium	1.48	0.0389	ng/m³ Air		1.48			0.242	10	
Zinc	ND	77.3	ng/m³ Air		ND				10	U
Matrix Spike (B3L1403-MS1)		**Source: 3121332-06**		Prepared & Analyzed: 12/14/23						
Aluminum	463	30.1	ng/m³ Air	77.823	383	103	80-120			
Antimony	0.652	0.0414	ng/m³ Air	1.2970	0.0839	43.8	80-120			SL
Arsenic	2.64	0.00896	ng/m³ Air	2.5941	0.101	97.7	80-120			
Barium	33.3	0.889	ng/m³ Air	25.941	7.62	98.8	80-120			
Beryllium	1.27	0.00311	ng/m³ Air	1.2970	0.0182	96.1	80-120			
Cadmium	1.33	0.102	ng/m³ Air	1.2970	ND	102	80-120			
Calcium	688	274	ng/m³ Air	64.852	623	100	80-120			LJ, QB-01
Chromium	15.7	1.90	ng/m³ Air	12.970	2.10	105	80-120			
Cobalt	1.53	0.0146	ng/m³ Air	1.2970	0.237	99.8	80-120			QB-01
Copper	62.8	2.81	ng/m³ Air	25.941	34.8	108	80-120			
Iron	512	22.7	ng/m³ Air	25.941	478	129	80-120			QM-4X
Lead	13.2	0.259	ng/m³ Air	12.970	0.343	98.9	80-120			
Magnesium	278	90.4	ng/m³ Air	25.941	254	96.0	80-120			
Manganese	23.1	1.12	ng/m³ Air	7.7823	15.1	103	80-120			
Molybdenum	2.41	0.200	ng/m³ Air	1.2970	1.05	105	80-120			B, QB-01
Nickel	3.33	0.751	ng/m³ Air	2.5941	ND	128	80-120			
Phosphorus	ND	1170	ng/m³ Air	12.970	ND		80-120			QM-4X, U
Potassium	171	35.6	ng/m³ Air	51.882	105	127	80-120			B, QM-07
Rubidium	1.38	0.0172	ng/m³ Air	1.2970	0.185	91.8	80-120			
Selenium	2.68	0.0103	ng/m³ Air	2.5941	0.162	97.1	80-120			
Sodium	2280	1880	ng/m³ Air	51.882	2200	155	80-120			QM-4X
Strontium	5.83	0.612	ng/m³ Air	1.2970	4.71	86.3	80-120			QB-01
Thallium	0.125	4.72E-4	ng/m³ Air	0.12970	0.00143	95.0	80-120			
Thorium	0.0695	0.00281	ng/m³ Air	0.12970	0.0143	42.5	80-120			QM-07
Uranium	0.134	0.0159	ng/m³ Air	0.12970	ND	103	80-120			
Vanadium	3.90	0.0461	ng/m³ Air	2.5941	1.36	97.8	80-120			
Zinc	109	91.6	ng/m³ Air	77.823	ND	140	80-120			
Matrix Spike Dup (B3L1403-MSD1)		**Source: 3121332-06**		Prepared & Analyzed: 12/14/23						
Aluminum	465	30.1	ng/m³ Air	77.823	383	106	80-120	0.629	20	
Antimony	0.642	0.0414	ng/m³ Air	1.2970	0.0839	43.0	80-120	1.59	20	SL
Arsenic	2.64	0.00896	ng/m³ Air	2.5941	0.101	97.8	80-120	0.0407	20	
Barium	32.8	0.889	ng/m³ Air	25.941	7.62	97.1	80-120	1.35	20	

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FILE #: 0000.00
REPORTED: 12/19/23 10:54
SUBMITTED: 12/11/23 to 12/13/23
AQS SITE CODE:
SITE CODE: Maui 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 B3L1403 - ICP-MS Extraction										
Matrix Spike Dup (B3L1403-MSD1) Contir			**Source: 3121332-06**		Prepared & Analyzed: 12/14/23					
Beryllium	1.21	0.00311	ng/m³ Air	1.2970	0.0182	92.1	80-120	4.19	20	
Cadmium	1.33	0.102	ng/m³ Air	1.2970	ND	103	80-120	0.534	20	
Calcium	682	274	ng/m³ Air	64.852	623	92.2	80-120	0.754	20	LJ, QB-01
Chromium	15.6	1.90	ng/m³ Air	12.970	2.10	104	80-120	0.875	20	
Cobalt	1.52	0.0146	ng/m³ Air	1.2970	0.237	99.2	80-120	0.505	20	QB-01
Copper	63.2	2.81	ng/m³ Air	25.941	34.8	109	80-120	0.672	20	
Iron	506	22.7	ng/m³ Air	25.941	478	107	80-120	1.14	20	
Lead	13.1	0.259	ng/m³ Air	12.970	0.343	98.6	80-120	0.278	20	
Magnesium	279	90.4	ng/m³ Air	25.941	254	96.4	80-120	0.0399	20	
Manganese	23.1	1.12	ng/m³ Air	7.7823	15.1	103	80-120	0.0337	20	
Molybdenum	2.30	0.200	ng/m³ Air	1.2970	1.05	96.3	80-120	4.98	20	B, QB-01
Nickel	3.34	0.751	ng/m³ Air	2.5941	ND	129	80-120	0.377	20	
Phosphorus	ND	1170	ng/m³ Air	12.970	ND		80-120		20	QM-4X, U
Potassium	154	35.6	ng/m³ Air	51.882	105	94.0	80-120	10.5	20	B
Rubidium	1.40	0.0172	ng/m³ Air	1.2970	0.185	93.7	80-120	1.74	20	
Selenium	2.72	0.0103	ng/m³ Air	2.5941	0.162	98.5	80-120	1.35	20	
Sodium	2240	1880	ng/m³ Air	51.882	2200	87.3	80-120	1.54	20	
Strontium	5.89	0.612	ng/m³ Air	1.2970	4.71	90.8	80-120	0.998	20	QB-01
Thallium	0.125	4.72E-4	ng/m³ Air	0.12970	0.00143	95.7	80-120	0.649	20	
Thorium	0.0709	0.00281	ng/m³ Air	0.12970	0.0143	43.7	80-120	2.11	20	QM-07
Uranium	0.134	0.0159	ng/m³ Air	0.12970	ND	103	80-120	0.230	20	
Vanadium	3.91	0.0461	ng/m³ Air	2.5941	1.36	98.2	80-120	0.257	20	
Zinc	105	91.6	ng/m³ Air	77.823	ND	135	80-120	3.71	20	
Post Spike (B3L1403-PS1)			**Source: 3121332-06**		Prepared & Analyzed: 12/14/23					
Aluminum	406	30.1	ng/m³ Air	25.941	383	89.1	75-125			
Antimony	0.334	0.0414	ng/m³ Air	0.25941	0.0839	96.4	75-125			SL
Arsenic	1.32	0.00896	ng/m³ Air	1.2970	0.101	94.1	75-125			
Barium	9.88	0.889	ng/m³ Air	2.5941	7.62	87.2	75-125			
Beryllium	0.265	0.00311	ng/m³ Air	0.25941	0.0182	95.0	75-125			
Cadmium	0.137	0.102	ng/m³ Air	0.12970	ND	106	75-125			
Calcium	660	274	ng/m³ Air	25.941	623	143	75-125			A-01, LJ, QB-01
Chromium	3.37	1.90	ng/m³ Air	1.2970	2.10	98.2	75-125			
Cobalt	0.492	0.0146	ng/m³ Air	0.25941	0.237	98.3	75-125			QB-01
Copper	48.5	2.81	ng/m³ Air	12.970	34.8	105	75-125			
Iron	504	22.7	ng/m³ Air	25.941	478	99.9	75-125			
Lead	25.3	0.259	ng/m³ Air	25.941	0.343	96.3	75-125			
Magnesium	281	90.4	ng/m³ Air	25.941	254	105	75-125			

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FILE #: 0000.00
REPORTED: 12/19/23 10:54
SUBMITTED: 12/11/23 to 12/13/23
AQS SITE CODE:
SITE CODE: Maui 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 B3L1403 - ICP-MS Extraction										
Post Spike (B3L1403-PS1) Continued			**Source: 3121332-06**		Prepared & Analyzed: 12/14/23					
Manganese	17.7	1.12	ng/m³ Air	2.5941	15.1	99.6	75-125			
Molybdenum	2.26	0.200	ng/m³ Air	1.2970	1.05	93.0	75-125			B, QB-01
Nickel	3.17	0.751	ng/m³ Air	2.5941	ND	122	75-125			
Phosphorus	ND	1170	ng/m³ Air	5.1882	ND		75-125			U
Potassium	132	35.6	ng/m³ Air	25.941	105	104	75-125			B
Rubidium	0.295	0.0172	ng/m³ Air	0.12970	0.185	85.1	75-125			
Selenium	1.37	0.0103	ng/m³ Air	1.2970	0.162	93.3	75-125			
Sodium	2260	1880	ng/m³ Air	25.941	2200	232	75-125			A-01
Strontium	5.78	0.612	ng/m³ Air	1.2970	4.71	82.7	75-125			QB-01
Thallium	0.0611	4.72E-4	ng/m³ Air	6.4852E-2	0.00143	92.0	75-125			
Thorium	0.0728	0.00281	ng/m³ Air	6.4852E-2	0.0143	90.1	75-125			
Uranium	0.0704	0.0159	ng/m³ Air	6.4852E-2	ND	109	75-125			
Vanadium	2.58	0.0461	ng/m³ Air	1.2970	1.36	94.5	75-125			
Zinc	ND	91.6	ng/m³ Air	25.941	ND		75-125			U

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AQS SITE CODE:
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Notes and Definitions

U	Under Detection Limit
SL	The spike recovery was outside acceptance limits. Reported value may be biased low.
QX	Compound does not meet QC criteria. Results should be considered an estimate.
QM-4X	The MS/MSD recovery exceeds criteria because the parent sample concentration is greater than 4x the spike concentration. Sample results for the QC batch were accepted based on acceptable BS/BSD recoveries.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
QM-06	Due to noted non-homogeneity of the QC sample matrix, the MS/MSD did not provide reliable results for accuracy and precision. Sample results for the QC batch were accepted based on LCS/LCSD percent recoveries and RPD values.
QB-01	Analyte exceeds method blank criteria
LJ	Identification of analyte is acceptable; reported value is an estimate.
GC-BS	Compound exceeds Blank Spike Criteria
FB-01	Analyte exceeds Field Blank criteria.
E	The concentration indicated for this analyte is an estimated value above the calibration range of the instrument. This value is considered an estimate (CLP E-flag).
D	This result obtained by dilution.
B	Analyte is found in the associated blank as well as in the sample (CLP B-flag).
A-01a	Parent sample >4x spike amount
A-01	Parent sample >4x spike
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 – Kula

Task Order No. 23141

Reviewed by:
Talaidh Isaacs 12/22/2023 & Shanna Vasser 12/22/2023
Laboratory: Eastern Research Group – Morrisville, NC
Analysis date: 12/13/2023, 12/14/2023, and 12/15/2023
Report No: 3121111

√	1.	Chain of custody (CoC) documentation is present.
X	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.

Discrepancies:

The CoC noted, "No field blanks for 12/07/23 and 12/08/23 samples due to late arrival of new filters."

Notes:

2. No sample receipt information was presented by the laboratory.

10. No reporting limits were included in this data package.

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

December 21, 2023

Ms. Chelsea Saber
Tetra Tech, Inc.
1777 Sentry Pkwy, Bldg 12
Blue Bell, PA 19422
Project Name: Maui 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 12/18/23 12:00.

