ICP-MS Interlaboratory Study – Laboratory-reported results

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Target metals levels

Values shown are μg/filter
[Blanks consisted of MCE filters spiked with reagent]

Element	Media spikes
Aluminum	5.0
Antimony	0.5
Arsenic	5.0
Barium	5.0
Beryllium	0.5
Cadmium	0.5
Chromium	5.0
Cobalt	0.5
Copper	5.0
Iron	5.0
Lead	0.5
Magnesium	5.0
Manganese	0.5
Molybdenum	0.5
Nickel	0.5
Selenium	0.5
Silver	0.5
Tin	0.5
Uranium	0.5
Vanadium	0.5
Zinc	5.0

Notes on table entries:

Blank filters consist of sampling media (mixed cellulose ester filters) + reagent spikes.

Results are flagged only if obviously >> factor of two or more off.

Informational values are those that are so denoted by the reporting laboratory.

Laboratory names are coded to ensure confidentiality.

ICP-MS elemental results are reported in μg/sample.

Aluminum (Al)

Laboratory	Media blanks*	Spiked filters
1	<0.788 (×4)	4.80, 4.60, 4.83
2	7.72, 7.30, 7.37	12.0, 12.5, 12.3
3	(no results)	(no results)
4	61, 32, 32.5	32.0, 47.0, 18.5
5	0.26, 0.20, 0.14	4.25, 4.99, 5.01
6	2.20, 1.00, 0.51	5.50, 4.85, 7.47
7	-0.189, -0.244, 0.091	5.37, 5.35, 5.38
8	0.264, 0.060, 0.041	6.70, 5.17, 5.03
9	0.129, 0.101, 0.124	5.30, 5.41, 5.35
10	0.151, 0.150, 0.135	5.20, 5.04, 5.03
11	1.9, 1.3, 1.4	6.3, 8.8, 5.9
12	<1.85 (×3)	5.1, 6.0, 4.7
13	0 (×3)	4.78, 4.81, 4.46
14	0.300, 0.203, 0.068	4.68, 4.97, 4.78
15	(no results)	(no results)
16	<2.5 (×3)	4.0, 3.9, 3.8
17	2.24, 1.60, 1.70	6.80, 18.1, 8.73
18	[0.306, 0.843, 0.129]†	5.58, 5.44, 4.91
19	0 (×3)	6.70, 6.30, 6.81
20	0.99, 0.31, 0.60	7.21, 7.10, 5.89

*Significant blank levels. †Informational values. Flagged results.

Antimony (Sb)

Laboratory	Media blanks	Spiked filters
1	<0.003 (×3)	0.418, 0.395, 0.413
2	(0)	0.468, 0.480, 0.487
3	<0.25 (×3)	0.482, 0.488, 0.489
4	<0.25 (×3)	0.5 (×3)
5	0.00, 0.00, 0.01	0.45, 0.48, 0.48
6	0.00 (×3)	0.46, 0.46, 0.47
7	0.054, 0.027, 0.015	0.51 (×3)
8	0.037, 0.030, 0.014	0.39, 0.43, 0.52
9	0.001, 0.002, 0.001	0.50, 0.51, 0.50
10	0.0061, 0.0059, 0.0010	0.485, 0.485, 0.497
11	0.15, 0.13, 0.13	0.73, 0.84, 0.77
12	–* (×3)	0.41, 0.41, 0.38
13	0.43, 0.42, 0.42	0.79, 0.80, 0.79
14	(no results)	(no results)
15	<0.50 (×3)	<0.50 (×3)
16	<0.05 (×3)	0.48, 0.51, 0.48
17	0 (×3)	0.213, 0.340, 0.033
18	-0.001, 0.007, 0.003	0.494, 0.496, 0.499
19	– (×3)	0.47, 0.54, 0.50
20	– (×3)	0.72, 0.65, 0.64

*Results below detection limit

Arsenic (As)

Laboratory	Media blanks	Spiked filters
1	<0.006 (×4)	4.23, 4.25, 3.98
2	0.114, 0.104, 0.099	4.80, 4.87, 4.95
3	<0.25 (×3)	4.98, 4.86, 5.04
4	<0.25,<0.25, 0.30	5.4, 5.3, 6.2
5	0.04, 0.03, 0.02	4.80, 4.46, 4.85
6	(0) (×3)	4.73, 4.93, 4.85
7	-0.20, -0.22, -0.20	4.74, 4.73, 4.70
8	<0.2 (×3)	4.48, 4.58, 4.61
9	0.012, 0.000, 0.001	5.28, 5.64, 5.45
10	–* (×3)	5.41, 4.43, 5.42
11	(0) (×3)	5.4, 5.9, 5.3
12	– (×3)	1.7, 1.7, 1.6
13	0.52, 0.58, 0.58	5.07, 5.02, 5.02
14	<0.029 (×3)	4.86, 4.97, 5.07
15	<0.50 (×3)	4.80, 4.78, 4.85
16	<0.25 (×3)	4.8, 4.8, 4.7
17	0.382, 0.055, 0.069	4.81, 5.29, 4.83
18	0.021, 0.011, 0.007	5.58, 5.30, 5.26
19	– (×3)	4.13, 4.06, 4.56
20	– (×3)	5.73, 5.64, 5.20