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 #: 0000.00
REPORTED: 12/21/23 13:36
SUBMITTED: 12/18/23
AQS SITE CODE:
SITE CODE: Maui fires

ANALYTICAL REPORT FOR SAMPLES

SampleName	LabNumber	Matrix	Sampled	Received
TetraTech Q9533919	3121831-01	Air	12/11/23 23:59	12/18/23 12:00
TetraTech Q9533918	3121831-02	Air	12/11/23 23:59	12/18/23 12:00
TetraTech Q9533916	3121831-03	Air	12/11/23 23:59	12/18/23 12:00
TetraTech Q9533945 FB	3121831-04	Air	12/11/23 00:00	12/18/23 12:00
TetraTech Q9533932	3121831-05	Air	12/12/23 23:59	12/18/23 12:00
TetraTech Q9533931	3121831-06	Air	12/12/23 23:59	12/18/23 12:00
TetraTech Q9533930	3121831-07	Air	12/12/23 23:59	12/18/23 12:00
TetraTech Q9533939 FB	3121831-08	Air	12/12/23 00:00	12/18/23 12:00
TetraTech Q9533944	3121831-09	Air	12/13/23 23:59	12/18/23 12:00
TetraTech Q9533943	3121831-10	Air	12/13/23 23:59	12/18/23 12:00
TetraTech Q9533941	3121831-11	Air	12/13/23 23:59	12/18/23 12:00
TetraTech Q9533936 FB	3121831-12	Air	12/13/23 00:00	12/18/23 12:00

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 #: 0000.00
REPORTED: 12/21/23 13:36
SUBMITTED: 12/18/23
AQS SITE CODE:
SITE CODE: Maui fires

Description: TetraTech Q9533919
Matrix: Air
Comments: MFK-AM01-121123-HM

Lab ID: 3121831-01
Sample Volume: 2024.203 m³
Filter ID:

Sampled: 12/11/23 23:59
Received: 12/18/23 12:00
Analysis Date: 12/19/23 22:16

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Aluminum	**7429-90-5**	**620**		**25.8**
Antimony	**7440-36-0**	**0.0624**	SL	**0.0354**
Arsenic	**7440-38-2**	**0.204**		**0.00768**
Barium	**7440-39-3**	**5.38**		**0.762**
Beryllium	**7440-41-7**	**0.0190**		**0.00267**
Cadmium	7440-43-9	0.0102	U	0.0876
Calcium	**7440-70-2**	**531**	QB-01	**235**
Chromium	**7440-47-3**	**2.14**		**1.63**
Cobalt	**7440-48-4**	**0.268**	QB-01	**0.0125**
Copper	**7440-50-8**	**15.7**		**2.41**
Iron	**7439-89-6**	**615**		**19.5**
Lead	**7439-92-1**	**0.471**		**0.222**
Magnesium	**7439-95-4**	**203**		**77.5**
Manganese	**7439-96-5**	**16.3**		**0.956**
Molybdenum	**7439-98-7**	**0.721**	QB-01	**0.171**
Nickel	**7440-02-0**	**0.820**		**0.644**
Phosphorus	7723-14-0	328	U, GC-BS, LJ, QX	1000
Potassium	**7440-09-7**	**94.0**		**30.5**
Rubidium	**7440-17-7**	**0.185**		**0.0147**
Selenium	**7782-49-2**	**0.193**	LJ, QX	**0.00884**
Sodium	**7440-23-5**	**1670**	E, GC-BS	**1610**
Strontium	**7440-24-6**	**3.86**	QB-01	**0.524**
Thallium	**7440-28-0**	**0.00127**		**4.04E-4**
Thorium	**7440-29-01**	**0.0152**		**0.00241**
Uranium	7440-61-1	0.0128	U	0.0137
Vanadium	**7440-62-2**	**2.00**		**0.0395**
Zinc	7440-66-6	38.1	U	78.5

CERTIFICATE OF ANALYSIS

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

FILE #: 0000.00
REPORTED: 12/21/23 13:36
SUBMITTED: 12/18/23
AQS SITE CODE:
SITE CODE: Maui fires

Description: TetraTech Q9533918
Matrix: Air
Comments: MFK-AM02-121123-HM

Lab ID: 3121831-02
Sample Volume: 2036.912 m³
Filter ID:

Sampled: 12/11/23 23:59
Received: 12/18/23 12:00
Analysis Date: 12/19/23 22:32

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Aluminum	**7429-90-5**	**899**	E	**25.6**
Antimony	**7440-36-0**	**0.0913**	SL	**0.0352**
Arsenic	**7440-38-2**	**0.360**		**0.00763**
Barium	**7440-39-3**	**11.3**		**0.757**
Beryllium	**7440-41-7**	**0.0263**		**0.00265**
Cadmium	7440-43-9	0.0511	U	0.0871
Calcium	**7440-70-2**	**741**	QB-01	**233**
Chromium	**7440-47-3**	**2.24**		**1.62**
Cobalt	**7440-48-4**	**0.374**	QB-01	**0.0125**
Copper	**7440-50-8**	**16.7**		**2.40**
Iron	**7439-89-6**	**867**		**19.3**
Lead	**7439-92-1**	**0.400**		**0.220**
Magnesium	**7439-95-4**	**284**		**77.0**
Manganese	**7439-96-5**	**25.2**		**0.951**
Molybdenum	**7439-98-7**	**1.01**	QB-01	**0.170**
Nickel	**7440-02-0**	**0.947**		**0.640**
Phosphorus	7723-14-0	395	U, GC-BS, LJ, QX	998
Potassium	**7440-09-7**	**172**		**30.4**
Rubidium	**7440-17-7**	**0.311**		**0.0146**
Selenium	**7782-49-2**	**0.247**	LJ, QX	**0.00879**
Sodium	**7440-23-5**	**1950**	E, GC-BS	**1600**
Strontium	**7440-24-6**	**7.71**	QB-01	**0.521**
Thallium	**7440-28-0**	**0.00179**		**4.02E-4**
Thorium	**7440-29-01**	**0.0215**		**0.00240**
Uranium	**7440-61-1**	**0.0201**		**0.0136**
Vanadium	**7440-62-2**	**2.69**		**0.0393**
Zinc	7440-66-6	33.0	U	78.0

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 #: 0000.00
REPORTED: 12/21/23 13:36
SUBMITTED: 12/18/23
AQS SITE CODE:
SITE CODE: Maui fires

Description: TetraTech Q9533916
Matrix: Air
Comments: MFK-AM03-121123-HM

Lab ID: 3121831-03
Sample Volume: 1628.578 m³
Filter ID:

Sampled: 12/11/23 23:59
Received: 12/18/23 12:00
Analysis Date: 12/19/23 22:48

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Aluminum	**7429-90-5**	**331**		**32.1**
Antimony	**7440-36-0**	**0.131**	SL	**0.0441**
Arsenic	**7440-38-2**	**0.105**		**0.00954**
Barium	**7440-39-3**	**5.99**		**0.947**
Beryllium	**7440-41-7**	**0.0144**		**0.00332**
Cadmium	7440-43-9	0.00875	U	0.109
Calcium	**7440-70-2**	**584**	QB-01	**292**
Chromium	**7440-47-3**	**2.20**		**2.03**
Cobalt	**7440-48-4**	**0.222**	QB-01	**0.0156**
Copper	**7440-50-8**	**59.3**		**3.00**
Iron	**7439-89-6**	**421**		**24.2**
Lead	**7439-92-1**	**0.358**		**0.276**
Magnesium	**7439-95-4**	**282**		**96.3**
Manganese	**7439-96-5**	**11.9**		**1.19**
Molybdenum	**7439-98-7**	**1.60**	QB-01	**0.213**
Nickel	7440-02-0	0.798	U	0.800
Phosphorus	7723-14-0	404	U, GC-BS, LJ, QX	1250
Potassium	**7440-09-7**	**114**		**38.0**
Rubidium	**7440-17-7**	**0.159**		**0.0183**
Selenium	**7782-49-2**	**0.197**	LJ, QX	**0.0110**
Sodium	**7440-23-5**	**2470**	E, GC-BS	**2000**
Strontium	**7440-24-6**	**3.63**	QB-01	**0.651**
Thallium	**7440-28-0**	**9.24E-4**		**5.03E-4**
Thorium	**7440-29-01**	**0.0131**		**0.00300**
Uranium	7440-61-1	0.00947	U	0.0170
Vanadium	**7440-62-2**	**1.77**		**0.0492**
Zinc	7440-66-6	34.7	U	97.6

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 #: 0000.00
REPORTED: 12/21/23 13:36
SUBMITTED: 12/18/23
AQS SITE CODE:
SITE CODE: Maui fires

Description: TetraTech Q9533945 FB
Matrix: Air
Lab ID: 3121831-04
Sample Volume: 2024.203 m³
Filter ID:
Sampled: 12/11/23 00:00
Received: 12/18/23 12:00
Analysis Date: 12/19/23 23:03

Comments: MFK-FB01-121123-HM Field Blank

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Aluminum	7429-90-5	9.90	U	25.8
Antimony	7440-36-0	0.00736	U, SL	0.0354
Arsenic	7440-38-2	0.00599	U	0.00768
Barium	7440-39-3	0.635	U	0.762
Beryllium	7440-41-7	8.48E-4	U	0.00267
Cadmium	7440-43-9	0.00291	U	0.0876
Calcium	**7440-70-2**	**305**	FB-01, QB-01	**235**
Chromium	7440-47-3	1.49	U	1.63
Cobalt	**7440-48-4**	**0.0286**	FB-01, QB-01	**0.0125**
Copper	7440-50-8	0.409	U	2.41
Iron	7439-89-6	13.6	U	19.5
Lead	7439-92-1	0.0542	U	0.222
Magnesium	7439-95-4	36.7	U	77.5
Manganese	7439-96-5	0.211	U	0.956
Molybdenum	**7439-98-7**	**0.239**	FB-01, QB-01	**0.171**
Nickel	7440-02-0	0.269	U	0.644
Phosphorus	7723-14-0	294	U, GC-BS, LJ, QX	1000
Potassium	7440-09-7	12.7	U	30.5
Rubidium	7440-17-7	0.0118	U	0.0147
Selenium	7782-49-2	0.00367	U, LJ, QX	0.00884
Sodium	7440-23-5	638	U, GC-BS	1610
Strontium	**7440-24-6**	**0.549**	FB-01, QB-01	**0.524**
Thallium	7440-28-0	1.23E-4	U	4.04E-4
Thorium	7440-29-01	0.00172	U	0.00241
Uranium	7440-61-1	0.00151	U	0.0137
Vanadium	7440-62-2	0.0100	U	0.0395
Zinc	7440-66-6	22.3	U	78.5

CERTIFICATE OF ANALYSIS

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

FILE #: 0000.00
REPORTED: 12/21/23 13:36
SUBMITTED: 12/18/23
AQS SITE CODE:
SITE CODE: Maui fires

Description: TetraTech Q9533932
Matrix: Air
Comments: MFK-AM01-121223-HM

Lab ID: 3121831-05
Sample Volume: 2065.514 m³
Filter ID:

Sampled: 12/12/23 23:59
Received: 12/18/23 12:00
Analysis Date: 12/19/23 23:17

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Aluminum	**7429-90-5**	**1090**	E	**25.3**
Antimony	**7440-36-0**	**0.0606**	SL	**0.0347**
Arsenic	**7440-38-2**	**0.564**		**0.00752**
Barium	**7440-39-3**	**7.59**		**0.747**
Beryllium	**7440-41-7**	**0.0320**		**0.00262**
Cadmium	7440-43-9	0.0124	U	0.0859
Calcium	**7440-70-2**	**619**	QB-01	**230**
Chromium	**7440-47-3**	**2.42**		**1.60**
Cobalt	**7440-48-4**	**0.437**	QB-01	**0.0123**
Copper	**7440-50-8**	**14.6**		**2.36**
Iron	**7439-89-6**	**1050**		**19.1**
Lead	**7439-92-1**	**0.527**		**0.217**
Magnesium	**7439-95-4**	**233**		**75.9**
Manganese	**7439-96-5**	**27.6**		**0.937**
Molybdenum	**7439-98-7**	**0.813**	QB-01	**0.168**
Nickel	**7440-02-0**	**1.14**		**0.631**
Phosphorus	7723-14-0	351	GC-BS, LJ, QX, U	985
Potassium	**7440-09-7**	**106**		**29.9**
Rubidium	**7440-17-7**	**0.236**		**0.0144**
Selenium	**7782-49-2**	**0.235**	LJ, QX	**0.00866**
Sodium	**7440-23-5**	**1680**	E, GC-BS	**1580**
Strontium	**7440-24-6**	**5.17**	QB-01	**0.514**
Thallium	**7440-28-0**	**0.00162**		**3.96E-4**
Thorium	**7440-29-01**	**0.0243**		**0.00236**
Uranium	**7440-61-1**	**0.0204**		**0.0134**
Vanadium	**7440-62-2**	**2.84**		**0.0388**
Zinc	7440-66-6	23.8	U	77.0

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 #: 0000.00
REPORTED: 12/21/23 13:36
SUBMITTED: 12/18/23
AQS SITE CODE:
SITE CODE: Maui fires

Description: TetraTech Q9533931
Matrix: Air
Comments: MFK-AM02-121223-HM/MS/MSD

Lab ID: 3121831-06
Sample Volume: 2068.806 m³
Filter ID:

Sampled: 12/12/23 23:59
Received: 12/18/23 12:00
Analysis Date: 12/19/23 19:57

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Aluminum	**7429-90-5**	**768**	E, QM-4X	**25.2**
Antimony	**7440-36-0**	**0.0597**	SL	**0.0347**
Arsenic	**7440-38-2**	**0.326**		**0.00751**
Barium	**7440-39-3**	**7.09**		**0.746**
Beryllium	**7440-41-7**	**0.0257**		**0.00261**
Cadmium	**7440-43-9**	**0.191**	LJ, QX	**0.0857**
Calcium	**7440-70-2**	**652**	QB-01, QM-4X	**230**
Chromium	**7440-47-3**	**2.08**		**1.60**
Cobalt	**7440-48-4**	**0.361**	QB-01	**0.0123**
Copper	**7440-50-8**	**16.1**	QM-07	**2.36**
Iron	**7439-89-6**	**777**	QM-4X	**19.0**
Lead	**7439-92-1**	**0.423**		**0.217**
Magnesium	**7439-95-4**	**242**		**75.8**
Manganese	**7439-96-5**	**19.6**		**0.936**
Molybdenum	**7439-98-7**	**0.987**	QB-01	**0.168**
Nickel	**7440-02-0**	**0.887**		**0.630**
Phosphorus	7723-14-0	336	GC-BS, LJ, QX, U	983
Potassium	**7440-09-7**	**119**		**29.9**
Rubidium	**7440-17-7**	**0.222**		**0.0144**
Selenium	**7782-49-2**	**0.197**	LJ, QX	**0.00865**
Sodium	**7440-23-5**	**1750**	E, GC-BS, QM-4X	**1570**
Strontium	**7440-24-6**	**4.93**	QB-01	**0.513**
Thallium	**7440-28-0**	**0.00139**		**3.96E-4**
Thorium	**7440-29-01**	**0.0213**	QM-07	**0.00236**
Uranium	**7440-61-1**	**0.0168**		**0.0134**
Vanadium	**7440-62-2**	**2.42**		**0.0387**
Zinc	7440-66-6	35.3	U	76.8

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 #: 0000.00
REPORTED: 12/21/23 13:36
SUBMITTED: 12/18/23
AQS SITE CODE:
SITE CODE: Maui fires