*Results below detection limit. Flagged results.

Barium (Ba)

Laboratory	Media blanks	Spiked filters
1	<0.004 (×4)	4.43, 4.20, 4.43
2	(0) (×3)	4.89, 5.13, 5.04
3	<0.25 (×3)	5.22, 5.22, 5.05
4	<1 (×3)	4.8, 4.9, 4.8
5	0.01 (×3)	4.73, 4.89, 4.91
6	0.01 (×3)	4.76, 4.85, 4.86
7	0.0047, 0.0074, 0.0129	4.68, 4.64, 4.67
8	<0.03 (×3)	4.55, 4.52, 4.63
9	0.016, 0.009, 0.011	4.88, 5.03, 4.99
10	0.0234, 0.0581, 0.0634	4.92, 4.89, 4.86
11	0.029, 0.033, 0.029	5.4, 5.8, 5.5
12	–* (×3)	4.2, 4.2, 3.9
13	0.58, 0.58, 0.57	4.89, 4.90, 4.93
14	<0.034 (×3)	4.77, 4.95, 5.06
15	(no results)	(no results)
16	<0.25 (×3)	4.8 (×3)
17	0.089, 0.062, 0.048	5.19, 5.21, 5.19
18	0.056, 0.055, 0.063	5.18, 5.03, 5.15
19	0.04, 0.07, 0.08	3.85, 4.46, 4.44
20	– (×3)	5.61, 5.41, 5.18

*Results below detection limit. Flagged results.

Beryllium (Be)

Laboratory	Media blanks	Spiked filters
1	<0.008 (×4)	0.440, 0.415, 0.495
2	(0) (×3)	0.494, 0.496, 0.516
3	<0.05 (×3)	0.481, 0.481, 0.470
4	<1 (×3)	<1 (×3)
5	(0) (×3)	0.44, 0.46, 0.46
6	(0) (×3)	0.43, 0.45, 0.44
7	0.0156, 0.0243, 0.0214	0.536, 0.535, 0.544
8	<0.04 (×3)	0.464, 0.473, 0.450
9	(0) (×3)	0.480, 0.496, 0.484
10	0.00036, 0.00032, 0.00016	0.496, 0.501, 0.503
11	0.027, 0.028, 0.031	0.60, 0.65, 0.59
12	<0.006 (×3)	0.47, 0.48, 0.48
13	0.074, 0.070, 0.071	0.558, 0.538, 0.563
14	<0.010 (×3)	0.476, 0.483, 0.490
15	<0.50 (×3)	0.57, 0.58, 0.56
16	<0.25 (×3)	0.46, 0.44, 0.46
17	(0) (×3)	0.478, 0.494, 0.493
18	0.000, -0.001, 0.002	0.544, 0.502, 0.505
19	(0) (×3)	0.61, 0.57, 0.59
20	0.48, 0.05, 0.04	0.62, 0.62, 0.59

Flagged results.

Cadmium (Cd)

Laboratory	Media blanks	Spiked filters
1	<0.002 (×4)	0.433, 0.413, 0.433
2	(0) (×3)	0.485, 0.494, 0.501
3	<0.13 (×3)	0.538, 0.533, 0.526
4	<0.1 (×3)	0.5 (×3)
5	0.001 (×3)	0.46, 0.49, 0.49
6	(0) (×3)	0.49, 0.50, 0.49
7	0.0059, 0.0061, 0.0015	0.497, 0.517, 0.519
8	<0.01 (×3)	0.500, 0.501, 0.503
9	(0) (×3)	0.487, 0.503, 0.497
10	(no result)	0.500, 0.501, 0.503
11	(0) (×3)	0.54, 0.61, 0.54
12	<0.0035 (×3)	0.49, 0.45, 0.49
13	0.786, 0.782, 0.781	1.24, 1.26, 1.26
14	<0.019 (×3)	0.505, 0.482, 0.502
15	<0.50 (×3)	<0.50 (×3)
16	<0.05 (×3)	0.51, 0.52, 0.51
17	(0) (×3)	0.460, 0.472, 0.447
18	0.010, 0,001, 0.001	0.517, 0.514, 0.520
19	–* (×3)	0.50, 0.53, 0.54
20	0.05 (×3)	0.62, 0.58, 0.60

*Results below detection limit. Flagged results.