Description: TetraTech Q9533930
Matrix: Air
Comments: MFK-AM03-121223-HM

Lab ID: 3121831-07
Sample Volume: 1969.662 m³
Filter ID:

Sampled: 12/12/23 23:59
Received: 12/18/23 12:00
Analysis Date: 12/19/23 23:31

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Aluminum	**7429-90-5**	**593**		**26.5**
Antimony	**7440-36-0**	**0.0915**	SL	**0.0364**
Arsenic	**7440-38-2**	**0.166**		**0.00789**
Barium	**7440-39-3**	**7.93**		**0.783**
Beryllium	**7440-41-7**	**0.0262**		**0.00274**
Cadmium	7440-43-9	0.0108	U	0.0900
Calcium	**7440-70-2**	**792**	QB-01	**241**
Chromium	**7440-47-3**	**2.12**		**1.68**
Cobalt	**7440-48-4**	**0.353**	QB-01	**0.0129**
Copper	**7440-50-8**	**37.4**		**2.48**
Iron	**7439-89-6**	**682**		**20.0**
Lead	**7439-92-1**	**0.576**		**0.228**
Magnesium	**7439-95-4**	**268**		**79.6**
Manganese	**7439-96-5**	**21.1**		**0.983**
Molybdenum	**7439-98-7**	**0.908**	QB-01	**0.176**
Nickel	**7440-02-0**	**0.881**		**0.662**
Phosphorus	7723-14-0	362	GC-BS, LJ, QX, U	1030
Potassium	**7440-09-7**	**120**		**31.4**
Rubidium	**7440-17-7**	**0.222**		**0.0151**
Selenium	**7782-49-2**	**0.179**	LJ, QX	**0.00909**
Sodium	**7440-23-5**	**1980**	E, GC-BS	**1650**
Strontium	**7440-24-6**	**5.37**	QB-01	**0.539**
Thallium	**7440-28-0**	**0.00138**		**4.15E-4**
Thorium	**7440-29-01**	**0.0179**		**0.00248**
Uranium	**7440-61-1**	**0.0154**		**0.0140**
Vanadium	**7440-62-2**	**2.10**		**0.0406**
Zinc	7440-66-6	35.4	U	80.7

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 #: 0000.00
REPORTED: 12/21/23 13:36
SUBMITTED: 12/18/23
AQS SITE CODE:
SITE CODE: Maui fires

Description: TetraTech Q9533939 FB
Matrix: Air
Lab ID: 3121831-08
Sample Volume: 2065.514 m³
Filter ID:
Sampled: 12/12/23 00:00
Received: 12/18/23 12:00
Analysis Date: 12/19/23 23:47

Comments: MFK-FB01-121223-HM Field Blank

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Aluminum	7429-90-5	14.7	U	25.3
Antimony	7440-36-0	0.00728	SL, U	0.0347
Arsenic	7440-38-2	0.00532	U	0.00752
Barium	**7440-39-3**	**0.813**	FB-01	**0.747**
Beryllium	7440-41-7	0.00106	U	0.00262
Cadmium	7440-43-9	0.00293	U	0.0859
Calcium	**7440-70-2**	**279**	FB-01, QB-01	**230**
Chromium	7440-47-3	1.47	U	1.60
Cobalt	**7440-48-4**	**0.0239**	FB-01, QB-01	**0.0123**
Copper	7440-50-8	0.662	U	2.36
Iron	7439-89-6	16.8	U	19.1
Lead	7439-92-1	0.0590	U	0.217
Magnesium	7439-95-4	39.6	U	75.9
Manganese	7439-96-5	0.278	U	0.937
Molybdenum	**7439-98-7**	**0.231**	FB-01, QB-01	**0.168**
Nickel	7440-02-0	0.314	U	0.631
Phosphorus	7723-14-0	290	GC-BS, LJ, QX, U	985
Potassium	**7440-09-7**	**41.8**	FB-01	**29.9**
Rubidium	**7440-17-7**	**0.0161**	FB-01	**0.0144**
Selenium	7782-49-2	0.00478	LJ, QX, U	0.00866
Sodium	7440-23-5	675	GC-BS, U	1580
Strontium	**7440-24-6**	**0.549**	FB-01, QB-01	**0.514**
Thallium	7440-28-0	1.13E-4	U	3.96E-4
Thorium	7440-29-01	0.00210	U	0.00236
Uranium	7440-61-1	0.00160	U	0.0134
Vanadium	7440-62-2	0.0181	U	0.0388
Zinc	7440-66-6	19.5	U	77.0

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 #: 0000.00
REPORTED: 12/21/23 13:36
SUBMITTED: 12/18/23
AQS SITE CODE:
SITE CODE: Maui fires

Description: TetraTech Q9533944
Matrix: Air
Comments: MFK-AM01-121323-HM

Lab ID: 3121831-09
Sample Volume: 2065.514 m³
Filter ID:

Sampled: 12/13/23 23:59
Received: 12/18/23 12:00
Analysis Date: 12/20/23 00:01

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Aluminum	**7429-90-5**	**1390**	E	**25.3**
Antimony	**7440-36-0**	**0.0688**	SL	**0.0347**
Arsenic	**7440-38-2**	**0.318**		**0.00752**
Barium	**7440-39-3**	**10.3**		**0.747**
Beryllium	**7440-41-7**	**0.0448**	R-F	**0.00262**
Cadmium	7440-43-9	0.0169	U	0.0859
Calcium	**7440-70-2**	**808**	QB-01	**230**
Chromium	**7440-47-3**	**2.60**		**1.60**
Cobalt	**7440-48-4**	**0.636**	QB-01	**0.0123**
Copper	**7440-50-8**	**18.1**		**2.36**
Lead	**7439-92-1**	**0.625**		**0.217**
Magnesium	**7439-95-4**	**293**		**75.9**
Manganese	**7439-96-5**	**38.8**		**0.937**
Molybdenum	**7439-98-7**	**0.994**	QB-01	**0.168**
Nickel	**7440-02-0**	**1.22**		**0.631**
Phosphorus	7723-14-0	382	GC-BS, LJ, QX, U	985
Potassium	**7440-09-7**	**142**		**29.9**
Rubidium	**7440-17-7**	**0.315**		**0.0144**
Selenium	**7782-49-2**	**0.253**	LJ, QX	**0.00866**
Sodium	**7440-23-5**	**1910**	E, GC-BS	**1580**
Strontium	**7440-24-6**	**7.35**	QB-01	**0.514**
Thallium	**7440-28-0**	**0.00218**		**3.96E-4**
Thorium	**7440-29-01**	**0.0369**		**0.00236**
Uranium	**7440-61-1**	**0.0273**		**0.0134**
Vanadium	**7440-62-2**	**3.57**		**0.0388**
Zinc	7440-66-6	26.8	U	77.0

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 #: 0000.00
REPORTED: 12/21/23 13:36
SUBMITTED: 12/18/23
AQS SITE CODE:
SITE CODE: Maui fires

Description: TetraTech Q9533944
Matrix: Air
Comments: MFK-AM01-121323-HM

Lab ID: 3121831-09RE1
Sample Volume: 2065.514 m³
Filter ID:

Sampled: 12/13/23 23:59
Received: 12/18/23 12:00
Analysis Date: 12/21/23 00:16

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Iron	**7439-89-6**	**1330**	D	**38.1**

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FILE #: 0000.00
REPORTED: 12/21/23 13:36
SUBMITTED: 12/18/23
AQS SITE CODE:
SITE CODE: Maui fires

Description: TetraTech Q9533943
Matrix: Air
Comments: MFK-AM02-121323-HM

Lab ID: 3121831-10
Sample Volume: 2070.53 m³
Filter ID:

Sampled: 12/13/23 23:59
Received: 12/18/23 12:00
Analysis Date: 12/20/23 00:32

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Aluminum	**7429-90-5**	**832**	E	**25.2**
Antimony	**7440-36-0**	**0.0454**	SL	**0.0347**
Arsenic	**7440-38-2**	**0.254**		**0.00750**
Barium	**7440-39-3**	**7.08**		**0.745**
Beryllium	**7440-41-7**	**0.0268**		**0.00261**
Cadmium	7440-43-9	0.0258	U	0.0857
Calcium	**7440-70-2**	**659**	QB-01	**229**
Chromium	**7440-47-3**	**2.19**		**1.60**
Cobalt	**7440-48-4**	**0.421**	QB-01	**0.0123**
Copper	**7440-50-8**	**23.8**		**2.36**
Iron	**7439-89-6**	**896**		**19.0**
Lead	**7439-92-1**	**0.519**		**0.217**
Magnesium	**7439-95-4**	**279**		**75.8**
Manganese	**7439-96-5**	**23.5**		**0.935**
Molybdenum	**7439-98-7**	**1.21**	QB-01	**0.167**
Nickel	**7440-02-0**	**0.920**		**0.629**
Phosphorus	7723-14-0	341	GC-BS, LJ, QX, U	982
Potassium	**7440-09-7**	**139**		**29.9**
Rubidium	**7440-17-7**	**0.269**		**0.0144**
Selenium	**7782-49-2**	**0.194**	LJ, QX	**0.00864**
Sodium	**7440-23-5**	**1990**	E, GC-BS	**1570**
Strontium	**7440-24-6**	**5.46**	QB-01	**0.512**
Thallium	**7440-28-0**	**0.00132**		**3.95E-4**
Thorium	**7440-29-01**	**0.0259**		**0.00236**
Uranium	**7440-61-1**	**0.0177**		**0.0134**
Vanadium	**7440-62-2**	**2.52**		**0.0387**
Zinc	7440-66-6	20.4	U	76.8

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

FILE #: 0000.00
REPORTED: 12/21/23 13:36
SUBMITTED: 12/18/23
AQS SITE CODE:
SITE CODE: Maui fires

Description: TetraTech Q9533941
Matrix: Air
Comments: MFK-AM03-121323-HM

Lab ID: 3121831-11
Sample Volume: 1791.68 m³
Filter ID:

Sampled: 12/13/23 23:59
Received: 12/18/23 12:00
Analysis Date: 12/20/23 01:20

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Aluminum	**7429-90-5**	**811**	E	**29.1**
Antimony	**7440-36-0**	**0.0871**	SL	**0.0400**
Arsenic	**7440-38-2**	**0.163**		**0.00867**
Barium	**7440-39-3**	**10.3**		**0.861**
Beryllium	**7440-41-7**	**0.0340**		**0.00301**
Cadmium	7440-43-9	0.0133	U	0.0990
Calcium	**7440-70-2**	**714**	QB-01	**265**
Chromium	**7440-47-3**	**2.62**		**1.84**
Cobalt	**7440-48-4**	**0.472**	QB-01	**0.0142**
Copper	**7440-50-8**	**41.8**		**2.72**
Iron	**7439-89-6**	**978**		**22.0**
Lead	**7439-92-1**	**0.464**		**0.251**
Magnesium	**7439-95-4**	**302**		**87.5**
Manganese	**7439-96-5**	**30.1**		**1.08**
Molybdenum	**7439-98-7**	**1.14**	QB-01	**0.193**
Nickel	**7440-02-0**	**1.02**		**0.727**
Phosphorus	7723-14-0	391	QX, GC-BS, LJ, U	1140
Potassium	**7440-09-7**	**152**		**34.5**
Rubidium	**7440-17-7**	**0.286**		**0.0166**
Selenium	**7782-49-2**	**0.208**	LJ, QX	**0.00999**
Sodium	**7440-23-5**	**2150**	E, GC-BS	**1820**
Strontium	**7440-24-6**	**6.11**	QB-01	**0.592**
Thallium	**7440-28-0**	**0.00180**		**4.57E-4**
Thorium	**7440-29-01**	**0.0350**		**0.00272**
Uranium	**7440-61-1**	**0.0213**		**0.0154**
Vanadium	**7440-62-2**	**2.55**		**0.0447**
Zinc	7440-66-6	26.9	U	88.7

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

FILE #: 0000.00
REPORTED: 12/21/23 13:36
SUBMITTED: 12/18/23
AQS SITE CODE:
SITE CODE: Maui fires

Description: TetraTech Q9533936 FB
Matrix: Air
Lab ID: 3121831-12
Sample Volume: 2065.514 m³
Filter ID:
Sampled: 12/13/23 00:00
Received: 12/18/23 12:00
Analysis Date: 12/20/23 01:38

Comments: MFK-FB01-121323-HM Field Blank

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Aluminum	7429-90-5	14.2	U	25.3
Antimony	7440-36-0	0.00651	SL, U	0.0347
Arsenic	7440-38-2	0.00618	U	0.00752
Barium	7440-39-3	0.631	U	0.747
Beryllium	7440-41-7	9.55E-4	U	0.00262
Cadmium	7440-43-9	0.00268	U	0.0859
Calcium	**7440-70-2**	**269**	FB-01, QB-01	**230**
Chromium	7440-47-3	1.44	U	1.60
Cobalt	**7440-48-4**	**0.0277**	FB-01, QB-01	**0.0123**
Copper	7440-50-8	1.76	U	2.36
Iron	7439-89-6	16.5	U	19.1
Lead	7439-92-1	0.0979	U	0.217
Magnesium	7439-95-4	39.5	U	75.9
Manganese	7439-96-5	0.260	U	0.937
Molybdenum	**7439-98-7**	**0.249**	FB-01, QB-01	**0.168**
Nickel	7440-02-0	0.269	U	0.631
Phosphorus	7723-14-0	292	GC-BS, LJ, QX, U	985
Potassium	**7440-09-7**	**36.8**	FB-01	**29.9**
Rubidium	7440-17-7	0.0140	U	0.0144
Selenium	7782-49-2	0.00248	LJ, QX, U	0.00866
Sodium	7440-23-5	651	GC-BS, U	1580
Strontium	**7440-24-6**	**0.563**	FB-01, QB-01	**0.514**
Thallium	7440-28-0	7.40E-5	U	3.96E-4
Thorium	7440-29-01	0.00212	U	0.00236
Uranium	7440-61-1	0.00161	U	0.0134
Vanadium	7440-62-2	0.0103	U	0.0388
Zinc	7440-66-6	14.4	U	77.0

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

FILE #: 0000.00
REPORTED: 12/21/23 13:36
SUBMITTED: 12/18/23
AQS SITE CODE:
SITE CODE: Maui 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 2312060 - B3L1903										
Calibration Blank (2312060-CCB1)				Prepared & Analyzed: 12/19/23						
Aluminum	41.9		ng/l							
Antimony	1.56		ng/l							
Arsenic	5.70		ng/l							
Barium	3.15		ng/l							
Beryllium	0.236		ng/l							
Cadmium	0.292		ng/l							
Calcium	628		ng/l							
Chromium	5.59		ng/l							
Cobalt	0.468		ng/l							
Copper	41.3		ng/l							
Iron	149		ng/l							
Lead	11.3		ng/l							
Magnesium	68.9		ng/l							
Manganese	7.99		ng/l							
Molybdenum	21.6		ng/l							
Nickel	-3.11		ng/l							U
Phosphorus	556		ng/l							LJ, QX
Potassium	579		ng/l							
Rubidium	-0.331		ng/l							U
Selenium	-4.19		ng/l							LJ, QX, U
Sodium	84.5		ng/l							
Strontium	0.0166		ng/l							
Thallium	0.459		ng/l							
Thorium	0.354		ng/l							
Uranium	-0.00917		ng/l							U
Vanadium	-70.5		ng/l							U
Zinc	-10.6		ng/l							U
Calibration Blank (2312060-CCB2)				Prepared & Analyzed: 12/19/23						
Aluminum	8.82		ng/l							
Antimony	0.743		ng/l							
Arsenic	8.28		ng/l							
Barium	2.83		ng/l							
Beryllium	0.0551		ng/l							
Cadmium	0.396		ng/l							
Calcium	228		ng/l							
Chromium	5.08		ng/l							
Cobalt	0.647		ng/l							
Copper	38.4		ng/l							

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FILE #: 0000.00
REPORTED: 12/21/23 13:36
SUBMITTED: 12/18/23
AQS SITE CODE:
SITE CODE: Maui fires

Inorganics by Compendium Method IO-3.5 - Quality Control

Batch 2312060 - B3L1903

Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Calibration Blank (2312060-CCB2) Contin				Prepared & Analyzed: 12/19/23						
Iron	104		ng/l							
Lead	8.82		ng/l							
Magnesium	50.5		ng/l							
Manganese	6.55		ng/l							
Molybdenum	7.15		ng/l							
Nickel	-7.16		ng/l							U
Phosphorus	46.4		ng/l							LJ, QX
Potassium	1010		ng/l							
Rubidium	0.614		ng/l							
Selenium	8.87		ng/l							LJ, QX
Sodium	168		ng/l							
Strontium	-0.374		ng/l							U
Thallium	0.446		ng/l							
Thorium	0.619		ng/l							
Uranium	-0.0147		ng/l							U
Vanadium	-80.3		ng/l							U
Zinc	-19.9		ng/l							U
Calibration Blank (2312060-CCB3)				Prepared: 12/19/23 Analyzed: 12/20/23						
Aluminum	70.7		ng/l							
Antimony	0.629		ng/l							
Arsenic	7.63		ng/l							
Barium	2.65		ng/l							
Beryllium	0.0865		ng/l							
Cadmium	0.428		ng/l							
Calcium	502		ng/l							
Chromium	4.16		ng/l							
Cobalt	0.379		ng/l							
Copper	28.8		ng/l							
Iron	208		ng/l							
Lead	8.29		ng/l							
Magnesium	47.3		ng/l							
Manganese	6.04		ng/l							
Molybdenum	7.64		ng/l							
Nickel	-0.814		ng/l							U
Phosphorus	241		ng/l							LJ, QX
Potassium	1570		ng/l							
Rubidium	-0.0825		ng/l							U
Selenium	-4.95		ng/l							LJ, QX, U

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FILE #: 0000.00
REPORTED: 12/21/23 13:36
SUBMITTED: 12/18/23
AQS SITE CODE:
SITE CODE: Maui 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 2312060 - B3L1903										
Calibration Blank (2312060-CCB3) Contin				Prepared: 12/19/23 Analyzed: 12/20/23						
Sodium	524		ng/l							
Strontium	-0.403		ng/l							U
Thallium	0.345		ng/l							
Thorium	0.410		ng/l							
Uranium	0.0103		ng/l							
Vanadium	-76.4		ng/l							U
Zinc	6.16		ng/l							
Calibration Blank (2312060-CCB4)				Prepared: 12/19/23 Analyzed: 12/20/23						
Aluminum	23.5		ng/l							
Antimony	1.24		ng/l							
Arsenic	5.78		ng/l							
Barium	3.58		ng/l							
Beryllium	0.222		ng/l							
Cadmium	0.561		ng/l							
Calcium	1170		ng/l							
Chromium	5.06		ng/l							
Cobalt	0.711		ng/l							
Copper	33.3		ng/l							
Iron	157		ng/l							
Lead	7.96		ng/l							
Magnesium	37.5		ng/l							
Manganese	6.86		ng/l							
Molybdenum	7.18		ng/l							
Nickel	-1.39		ng/l							U
Phosphorus	58.9		ng/l							LJ, QX
Potassium	1830		ng/l							
Rubidium	0.0329		ng/l							
Selenium	-1.43		ng/l							LJ, QX, U
Sodium	345		ng/l							
Strontium	0.234		ng/l							
Thallium	0.419		ng/l							
Thorium	0.187		ng/l							
Uranium	-0.0332		ng/l							U
Vanadium	-82.0		ng/l							U
Zinc	-14.0		ng/l							U
Calibration Check (2312060-CCV1)				Prepared & Analyzed: 12/19/23						
Aluminum	1.61E6		ng/l	1.5000E6		107	90-110			
Antimony	20300		ng/l	20000		101	90-110			

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FILE #: 0000.00
REPORTED: 12/21/23 13:36
SUBMITTED: 12/18/23
AQS SITE CODE:
SITE CODE: Maui 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 2312060 - B3L1903										
Calibration Check (2312060-CCV1) Contin				Prepared & Analyzed: 12/19/23						
Arsenic	20100		ng/l	20000		100	90-110			
Barium	201000		ng/l	200000		101	90-110			
Beryllium	5180		ng/l	5000.0		104	90-110			
Cadmium	20400		ng/l	20000		102	90-110			
Calcium	2.58E7		ng/l	2.5000E7		103	90-110			
Chromium	240000		ng/l	240000		99.8	90-110			
Cobalt	51900		ng/l	50000		104	90-110			
Copper	2.07E6		ng/l	2.0000E6		104	90-110			
Iron	2.60E6		ng/l	2.5000E6		104	90-110			
Lead	202000		ng/l	200000		101	90-110			
Magnesium	1.08E6		ng/l	1.0000E6		108	90-110			
Manganese	519000		ng/l	500000		104	90-110			
Molybdenum	50100		ng/l	50000		100	90-110			
Nickel	125000		ng/l	120000		104	90-110			
Phosphorus	213000		ng/l	200000		107	90-110			LJ, QX
Potassium	2.64E6		ng/l	2.5000E6		105	90-110			
Rubidium	9980		ng/l	10000		99.8	90-110			
Selenium	20100		ng/l	20000		101	90-110			LJ, QX
Sodium	2.69E6		ng/l	2.5000E6		108	90-110			
Strontium	49800		ng/l	50000		99.6	90-110			
Thallium	504		ng/l	500.00		101	90-110			
Thorium	496		ng/l	500.00		99.2	90-110			
Uranium	500		ng/l	500.00		100	90-110			
Vanadium	19900		ng/l	20000		99.5	90-110			
Zinc	535000		ng/l	500000		107	90-110			
Calibration Check (2312060-CCV2)				Prepared & Analyzed: 12/19/23						
Aluminum	1.51E6		ng/l	1.5000E6		101	90-110			
Antimony	19600		ng/l	20000		98.1	90-110			
Arsenic	19700		ng/l	20000		98.6	90-110			
Barium	195000		ng/l	200000		97.7	90-110			
Beryllium	5060		ng/l	5000.0		101	90-110			
Cadmium	19900		ng/l	20000		99.3	90-110			
Calcium	2.45E7		ng/l	2.5000E7		97.9	90-110			
Chromium	236000		ng/l	240000		98.2	90-110			
Cobalt	50100		ng/l	50000		100	90-110			
Copper	2.01E6		ng/l	2.0000E6		100	90-110			
Iron	2.52E6		ng/l	2.5000E6		101	90-110			
Lead	197000		ng/l	200000		98.3	90-110			

CERTIFICATE OF ANALYSIS

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Blue Bell, PA 19422
ATTN: Ms. Chelsea Saber
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FILE #: 0000.00
REPORTED: 12/21/23 13:36
SUBMITTED: 12/18/23
AQS SITE CODE:
SITE CODE: Maui 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 2312060 - B3L1903										
Calibration Check (2312060-CCV2) Contin				Prepared & Analyzed: 12/19/23						
Magnesium	1.03E6		ng/l	1.0000E6		103	90-110			
Manganese	507000		ng/l	500000		101	90-110			
Molybdenum	48600		ng/l	50000		97.1	90-110			
Nickel	120000		ng/l	120000		100	90-110			
Phosphorus	204000		ng/l	200000		102	90-110			LJ, QX
Potassium	2.52E6		ng/l	2.5000E6		101	90-110			
Rubidium	9800		ng/l	10000		98.0	90-110			
Selenium	19800		ng/l	20000		99.2	90-110			LJ, QX
Sodium	2.59E6		ng/l	2.5000E6		104	90-110			
Strontium	48500		ng/l	50000		97.0	90-110			
Thallium	488		ng/l	500.00		97.6	90-110			
Thorium	477		ng/l	500.00		95.4	90-110			
Uranium	478		ng/l	500.00		95.6	90-110			
Vanadium	19500		ng/l	20000		97.3	90-110			
Zinc	520000		ng/l	500000		104	90-110			
Calibration Check (2312060-CCV3)				Prepared: 12/19/23 Analyzed: 12/20/23						
Aluminum	1.57E6		ng/l	1.5000E6		105	90-110			
Antimony	20200		ng/l	20000		101	90-110			
Arsenic	20200		ng/l	20000		101	90-110			
Barium	199000		ng/l	200000		99.4	90-110			
Beryllium	4720		ng/l	5000.0		94.4	90-110			
Cadmium	20500		ng/l	20000		102	90-110			
Calcium	2.54E7		ng/l	2.5000E7		102	90-110			
Chromium	243000		ng/l	240000		101	90-110			
Cobalt	51400		ng/l	50000		103	90-110			
Copper	2.07E6		ng/l	2.0000E6		104	90-110			
Iron	2.59E6		ng/l	2.5000E6		104	90-110			
Lead	201000		ng/l	200000		101	90-110			
Magnesium	1.07E6		ng/l	1.0000E6		107	90-110			
Manganese	520000		ng/l	500000		104	90-110			
Molybdenum	50600		ng/l	50000		101	90-110			
Nickel	124000		ng/l	120000		103	90-110			
Phosphorus	209000		ng/l	200000		105	90-110			LJ, QX
Potassium	2.61E6		ng/l	2.5000E6		104	90-110			
Rubidium	10000		ng/l	10000		100	90-110			
Selenium	20100		ng/l	20000		101	90-110			LJ, QX
Sodium	2.69E6		ng/l	2.5000E6		108	90-110			
Strontium	49900		ng/l	50000		99.7	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 #: 0000.00
REPORTED: 12/21/23 13:36
SUBMITTED: 12/18/23
AQS SITE CODE:
SITE CODE: Maui 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 2312060 - B3L1903										
Calibration Check (2312060-CCV3) Contin				Prepared: 12/19/23 Analyzed: 12/20/23						
Thallium	490		ng/l	500.00		98.0	90-110			
Thorium	488		ng/l	500.00		97.6	90-110			
Uranium	486		ng/l	500.00		97.1	90-110			
Vanadium	20000		ng/l	20000		99.8	90-110			
Zinc	533000		ng/l	500000		107	90-110			
Calibration Check (2312060-CCV4)				Prepared: 12/19/23 Analyzed: 12/20/23						
Aluminum	1.55E6		ng/l	1.5000E6		103	90-110			
Antimony	20100		ng/l	20000		101	90-110			
Arsenic	20000		ng/l	20000		100	90-110			
Barium	197000		ng/l	200000		98.7	90-110			
Beryllium	5010		ng/l	5000.0		100	90-110			
Cadmium	20300		ng/l	20000		102	90-110			
Calcium	2.52E7		ng/l	2.5000E7		101	90-110			
Chromium	240000		ng/l	240000		99.8	90-110			
Cobalt	50600		ng/l	50000		101	90-110			
Copper	2.04E6		ng/l	2.0000E6		102	90-110			
Iron	2.55E6		ng/l	2.5000E6		102	90-110			
Lead	199000		ng/l	200000		99.7	90-110			
Magnesium	1.04E6		ng/l	1.0000E6		104	90-110			
Manganese	514000		ng/l	500000		103	90-110			
Molybdenum	49800		ng/l	50000		99.6	90-110			
Nickel	122000		ng/l	120000		102	90-110			
Phosphorus	201000		ng/l	200000		101	90-110			LJ, QX
Potassium	2.60E6		ng/l	2.5000E6		104	90-110			
Rubidium	9980		ng/l	10000		99.8	90-110			
Selenium	20100		ng/l	20000		101	90-110			LJ, QX
Sodium	2.62E6		ng/l	2.5000E6		105	90-110			
Strontium	49700		ng/l	50000		99.3	90-110			
Thallium	497		ng/l	500.00		99.4	90-110			
Thorium	483		ng/l	500.00		96.7	90-110			
Uranium	487		ng/l	500.00		97.4	90-110			
Vanadium	19800		ng/l	20000		99.0	90-110			
Zinc	528000		ng/l	500000		106	90-110			
High Cal Check (2312060-HCV1)				Prepared & Analyzed: 12/19/23						
Aluminum	3.00E6		ng/l	3.0000E6		99.9	95-105			
Antimony	40300		ng/l	40000		101	95-105			
Arsenic	40200		ng/l	40000		101	95-105			
Barium	405000		ng/l	400000		101	95-105			

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2312060 - B3L1903										
High Cal Check (2312060-HCV1) Continue				Prepared & Analyzed: 12/19/23						
Beryllium	10100		ng/l	10000		101	95-105			
Cadmium	40000		ng/l	40000		100	95-105			
Calcium	5.01E7		ng/l	5.0000E7		100	95-105			
Chromium	478000		ng/l	480000		99.7	95-105			
Cobalt	100000		ng/l	100000		100	95-105			
Copper	3.95E6		ng/l	4.0000E6		98.8	95-105			
Iron	5.02E6		ng/l	5.0000E6		100	95-105			
Lead	403000		ng/l	400000		101	95-105			
Magnesium	1.98E6		ng/l	2.0000E6		98.9	95-105			
Manganese	998000		ng/l	1.0000E6		99.8	95-105			
Molybdenum	100000		ng/l	100000		100	95-105			
Nickel	239000		ng/l	240000		99.6	95-105			
Phosphorus	404000		ng/l	400000		101	95-105			LJ, QX
Potassium	4.99E6		ng/l	5.0000E6		99.8	95-105			
Rubidium	20100		ng/l	20000		101	95-105			
Selenium	40400		ng/l	40000		101	95-105			LJ, QX
Sodium	4.96E6		ng/l	5.0000E6		99.2	95-105			
Strontium	101000		ng/l	100000		101	95-105			
Thallium	1010		ng/l	1000.0		101	95-105			
Thorium	1010		ng/l	1000.0		101	95-105			
Uranium	1010		ng/l	1000.0		101	95-105			
Vanadium	40200		ng/l	40000		101	95-105			
Zinc	985000		ng/l	1.0000E6		98.5	95-105			
Initial Cal Blank (2312060-ICB1)				Prepared & Analyzed: 12/19/23						
Aluminum	-20.4		ng/l							U
Antimony	1.24		ng/l							
Arsenic	1.64		ng/l							
Barium	2.18		ng/l							
Beryllium	0.178		ng/l							
Cadmium	0.347		ng/l							
Calcium	47.8		ng/l							
Chromium	5.14		ng/l							
Cobalt	0.579		ng/l							
Copper	57.7		ng/l							
Iron	81.0		ng/l							
Lead	18.7		ng/l							
Magnesium	13.3		ng/l							
Manganese	10.1		ng/l							

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2312060 - B3L1903										
Initial Cal Blank (2312060-ICB1) Continu				Prepared & Analyzed: 12/19/23						
Molybdenum	11.4		ng/l							
Nickel	-3.89		ng/l							U
Phosphorus	-179		ng/l							LJ, QX, U
Potassium	789		ng/l							
Rubidium	0.0415		ng/l							
Selenium	-4.31		ng/l							LJ, QX, U
Sodium	-174		ng/l							U
Strontium	-0.619		ng/l							U
Thallium	0.459		ng/l							
Thorium	0.532		ng/l							
Uranium	-0.0217		ng/l							U
Vanadium	-78.9		ng/l							U
Zinc	14.9		ng/l							
Initial Cal Check (2312060-ICV1)				Prepared & Analyzed: 12/19/23						
Aluminum	1.43E6		ng/l	1.5000E6		95.6	90-110			
Antimony	19300		ng/l	20000		96.7	90-110			
Arsenic	19700		ng/l	20000		98.6	90-110			
Barium	197000		ng/l	200000		98.4	90-110			
Beryllium	4840		ng/l	5000.0		96.8	90-110			
Cadmium	20100		ng/l	20000		101	90-110			
Calcium	2.42E7		ng/l	2.5000E7		96.9	90-110			
Chromium	233000		ng/l	240000		97.1	90-110			
Cobalt	49500		ng/l	50000		99.1	90-110			
Copper	1.99E6		ng/l	2.0000E6		99.7	90-110			
Iron	2.48E6		ng/l	2.5000E6		99.0	90-110			
Lead	195000		ng/l	200000		97.7	90-110			
Magnesium	972000		ng/l	1.0000E6		97.2	90-110			
Manganese	489000		ng/l	500000		97.8	90-110			
Molybdenum	48800		ng/l	50000		97.6	90-110			
Nickel	118000		ng/l	120000		98.3	90-110			
Phosphorus	200000		ng/l	200000		99.9	90-110			LJ, QX
Potassium	2.51E6		ng/l	2.5000E6		101	90-110			
Rubidium	9700		ng/l	10000		97.0	90-110			
Selenium	20500		ng/l	20000		103	90-110			LJ, QX
Sodium	2.44E6		ng/l	2.5000E6		97.7	90-110			
Strontium	49400		ng/l	50000		98.8	90-110			
Thallium	485		ng/l	500.00		97.0	90-110			
Thorium	476		ng/l	500.00		95.3	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 2312060 - B3L1903										
Initial Cal Check (2312060-ICV1) Continu				Prepared & Analyzed: 12/19/23						
Uranium	483		ng/l	500.00		96.6	90-110			
Vanadium	20000		ng/l	20000		99.8	90-110			
Zinc	522000		ng/l	500000		104	90-110			
Interference Check A (2312060-IFA1)				Prepared & Analyzed: 12/19/23						
Aluminum	1.52E7		ng/l	1.5000E7		101	80-120			
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
Calcium	9.41E7		ng/l	1.0040E8		93.7	80-120			
Chromium	0.00		ng/l				80-120			U
Cobalt	0.00		ng/l				80-120			U
Copper	0.00		ng/l				80-120			U
Iron	1.50E7		ng/l	1.5000E7		99.9	80-120			
Lead	0.00		ng/l				80-120			U
Magnesium	1.57E7		ng/l	1.5000E7		105	80-120			
Manganese	0.00		ng/l				80-120			U
Molybdenum	298000		ng/l	300000		99.3	80-120			
Nickel	0.00		ng/l				80-120			U
Phosphorus	1.65E7		ng/l	1.5000E7		110	80-120			LJ, QX
Potassium	1.51E7		ng/l	1.5000E7		101	80-120			
Rubidium	0.00		ng/l				80-120			U
Selenium	0.00		ng/l				80-120			LJ, QX, U
Sodium	1.60E7		ng/l	1.5000E7		107	80-120			
Strontium	0.00		ng/l				80-120			U
Thallium	0.00		ng/l				80-120			U
Thorium	0.00		ng/l				80-120			U
Uranium	0.00		ng/l				80-120			U
Vanadium	0.00		ng/l				80-120			U
Zinc	0.00		ng/l				80-120			U
Interference Check B (2312060-IFB1)				Prepared & Analyzed: 12/19/23						
Aluminum	1.77E7		ng/l	1.6500E7		107	80-120			
Antimony	20500		ng/l	20000		102	80-120			
Arsenic	20500		ng/l	20000		103	80-120			
Barium	202000		ng/l	200000		101	80-120			
Beryllium	4910		ng/l	5000.0		98.1	80-120			
Cadmium	19700		ng/l	20000		98.6	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 2312060 - B3L1903										
Interference Check B (2312060-IFB1) Co					Prepared & Analyzed: 12/19/23					
Calcium	1.23E8		ng/l	1.2540E8		97.7	80-120			
Chromium	237000		ng/l	240000		98.7	80-120			
Cobalt	50900		ng/l	50000		102	80-120			
Copper	1.93E6		ng/l	2.0000E6		96.4	80-120			
Iron	1.81E7		ng/l	1.7500E7		104	80-120			
Lead	206000		ng/l	200000		103	80-120			
Magnesium	1.78E7		ng/l	1.6000E7		111	80-120			
Manganese	544000		ng/l	500000		109	80-120			
Molybdenum	346000		ng/l	350000		99.0	80-120			
Nickel	120000		ng/l	120000		99.7	80-120			
Phosphorus	1.79E7		ng/l	1.5200E7		118	80-120			LJ, QX
Potassium	1.85E7		ng/l	1.7500E7		106	80-120			
Rubidium	10200		ng/l	10000		102	80-120			
Selenium	19200		ng/l	20000		96.2	80-120			LJ, QX
Sodium	2.01E7		ng/l	1.7500E7		115	80-120			
Strontium	50500		ng/l	50000		101	80-120			
Thallium	519		ng/l	500.00		104	80-120			
Thorium	544		ng/l	500.00		109	80-120			
Uranium	548		ng/l	500.00		110	80-120			
Vanadium	19500		ng/l	20000		97.3	80-120			
Zinc	494000		ng/l	500000		98.9	80-120			
Serial Dilution (2312060-SRD1)		**Source: 3121831-06**			Prepared & Analyzed: 12/19/23					
Aluminum	772	126	ng/m³ Air		768			0.494	10	
Antimony	ND	0.173	ng/m³ Air		ND				10	SL, U
Arsenic	0.330	0.0376	ng/m³ Air		0.326			1.46	10	
Barium	7.06	3.73	ng/m³ Air		7.09			0.432	10	
Beryllium	0.0272	0.0131	ng/m³ Air		0.0257			5.86	10	
Cadmium	ND	0.429	ng/m³ Air		ND				10	U
Calcium	ND	1150	ng/m³ Air		ND				10	QB-01, U
Chromium	ND	7.98	ng/m³ Air		ND				10	U
Cobalt	0.368	0.0613	ng/m³ Air		0.361			1.80	10	QB-01
Copper	16.5	11.8	ng/m³ Air		16.1			2.87	10	
Iron	788	95.2	ng/m³ Air		777			1.40	10	
Lead	ND	1.09	ng/m³ Air		ND				10	U
Magnesium	ND	379	ng/m³ Air		ND				10	U
Manganese	20.0	4.68	ng/m³ Air		19.6			1.84	10	
Molybdenum	0.992	0.838	ng/m³ Air		0.987			0.415	10	QB-01
Nickel	ND	3.15	ng/m³ Air		ND				10	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 2312060 - B3L1903										
Serial Dilution (2312060-SRD1) Continue Source: 3121831-06 Prepared & Analyzed: 12/19/23										
Phosphorus	ND	4920	ng/m³ Air		ND				10	GC-BS, LJ, QX U
Potassium	ND	149	ng/m³ Air		ND				10	U
Rubidium	0.223	0.0720	ng/m³ Air		0.222			0.354	10	
Selenium	0.193	0.0433	ng/m³ Air		0.197			2.00	10	LJ, QX
Sodium	ND	7860	ng/m³ Air		ND				10	GC-BS, U
Strontium	5.06	2.56	ng/m³ Air		4.93			2.74	10	QB-01
Thallium	ND	0.00198	ng/m³ Air		ND				10	U
Thorium	0.0207	0.0118	ng/m³ Air		0.0213			2.75	10	
Uranium	ND	0.0668	ng/m³ Air		ND				10	U
Vanadium	2.40	0.193	ng/m³ Air		2.42			1.15	10	
Zinc	ND	384	ng/m³ Air		ND				10	U
Batch 2312062 - B3L1903										
Calibration Blank (2312062-CCB1) Prepared & Analyzed: 12/20/23										
Aluminum	-41.2		ng/l							U
Antimony	1.23		ng/l							
Arsenic	-2.22		ng/l							U
Barium	0.571		ng/l							
Beryllium	0.0232		ng/l							
Cadmium	0.565		ng/l							
Calcium	1040		ng/l							
Chromium	8.80		ng/l							
Cobalt	0.403		ng/l							
Copper	13.5		ng/l							
Iron	124		ng/l							
Lead	10.2		ng/l							
Magnesium	6.91		ng/l							
Manganese	7.23		ng/l							
Molybdenum	24.6		ng/l							
Nickel	-0.971		ng/l							U
Phosphorus	-101		ng/l							U
Potassium	-1750		ng/l							U
Rubidium	-0.246		ng/l							U
Selenium	-3.73		ng/l							U
Sodium	-167		ng/l							U
Strontium	1.32		ng/l							
Thallium	0.680		ng/l							
Thorium	0.375		ng/l							

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2312062 - B3L1903										
Calibration Blank (2312062-CCB1) Contin				Prepared & Analyzed: 12/20/23						
Uranium	0.0155		ng/l							
Vanadium	-50.8		ng/l							U
Zinc	-12.2		ng/l							U
Calibration Blank (2312062-CCB2)				Prepared & Analyzed: 12/20/23						
Aluminum	-53.2		ng/l							U
Antimony	1.10		ng/l							
Arsenic	-2.80		ng/l							U
Barium	1.87		ng/l							
Beryllium	-0.0766		ng/l							U
Cadmium	0.387		ng/l							
Calcium	648		ng/l							
Chromium	3.35		ng/l							
Cobalt	0.551		ng/l							
Copper	10.0		ng/l							
Iron	-30.8		ng/l							U
Lead	8.05		ng/l							
Magnesium	-46.8		ng/l							U
Manganese	5.50		ng/l							
Molybdenum	9.41		ng/l							
Nickel	-1.04		ng/l							U
Phosphorus	-67.8		ng/l							U
Potassium	-1790		ng/l							U
Rubidium	0.0293		ng/l							
Selenium	2.64		ng/l							
Sodium	-238		ng/l							U
Strontium	1.39		ng/l							
Thallium	1.18		ng/l							
Thorium	0.353		ng/l							
Uranium	0.0209		ng/l							
Vanadium	-56.7		ng/l							U
Zinc	-9.96		ng/l							U
Calibration Blank (2312062-CCB3)				Prepared & Analyzed: 12/20/23						
Aluminum	-86.6		ng/l							U
Antimony	1.25		ng/l							
Arsenic	-3.85		ng/l							U
Barium	2.48		ng/l							
Beryllium	0.268		ng/l							
Cadmium	0.661		ng/l							

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REPORTED: 12/21/23 13:36
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AQS SITE CODE:
SITE CODE: Maui 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 2312062 - B3L1903										
Calibration Blank (2312062-CCB3) Contin				Prepared & Analyzed: 12/20/23						
Calcium	1910		ng/l							
Chromium	3.48		ng/l							
Cobalt	0.658		ng/l							
Copper	22.5		ng/l							
Iron	-29.5		ng/l							U
Lead	8.45		ng/l							
Magnesium	-32.3		ng/l							U
Manganese	6.14		ng/l							
Molybdenum	9.11		ng/l							
Nickel	0.280		ng/l							
Phosphorus	194		ng/l							
Potassium	-2010		ng/l							U
Rubidium	0.517		ng/l							
Selenium	-6.17		ng/l							U
Sodium	-104		ng/l							U
Strontium	1.33		ng/l							
Thallium	0.582		ng/l							
Thorium	0.377		ng/l							
Uranium	0.00318		ng/l							
Vanadium	-58.4		ng/l							U
Zinc	-31.9		ng/l							U
Calibration Blank (2312062-CCB4)				Prepared: 12/20/23 Analyzed: 12/21/23						
Aluminum	1.73		ng/l							
Antimony	1.71		ng/l							
Arsenic	-4.57		ng/l							U
Barium	2.60		ng/l							
Beryllium	0.103		ng/l							
Cadmium	0.589		ng/l							
Calcium	667		ng/l							
Chromium	3.52		ng/l							
Cobalt	0.872		ng/l							
Copper	20.2		ng/l							
Iron	-1.24		ng/l							U
Lead	10.2		ng/l							
Magnesium	-16.5		ng/l							U
Manganese	7.78		ng/l							
Molybdenum	11.6		ng/l							
Nickel	0.149		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 2312062 - B3L1903										
Calibration Blank (2312062-CCB4) Contin				Prepared: 12/20/23 Analyzed: 12/21/23						
Phosphorus	51.0		ng/l							
Potassium	-2400		ng/l							U
Rubidium	-0.213		ng/l							U
Selenium	0.720		ng/l							
Sodium	-77.4		ng/l							U
Strontium	0.961		ng/l							
Thallium	0.680		ng/l							
Thorium	0.247		ng/l							
Uranium	0.0205		ng/l							
Vanadium	-60.5		ng/l							U
Zinc	-14.0		ng/l							U
Calibration Check (2312062-CCV1)				Prepared & Analyzed: 12/20/23						
Aluminum	1.49E6		ng/l	1.5000E6		99.4	90-110			
Antimony	19300		ng/l	20000		96.7	90-110			
Arsenic	19600		ng/l	20000		97.8	90-110			
Barium	194000		ng/l	200000		96.8	90-110			
Beryllium	5140		ng/l	5000.0		103	90-110			
Cadmium	19400		ng/l	20000		97.2	90-110			
Calcium	2.43E7		ng/l	2.5000E7		97.2	90-110			
Chromium	227000		ng/l	240000		94.7	90-110			
Cobalt	49100		ng/l	50000		98.3	90-110			
Copper	1.97E6		ng/l	2.0000E6		98.7	90-110			
Iron	2.45E6		ng/l	2.5000E6		98.2	90-110			
Lead	193000		ng/l	200000		96.7	90-110			
Magnesium	1.01E6		ng/l	1.0000E6		101	90-110			
Manganese	484000		ng/l	500000		96.8	90-110			
Molybdenum	48400		ng/l	50000		96.7	90-110			
Nickel	118000		ng/l	120000		98.4	90-110			
Phosphorus	195000		ng/l	200000		97.4	90-110			
Potassium	2.49E6		ng/l	2.5000E6		99.7	90-110			
Rubidium	9790		ng/l	10000		97.9	90-110			
Selenium	19700		ng/l	20000		98.5	90-110			
Sodium	2.50E6		ng/l	2.5000E6		99.9	90-110			
Strontium	48000		ng/l	50000		96.0	90-110			
Thallium	488		ng/l	500.00		97.6	90-110			
Thorium	478		ng/l	500.00		95.6	90-110			
Uranium	482		ng/l	500.00		96.5	90-110			
Vanadium	19100		ng/l	20000		95.6	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 2312062 - B3L1903										
Calibration Check (2312062-CCV1) Contin					Prepared & Analyzed: 12/20/23					
Zinc	512000		ng/l	500000		102	90-110			
Calibration Check (2312062-CCV2)					Prepared & Analyzed: 12/20/23					
Aluminum	1.48E6		ng/l	1.5000E6		98.8	90-110			
Antimony	19800		ng/l	20000		99.2	90-110			
Arsenic	20000		ng/l	20000		99.9	90-110			
Barium	198000		ng/l	200000		98.9	90-110			
Beryllium	5370		ng/l	5000.0		107	90-110			
Cadmium	20100		ng/l	20000		101	90-110			
Calcium	2.44E7		ng/l	2.5000E7		97.7	90-110			
Chromium	236000		ng/l	240000		98.2	90-110			
Cobalt	49600		ng/l	50000		99.2	90-110			
Copper	2.03E6		ng/l	2.0000E6		102	90-110			
Iron	2.47E6		ng/l	2.5000E6		98.9	90-110			
Lead	197000		ng/l	200000		98.3	90-110			
Magnesium	1.02E6		ng/l	1.0000E6		102	90-110			
Manganese	492000		ng/l	500000		98.4	90-110			
Molybdenum	49700		ng/l	50000		99.3	90-110			
Nickel	120000		ng/l	120000		99.9	90-110			
Phosphorus	196000		ng/l	200000		97.9	90-110			
Potassium	2.50E6		ng/l	2.5000E6		100	90-110			
Rubidium	9880		ng/l	10000		98.8	90-110			
Selenium	20100		ng/l	20000		100	90-110			
Sodium	2.53E6		ng/l	2.5000E6		101	90-110			
Strontium	49000		ng/l	50000		98.0	90-110			
Thallium	491		ng/l	500.00		98.1	90-110			
Thorium	480		ng/l	500.00		96.1	90-110			
Uranium	484		ng/l	500.00		96.8	90-110			
Vanadium	19600		ng/l	20000		98.1	90-110			
Zinc	527000		ng/l	500000		105	90-110			
Calibration Check (2312062-CCV3)					Prepared & Analyzed: 12/20/23					
Aluminum	1.53E6		ng/l	1.5000E6		102	90-110			
Antimony	20200		ng/l	20000		101	90-110			
Arsenic	20200		ng/l	20000		101	90-110			
Barium	198000		ng/l	200000		99.2	90-110			
Beryllium	5220		ng/l	5000.0		104	90-110			
Cadmium	20600		ng/l	20000		103	90-110			
Calcium	2.51E7		ng/l	2.5000E7		100	90-110			
Chromium	245000		ng/l	240000		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 2312062 - B3L1903										
Calibration Check (2312062-CCV3) Contin					Prepared & Analyzed: 12/20/23					
Cobalt	50800		ng/l	50000		102	90-110			
Copper	2.11E6		ng/l	2.0000E6		106	90-110			
Iron	2.55E6		ng/l	2.5000E6		102	90-110			
Lead	200000		ng/l	200000		100	90-110			
Magnesium	1.05E6		ng/l	1.0000E6		105	90-110			
Manganese	516000		ng/l	500000		103	90-110			
Molybdenum	51300		ng/l	50000		103	90-110			
Nickel	123000		ng/l	120000		103	90-110			
Phosphorus	201000		ng/l	200000		100	90-110			
Potassium	2.57E6		ng/l	2.5000E6		103	90-110			
Rubidium	10000		ng/l	10000		100	90-110			
Selenium	20200		ng/l	20000		101	90-110			
Sodium	2.68E6		ng/l	2.5000E6		107	90-110			
Strontium	49400		ng/l	50000		98.8	90-110			
Thallium	482		ng/l	500.00		96.4	90-110			
Thorium	479		ng/l	500.00		95.8	90-110			
Uranium	486		ng/l	500.00		97.3	90-110			
Vanadium	20000		ng/l	20000		99.9	90-110			
Zinc	538000		ng/l	500000		108	90-110			
Calibration Check (2312062-CCV4)					Prepared: 12/20/23 Analyzed: 12/21/23					
Aluminum	1.53E6		ng/l	1.5000E6		102	90-110			
Antimony	20700		ng/l	20000		103	90-110			
Arsenic	20400		ng/l	20000		102	90-110			
Barium	203000		ng/l	200000		101	90-110			
Beryllium	4860		ng/l	5000.0		97.2	90-110			
Cadmium	21000		ng/l	20000		105	90-110			
Calcium	2.53E7		ng/l	2.5000E7		101	90-110			
Chromium	248000		ng/l	240000		103	90-110			
Cobalt	51100		ng/l	50000		102	90-110			
Copper	2.10E6		ng/l	2.0000E6		105	90-110			
Iron	2.55E6		ng/l	2.5000E6		102	90-110			
Lead	205000		ng/l	200000		102	90-110			
Magnesium	1.04E6		ng/l	1.0000E6		104	90-110			
Manganese	510000		ng/l	500000		102	90-110			
Molybdenum	52400		ng/l	50000		105	90-110			
Nickel	124000		ng/l	120000		103	90-110			
Phosphorus	204000		ng/l	200000		102	90-110			
Potassium	2.55E6		ng/l	2.5000E6		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 2312062 - B3L1903										
Calibration Check (2312062-CCV4) Contin				Prepared: 12/20/23 Analyzed: 12/21/23						
Rubidium	10200		ng/l	10000		102	90-110			
Selenium	20800		ng/l	20000		104	90-110			
Sodium	2.62E6		ng/l	2.5000E6		105	90-110			
Strontium	51000		ng/l	50000		102	90-110			
Thallium	506		ng/l	500.00		101	90-110			
Thorium	502		ng/l	500.00		100	90-110			
Uranium	505		ng/l	500.00		101	90-110			
Vanadium	20400		ng/l	20000		102	90-110			
Zinc	545000		ng/l	500000		109	90-110			
High Cal Check (2312062-HCV1)				Prepared & Analyzed: 12/20/23						
Aluminum	2.91E6		ng/l	3.0000E6		97.2	95-105			
Antimony	39700		ng/l	40000		99.3	95-105			
Arsenic	39700		ng/l	40000		99.3	95-105			
Barium	401000		ng/l	400000		100	95-105			
Beryllium	10200		ng/l	10000		102	95-105			
Cadmium	39300		ng/l	40000		98.3	95-105			
Calcium	4.89E7		ng/l	5.0000E7		97.8	95-105			
Chromium	463000		ng/l	480000		96.5	95-105			
Cobalt	97500		ng/l	100000		97.5	95-105			
Copper	3.85E6		ng/l	4.0000E6		96.2	95-105			
Iron	4.86E6		ng/l	5.0000E6		97.1	95-105			
Lead	396000		ng/l	400000		98.9	95-105			
Magnesium	1.92E6		ng/l	2.0000E6		96.2	95-105			
Manganese	958000		ng/l	1.0000E6		95.8	95-105			
Molybdenum	99300		ng/l	100000		99.3	95-105			
Nickel	233000		ng/l	240000		97.0	95-105			
Phosphorus	384000		ng/l	400000		96.0	95-105			
Potassium	4.88E6		ng/l	5.0000E6		97.6	95-105			
Rubidium	20000		ng/l	20000		100	95-105			
Selenium	40400		ng/l	40000		101	95-105			
Sodium	4.76E6		ng/l	5.0000E6		95.3	95-105			
Strontium	99100		ng/l	100000		99.1	95-105			
Thallium	1000		ng/l	1000.0		100	95-105			
Thorium	1010		ng/l	1000.0		101	95-105			
Uranium	1010		ng/l	1000.0		101	95-105			
Vanadium	39500		ng/l	40000		98.7	95-105			
Zinc	964000		ng/l	1.0000E6		96.4	95-105			
Initial Cal Blank (2312062-ICB1)				Prepared & Analyzed: 12/20/23						

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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 2312062 - B3L1903										
Initial Cal Blank (2312062-ICB1) Continu				Prepared & Analyzed: 12/20/23						
Aluminum	-70.8		ng/l							U
Antimony	0.816		ng/l							
Arsenic	-4.35		ng/l							U
Barium	2.03		ng/l							
Beryllium	0.0294		ng/l							
Cadmium	0.350		ng/l							
Calcium	1620		ng/l							
Chromium	5.43		ng/l							
Cobalt	0.688		ng/l							
Copper	35.5		ng/l							
Iron	-57.2		ng/l							U
Lead	14.0		ng/l							
Magnesium	-9.61		ng/l							U
Manganese	10.9		ng/l							
Molybdenum	13.0		ng/l							
Nickel	-0.0216		ng/l							U
Phosphorus	-16.3		ng/l							U
Potassium	-2040		ng/l							U
Rubidium	-0.0358		ng/l							U
Selenium	-3.80		ng/l							U
Sodium	-487		ng/l							U
Strontium	1.13		ng/l							
Thallium	0.563		ng/l							
Thorium	0.446		ng/l							
Uranium	0.0299		ng/l							
Vanadium	-55.2		ng/l							U
Zinc	-16.2		ng/l							U
Initial Cal Check (2312062-ICV1)				Prepared & Analyzed: 12/20/23						
Aluminum	1.46E6		ng/l	1.5000E6		97.6	90-110			
Antimony	19900		ng/l	20000		99.4	90-110			
Arsenic	20000		ng/l	20000		100	90-110			
Barium	203000		ng/l	200000		102	90-110			
Beryllium	5220		ng/l	5000.0		104	90-110			
Cadmium	20700		ng/l	20000		103	90-110			
Calcium	2.47E7		ng/l	2.5000E7		98.7	90-110			
Chromium	236000		ng/l	240000		98.5	90-110			
Cobalt	49800		ng/l	50000		99.6	90-110			
Copper	2.03E6		ng/l	2.0000E6		101	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 2312062 - B3L1903										
Initial Cal Check (2312062-ICV1) Continu				Prepared & Analyzed: 12/20/23						
Iron	2.50E6		ng/l	2.5000E6		99.9	90-110			
Lead	200000		ng/l	200000		99.8	90-110			
Magnesium	990000		ng/l	1.0000E6		99.0	90-110			
Manganese	494000		ng/l	500000		98.7	90-110			
Molybdenum	50100		ng/l	50000		100	90-110			
Nickel	119000		ng/l	120000		99.3	90-110			
Phosphorus	194000		ng/l	200000		96.8	90-110			
Potassium	2.57E6		ng/l	2.5000E6		103	90-110			
Rubidium	9850		ng/l	10000		98.5	90-110			
Selenium	20800		ng/l	20000		104	90-110			
Sodium	2.49E6		ng/l	2.5000E6		99.4	90-110			
Strontium	50200		ng/l	50000		100	90-110			
Thallium	495		ng/l	500.00		99.0	90-110			
Thorium	491		ng/l	500.00		98.3	90-110			
Uranium	500		ng/l	500.00		100	90-110			
Vanadium	20300		ng/l	20000		101	90-110			
Zinc	527000		ng/l	500000		105	90-110			
Interference Check A (2312062-IFA1)				Prepared & Analyzed: 12/20/23						
Aluminum	1.47E7		ng/l	1.5000E7		97.8	80-120			
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
Calcium	9.27E7		ng/l	1.0040E8		92.3	80-120			
Chromium	0.00		ng/l				80-120			U
Cobalt	0.00		ng/l				80-120			U
Copper	0.00		ng/l				80-120			U
Iron	1.46E7		ng/l	1.5000E7		97.4	80-120			
Lead	0.00		ng/l				80-120			U
Magnesium	1.53E7		ng/l	1.5000E7		102	80-120			
Manganese	0.00		ng/l				80-120			U
Molybdenum	299000		ng/l	300000		99.8	80-120			
Nickel	0.00		ng/l				80-120			U
Phosphorus	1.60E7		ng/l	1.5000E7		106	80-120			
Potassium	1.49E7		ng/l	1.5000E7		99.3	80-120			
Rubidium	0.00		ng/l				80-120			U
Selenium	0.00		ng/l				80-120			U

CERTIFICATE OF ANALYSIS

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

FILE #: 0000.00
REPORTED: 12/21/23 13:36
SUBMITTED: 12/18/23
AQS SITE CODE:
SITE CODE: Maui 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 2312062 - B3L1903										
Interference Check A (2312062-IFA1) Co				Prepared & Analyzed: 12/20/23						
Sodium	1.53E7		ng/l	1.5000E7		102	80-120			
Strontium	0.00		ng/l				80-120			U
Thallium	0.00		ng/l				80-120			U
Thorium	0.00		ng/l				80-120			U
Uranium	0.00		ng/l				80-120			U
Vanadium	0.00		ng/l				80-120			U
Zinc	0.00		ng/l				80-120			U
Interference Check B (2312062-IFB1)				Prepared & Analyzed: 12/20/23						
Aluminum	1.66E7		ng/l	1.6500E7		101	80-120			
Antimony	20000		ng/l	20000		99.9	80-120			
Arsenic	20000		ng/l	20000		100	80-120			
Barium	201000		ng/l	200000		100	80-120			
Beryllium	4780		ng/l	5000.0		95.7	80-120			
Cadmium	19300		ng/l	20000		96.3	80-120			
Calcium	1.17E8		ng/l	1.2540E8		93.1	80-120			
Chromium	229000		ng/l	240000		95.6	80-120			
Cobalt	49300		ng/l	50000		98.6	80-120			
Copper	1.88E6		ng/l	2.0000E6		94.1	80-120			
Iron	1.73E7		ng/l	1.7500E7		98.8	80-120			
Lead	203000		ng/l	200000		102	80-120			
Magnesium	1.67E7		ng/l	1.6000E7		104	80-120			
Manganese	516000		ng/l	500000		103	80-120			
Molybdenum	337000		ng/l	350000		96.2	80-120			
Nickel	116000		ng/l	120000		96.3	80-120			
Phosphorus	1.65E7		ng/l	1.5200E7		108	80-120			
Potassium	1.77E7		ng/l	1.7500E7		101	80-120			
Rubidium	10100		ng/l	10000		101	80-120			
Selenium	19200		ng/l	20000		95.8	80-120			
Sodium	1.88E7		ng/l	1.7500E7		108	80-120			
Strontium	49600		ng/l	50000		99.3	80-120			
Thallium	519		ng/l	500.00		104	80-120			
Thorium	539		ng/l	500.00		108	80-120			
Uranium	543		ng/l	500.00		109	80-120			
Vanadium	19100		ng/l	20000		95.3	80-120			
Zinc	484000		ng/l	500000		96.7	80-120			
Batch B3L1903 - ICP-MS Extraction										
Blank (B3L1903-BLK1)				Prepared & Analyzed: 12/19/23						
Aluminum	ND	32.1	ng/m³ Air							U

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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B3L1903 - ICP-MS Extraction										
Blank (B3L1903-BLK1) Continued				Prepared & Analyzed: 12/19/23						
Antimony	ND	0.0441	ng/m³ Air							SL, U
Arsenic	ND	0.00955	ng/m³ Air							U
Barium	ND	0.948	ng/m³ Air							U
Beryllium	ND	0.00332	ng/m³ Air							U
Cadmium	ND	0.109	ng/m³ Air							U
Calcium	ND	292	ng/m³ Air							QB-01, U
Chromium	ND	2.03	ng/m³ Air							U
Cobalt	ND	0.0156	ng/m³ Air							QB-01, U
Copper	ND	3.00	ng/m³ Air							U
Iron	ND	24.2	ng/m³ Air							U
Lead	ND	0.276	ng/m³ Air							U
Magnesium	ND	96.4	ng/m³ Air							U
Manganese	ND	1.19	ng/m³ Air							U
Molybdenum	ND	0.213	ng/m³ Air							QB-01, U
Nickel	ND	0.801	ng/m³ Air							U
Phosphorus	ND	1250	ng/m³ Air							GC-BS, LJ, QX U
Potassium	ND	38.0	ng/m³ Air							U
Rubidium	ND	0.0183	ng/m³ Air							U
Selenium	ND	0.0110	ng/m³ Air							LJ, QX, U
Sodium	ND	2000	ng/m³ Air							GC-BS, U
Strontium	ND	0.652	ng/m³ Air							QB-01, U
Thallium	ND	5.03E-4	ng/m³ Air							U
Thorium	ND	0.00300	ng/m³ Air							U
Uranium	ND	0.0170	ng/m³ Air							U
Vanadium	ND	0.0492	ng/m³ Air							U
Zinc	ND	97.7	ng/m³ Air							U
LCS (B3L1903-BS1)				Prepared & Analyzed: 12/19/23						
Aluminum	95.4	32.1	ng/m³ Air	82.975		115	80-120			
Antimony	0.473	0.0441	ng/m³ Air	1.3829		34.2	80-120			SL
Arsenic	2.67	0.00955	ng/m³ Air	2.7658		96.7	80-120			
Barium	27.5	0.948	ng/m³ Air	27.658		99.6	80-120			
Beryllium	1.38	0.00332	ng/m³ Air	1.3829		99.7	80-120			
Cadmium	1.37	0.109	ng/m³ Air	1.3829		99.1	80-120			
Calcium	669	292	ng/m³ Air	69.146		968	80-120			QB-01
Chromium	15.9	2.03	ng/m³ Air	13.829		115	80-120			
Cobalt	1.37	0.0156	ng/m³ Air	1.3829		99.1	80-120			QB-01
Copper	31.3	3.00	ng/m³ Air	27.658		113	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 B3L1903 - ICP-MS Extraction										
LCS (B3L1903-BS1) Continued				Prepared & Analyzed: 12/19/23						
Iron	41.7	24.2	ng/m³ Air	27.658		151	80-120			
Lead	13.4	0.276	ng/m³ Air	13.829		97.1	80-120			
Magnesium	ND	96.4	ng/m³ Air	27.658			80-120			U
Manganese	8.90	1.19	ng/m³ Air	8.2975		107	80-120			
Molybdenum	1.62	0.213	ng/m³ Air	1.3829		117	80-120			QB-01
Nickel	3.17	0.801	ng/m³ Air	2.7658		115	80-120			
Phosphorus	ND	1250	ng/m³ Air	13.829			80-120			GC-BS, LJ, QX U
Potassium	71.1	38.0	ng/m³ Air	55.317		129	80-120			
Rubidium	1.30	0.0183	ng/m³ Air	1.3829		94.3	80-120			
Selenium	2.68	0.0110	ng/m³ Air	2.7658		97.1	80-120			LJ, QX
Sodium	ND	2000	ng/m³ Air	55.317			80-120			GC-BS, U
Strontium	2.24	0.652	ng/m³ Air	1.3829		162	80-120			QB-01
Thallium	0.132	5.03E-4	ng/m³ Air	0.13829		95.1	80-120			
Thorium	0.129	0.00300	ng/m³ Air	0.13829		93.3	80-120			
Uranium	0.129	0.0170	ng/m³ Air	0.13829		93.2	80-120			
Vanadium	2.72	0.0492	ng/m³ Air	2.7658		98.2	80-120			
Zinc	137	97.7	ng/m³ Air	82.975		166	80-120			
Duplicate (B3L1903-DUP1)		**Source: 3121831-06**		Prepared & Analyzed: 12/19/23						
Aluminum	722	25.2	ng/m³ Air		768			6.18	10	E
Antimony	0.0543	0.0347	ng/m³ Air		0.0597			9.36	10	SL
Arsenic	0.320	0.00751	ng/m³ Air		0.326			1.64	10	
Barium	6.86	0.746	ng/m³ Air		7.09			3.24	10	
Beryllium	0.0242	0.00261	ng/m³ Air		0.0257			5.66	10	
Cadmium	ND	0.0857	ng/m³ Air		0.191				10	U
Calcium	631	230	ng/m³ Air		652			3.19	10	QB-01
Chromium	2.00	1.60	ng/m³ Air		2.08			3.83	10	
Cobalt	0.340	0.0123	ng/m³ Air		0.361			6.04	10	QB-01
Copper	15.3	2.36	ng/m³ Air		16.1			5.16	10	
Iron	723	19.0	ng/m³ Air		777			7.17	10	
Lead	0.422	0.217	ng/m³ Air		0.423			0.289	10	
Magnesium	238	75.8	ng/m³ Air		242			1.99	10	
Manganese	18.7	0.936	ng/m³ Air		19.6			4.66	10	
Molybdenum	0.968	0.168	ng/m³ Air		0.987			1.94	10	QB-01
Nickel	0.989	0.630	ng/m³ Air		0.887			10.9	10	
Phosphorus	ND	983	ng/m³ Air		ND				10	GC-BS, LJ, QX U
Potassium	123	29.9	ng/m³ Air		119			3.32	10	
Rubidium	0.208	0.0144	ng/m³ Air		0.222			6.28	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 B3L1903 - ICP-MS Extraction										
Duplicate (B3L1903-DUP1) Continued			**Source: 3121831-06**		Prepared & Analyzed: 12/19/23					
Selenium	0.191	0.00865	ng/m³ Air		0.197			2.87	10	LJ, QX
Sodium	1750	1570	ng/m³ Air		1750			0.361	10	E, GC-BS
Strontium	4.70	0.513	ng/m³ Air		4.93			4.71	10	QB-01
Thallium	0.00130	3.96E-4	ng/m³ Air		0.00139			7.18	10	
Thorium	0.0185	0.00236	ng/m³ Air		0.0213			14.0	10	
Uranium	0.0157	0.0134	ng/m³ Air		0.0168			7.12	10	
Vanadium	2.30	0.0387	ng/m³ Air		2.42			5.06	10	
Zinc	ND	76.8	ng/m³ Air		ND				10	U
Duplicate (B3L1903-DUP2)			**Source: 3121831-09**		Prepared: 12/19/23 Analyzed: 12/20/23					
Aluminum	1380	25.3	ng/m³ Air		1390			0.487	10	E
Antimony	0.0680	0.0347	ng/m³ Air		0.0688			1.16	10	SL
Arsenic	0.321	0.00752	ng/m³ Air		0.318			0.671	10	
Barium	10.2	0.747	ng/m³ Air		10.3			0.737	10	
Beryllium	0.0379	0.00262	ng/m³ Air		0.0448			16.7	10	R-F
Cadmium	ND	0.0859	ng/m³ Air		ND				10	U
Calcium	809	230	ng/m³ Air		808			0.0881	10	QB-01
Chromium	2.59	1.60	ng/m³ Air		2.60			0.253	10	
Cobalt	0.634	0.0123	ng/m³ Air		0.636			0.235	10	QB-01
Copper	18.1	2.36	ng/m³ Air		18.1			0.168	10	
Iron	1390	19.1	ng/m³ Air		1400			0.897	10	
Lead	0.623	0.217	ng/m³ Air		0.625			0.308	10	
Magnesium	293	75.9	ng/m³ Air		293			0.121	10	
Manganese	38.3	0.937	ng/m³ Air		38.8			1.33	10	
Molybdenum	0.985	0.168	ng/m³ Air		0.994			0.852	10	QB-01
Nickel	1.21	0.631	ng/m³ Air		1.22			0.988	10	
Phosphorus	ND	985	ng/m³ Air		ND				10	GC-BS, LJ, QX U
Potassium	142	29.9	ng/m³ Air		142			0.139	10	
Rubidium	0.317	0.0144	ng/m³ Air		0.315			0.539	10	
Selenium	0.253	0.00866	ng/m³ Air		0.253			0.0290	10	LJ, QX
Sodium	1920	1580	ng/m³ Air		1910			0.573	10	E, GC-BS
Strontium	7.45	0.514	ng/m³ Air		7.35			1.26	10	QB-01
Thallium	0.00209	3.96E-4	ng/m³ Air		0.00218			4.42	10	
Thorium	0.0368	0.00236	ng/m³ Air		0.0369			0.0698	10	
Uranium	0.0272	0.0134	ng/m³ Air		0.0273			0.118	10	
Vanadium	3.55	0.0388	ng/m³ Air		3.57			0.592	10	
Zinc	ND	77.0	ng/m³ Air		ND				10	U
Matrix Spike (B3L1903-MS1)			**Source: 3121831-06**		Prepared & Analyzed: 12/19/23					

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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 B3L1903 - ICP-MS Extraction										
Matrix Spike (B3L1903-MS1) Continued Source: 3121831-06 Prepared & Analyzed: 12/19/23										
Aluminum	819	25.2	ng/m³ Air	65.255	768	78.7	80-120			QM-4X
Antimony	0.541	0.0347	ng/m³ Air	1.0876	0.0597	44.2	80-120			SL
Arsenic	2.35	0.00751	ng/m³ Air	2.1752	0.326	92.9	80-120			
Barium	28.0	0.746	ng/m³ Air	21.752	7.09	96.0	80-120			
Beryllium	1.18	0.00261	ng/m³ Air	1.0876	0.0257	107	80-120			
Cadmium	2.05	0.0857	ng/m³ Air	1.0876	0.191	171	80-120			QM-07
Calcium	689	230	ng/m³ Air	54.379	652	69.0	80-120			QB-01, QM-4X
Chromium	12.9	1.60	ng/m³ Air	10.876	2.08	99.8	80-120			
Cobalt	1.41	0.0123	ng/m³ Air	1.0876	0.361	96.5	80-120			QB-01
Copper	42.5	2.36	ng/m³ Air	21.752	16.1	121	80-120			QM-07
Iron	776	19.0	ng/m³ Air	21.752	777	NR	80-120			QM-4X
Lead	10.9	0.217	ng/m³ Air	10.876	0.423	96.4	80-120			
Magnesium	267	75.8	ng/m³ Air	21.752	242	113	80-120			
Manganese	26.3	0.936	ng/m³ Air	6.5255	19.6	101	80-120			
Molybdenum	1.98	0.168	ng/m³ Air	1.0876	0.987	91.1	80-120			QB-01
Nickel	3.24	0.630	ng/m³ Air	2.1752	0.887	108	80-120			
Phosphorus	ND	983	ng/m³ Air	10.876	ND		80-120			GC-BS, LJ, QX, U
Potassium	163	29.9	ng/m³ Air	43.503	119	99.8	80-120			
Rubidium	1.18	0.0144	ng/m³ Air	1.0876	0.222	88.4	80-120			
Selenium	2.24	0.00865	ng/m³ Air	2.1752	0.197	93.8	80-120			QX, LJ
Sodium	1850	1570	ng/m³ Air	43.503	1750	218	80-120			GC-BS, QM-4X
Strontium	5.85	0.513	ng/m³ Air	1.0876	4.93	84.6	80-120			QB-01
Thallium	0.104	3.96E-4	ng/m³ Air	0.10876	0.00139	94.5	80-120			
Thorium	0.0607	0.00236	ng/m³ Air	0.10876	0.0213	36.2	80-120			QM-07
Uranium	0.117	0.0134	ng/m³ Air	0.10876	0.0168	91.8	80-120			
Vanadium	4.47	0.0387	ng/m³ Air	2.1752	2.42	93.9	80-120			
Zinc	96.9	76.8	ng/m³ Air	65.255	ND	149	80-120			
Matrix Spike Dup (B3L1903-MSD1) Source: 3121831-06 Prepared & Analyzed: 12/19/23										
Aluminum	887	25.2	ng/m³ Air	65.255	768	182	80-120	7.90	20	QM-4X
Antimony	0.542	0.0347	ng/m³ Air	1.0876	0.0597	44.4	80-120	0.315	20	SL
Arsenic	2.41	0.00751	ng/m³ Air	2.1752	0.326	95.7	80-120	2.49	20	
Barium	28.5	0.746	ng/m³ Air	21.752	7.09	98.7	80-120	2.02	20	
Beryllium	1.07	0.00261	ng/m³ Air	1.0876	0.0257	96.4	80-120	9.79	20	
Cadmium	1.12	0.0857	ng/m³ Air	1.0876	0.191	85.6	80-120	58.5	20	LJ, QX
Calcium	719	230	ng/m³ Air	54.379	652	123	80-120	4.17	20	QB-01, QM-4X
Chromium	13.2	1.60	ng/m³ Air	10.876	2.08	102	80-120	1.83	20	
Cobalt	1.42	0.0123	ng/m³ Air	1.0876	0.361	97.5	80-120	0.799	20	QB-01

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B3L1903 - ICP-MS Extraction										
Matrix Spike Dup (B3L1903-MSD1) Contir			**Source: 3121831-06**		Prepared & Analyzed: 12/19/23					
Copper	44.9	2.36	ng/m³ Air	21.752	16.1	132	80-120	5.50	20	QM-07
Iron	835	19.0	ng/m³ Air	21.752	777	268	80-120	7.35	20	QM-4X
Lead	11.2	0.217	ng/m³ Air	10.876	0.423	98.9	80-120	2.40	20	
Magnesium	273	75.8	ng/m³ Air	21.752	242	142	80-120	2.34	20	QM-4X
Manganese	27.2	0.936	ng/m³ Air	6.5255	19.6	116	80-120	3.55	20	
Molybdenum	2.04	0.168	ng/m³ Air	1.0876	0.987	96.5	80-120	2.93	20	QB-01
Nickel	3.11	0.630	ng/m³ Air	2.1752	0.887	102	80-120	3.85	20	
Phosphorus	ND	983	ng/m³ Air	10.876	ND		80-120		20	QM-4X, QX, GC-BS, LJ, U
Potassium	168	29.9	ng/m³ Air	43.503	119	112	80-120	3.31	20	
Rubidium	1.19	0.0144	ng/m³ Air	1.0876	0.222	89.0	80-120	0.503	20	
Selenium	2.26	0.00865	ng/m³ Air	2.1752	0.197	94.9	80-120	1.07	20	LJ, QX
Sodium	1870	1570	ng/m³ Air	43.503	1750	268	80-120	1.18	20	GC-BS, QM-4)
Strontium	5.94	0.513	ng/m³ Air	1.0876	4.93	93.0	80-120	1.56	20	QB-01
Thallium	0.105	3.96E-4	ng/m³ Air	0.10876	0.00139	95.3	80-120	0.868	20	
Thorium	0.0687	0.00236	ng/m³ Air	0.10876	0.0213	43.6	80-120	12.3	20	QM-07
Uranium	0.118	0.0134	ng/m³ Air	0.10876	0.0168	93.1	80-120	1.20	20	
Vanadium	4.62	0.0387	ng/m³ Air	2.1752	2.42	101	80-120	3.28	20	
Zinc	99.4	76.8	ng/m³ Air	65.255	ND	152	80-120	2.49	20	
Post Spike (B3L1903-PS1)			**Source: 3121831-06**		Prepared & Analyzed: 12/19/23					
Aluminum	812	25.2	ng/m³ Air	21.752	768	204	75-125			A-01
Antimony	0.265	0.0347	ng/m³ Air	0.21752	0.0597	94.4	75-125			SL
Arsenic	1.33	0.00751	ng/m³ Air	1.0876	0.326	92.3	75-125			
Barium	9.10	0.746	ng/m³ Air	2.1752	7.09	92.5	75-125			
Beryllium	0.244	0.00261	ng/m³ Air	0.21752	0.0257	100	75-125			
Cadmium	0.298	0.0857	ng/m³ Air	0.10876	0.191	98.0	75-125			
Calcium	685	230	ng/m³ Air	21.752	652	154	75-125			A-01, QB-01
Chromium	3.16	1.60	ng/m³ Air	1.0876	2.08	99.2	75-125			
Cobalt	0.578	0.0123	ng/m³ Air	0.21752	0.361	99.8	75-125			QB-01
Copper	27.5	2.36	ng/m³ Air	10.876	16.1	105	75-125			
Iron	812	19.0	ng/m³ Air	21.752	777	160	75-125			A-01
Lead	21.2	0.217	ng/m³ Air	21.752	0.423	95.5	75-125			
Magnesium	273	75.8	ng/m³ Air	21.752	242	140	75-125			A-01
Manganese	22.4	0.936	ng/m³ Air	2.1752	19.6	126	75-125			A-01
Molybdenum	1.96	0.168	ng/m³ Air	1.0876	0.987	89.1	75-125			QB-01
Nickel	2.99	0.630	ng/m³ Air	2.1752	0.887	96.6	75-125			
Phosphorus	ND	983	ng/m³ Air	4.3503	ND		75-125			A-01, GC-BS, LJ, QX, U
Potassium	141	29.9	ng/m³ Air	21.752	119	102	75-125			

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 #: 0000.00
REPORTED: 12/21/23 13:36
SUBMITTED: 12/18/23
AQS SITE CODE:
SITE CODE: Maui 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 B3L1903 - ICP-MS Extraction										
Post Spike (B3L1903-PS1) Continued			**Source: 3121831-06**			Prepared & Analyzed: 12/19/23				
Rubidium	0.315	0.0144	ng/m³ Air	0.10876	0.222	85.5	75-125			
Selenium	1.20	0.00865	ng/m³ Air	1.0876	0.197	91.9	75-125			LJ, QX
Sodium	1860	1570	ng/m³ Air	21.752	1750	480	75-125			A-01, GC-BS
Strontium	5.93	0.513	ng/m³ Air	1.0876	4.93	91.9	75-125			QB-01
Thallium	0.0514	3.96E-4	ng/m³ Air	5.4379E-2	0.00139	91.9	75-125			
Thorium	0.0703	0.00236	ng/m³ Air	5.4379E-2	0.0213	90.1	75-125			
Uranium	0.0663	0.0134	ng/m³ Air	5.4379E-2	0.0168	90.9	75-125			
Vanadium	3.47	0.0387	ng/m³ Air	1.0876	2.42	96.5	75-125			
Zinc	ND	76.8	ng/m³ Air	21.752	ND		75-125			U

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REPORTED: 12/21/23 13:36
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AQS SITE CODE:
SITE CODE: Maui fires

Notes and Definitions

U	Under Detection Limit
SL	The spike recovery was outside acceptance limits. Reported value may be biased low.
R-F	Replicate exceeds DQO criteria.
QX	Compound does not meet QC criteria. Results should be considered an estimate.
QM-4X	The MS/MSD recovery exceeds criteria because the parent sample concentration is greater than 4x the spike concentration. Sample results for the QC batch were accepted based on acceptable BS/BSD recoveries.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
QB-01	Analyte exceeds method blank criteria
LJ	Identification of analyte is acceptable; reported value is an estimate.
GC-BS	Compound exceeds Blank Spike Criteria
FB-01	Analyte exceeds Field Blank criteria.
E	The concentration indicated for this analyte is an estimated value above the calibration range of the instrument. This value is considered an estimate (CLP E-flag).
D	This result obtained by dilution.
A-01	Parent sample >4x spike amount
ND	Analyte NOT DETECTED
NR	Not Reported
MDL	Method Detection Limit
RPD	Relative Percent Difference

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

Stage 1 Data Verification Checklist – Metals

HDOH CAB – Ambient Community Air Sampling – Kula

Task Order No. 23141

Reviewed by:
Talaidh Isaacs 12/22/2023 & Shanna Vasser 12/22/2023
Laboratory: Eastern Research Group – Morrisville, NC
Analysis date: 12/19/2023, 12/20/2023, and 12/21/2023
Report No: 3121831

√	1.	Chain of custody (CoC) documentation is present.
X	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.

Discrepancies: None

Notes:

2. No sample receipt information was presented by the laboratory.

10. No reporting limits were included in this data package.