Chromium (Cr)

Laboratory	Media blanks*	Spiked filters
1	0.285, 0.205, 0.198, 0.197	4.90, 4.65, 4.93
2	0.191, 0.188, 0.153	4.83, 5.00, 5.08
3	<0.5 (×3)	4.87, 4.93, 4.76
4	0.1, 0.2, 0.2	5.1, 5.3, 5.1
5	0.17, 0.17, 0.16	4.77, 4.95, 4.97
6	0.16, 0.16, 0.19	4.94, 4.93, 4.97
7	0.230, 0.241, 0.233	5.41, 5.39, 5.34
8	<0.06 (×3)	4.28, 4.54, 4.54
9	0.180, 0.223, 0.194	4.79, 4.83, 4.77
10	0.140, 0.142, 0.137	5.03, 5.00, 5.05
11	1.1, 1.4, 1.2	6.7, 7.7, 6.7
12	0.19, 0.21, 0.19	4.6, 4.9, 5.0
13	(0) (×3)	4.35, 4.43, 4.39
14	0.169, 0.163, 0.153	5.21, 5.17, 5.00
15	<0.5 (×3)	5.01, 5.04, 5.03
16	<0.5 (×3)	5.1, 4.9, 5.1
17	0.078, 0.086, 0.493	5.38, 5.44, 5.55
18	[0.461, 0.191, 1.60]†	5.18, 5.50, 5.28
19	0.12, 0.04, 0.03	3.70, 3.36, 4.30
20	<0.1 (×2), 0.20	6.38, 6.07, 5.62

*Apparent significant blank levels. Flagged results. †Informational values.

Cobalt (Co)

Laboratory	Media blanks	Spiked filters
1	<0.001 (×4)	0.478, 0.450, 0.480
2	(0) (×3)	0.520, 0.516, 0.515
3	<0.025 (×3)	0.493, 0.498, 0.486
4	<0.05 (×3)	0.5 (×3)
5	(0) (×3)	0.50, 0.48, 0.49
6	(0) (×3)	0.48, 0.48, 0.47
7	0.0158, 0.0123, 0.0089	0.517, 0.524, 0.509
8	<0.008 (×3)	0.462, 0.457, 0.464
9	(0) (×3)	0.496, 0.503, 0.510
10	0.00045, 0.00049, 0.00049	0.492, 0.490, 0.500
11	(0) (×3)	0.60, 0.67, 0.59
12	<0.0022 (×3)	0.46, 0.47, 0.44
13	0.008, 0.003, 0.002	0.493, 0.493, 0.565
14	<0.005 (×3)	0.524, 0.509, 0.527
15	<0.50 (×3)	<0.50 (×3)
16	<0.05 (×3)	0.47, 0.47, 0.45
17	(0) (×3)	0.441, 0.458, 0.447
18	0.001, 0.000, 0.003	0.504, 0.509, 0.521
19	–* (×3)	0.40, 0.41, 0.44
20	–, 0.17, 0.51	0.66, 0.62, 0.59

*Results below detection limit. Flagged results

Copper (Cu)

Laboratory	Media blanks	Spiked filters
1	<0.028 (×3)	4.80, 4.53, 4.85
2	(0) (×3)	5.20, 5.42, 5.36
3	<0.025 (×3)	4.92, 5.01, 5.02
4	<0.1 (×3)	5.0, 5.0, 4.9
5	0.05, 0.04, 0.01	4.77, 5.04, 5.03
6	0.04, 0.04, 0.05	4.90, 4.92, 5.07
7	0.039, 0.054, 0.020	5.39, 5.34, 5.34
8	<0.004 (×3)	4.68 (×3)
9	0.035, 0.033, 0.045	4.91, 4.99, 5.06
10	0.061, 0.082, 0.096	5.06, 5.05, 5.05
11	0.29, 0.31, 0.42	6.1, 6.6, 5.9
12	<0.050 (×3)	4.2, 4.5, 4.6
13	0 (×3)	4.76, 4.72, 4.72
14	0.046, 0.130, 0.028	4.93, 5.09, 5.10
15	<0.50 (×3)	4.77, 4.78, 4.74
16	<0.05 (×3)	4.9, 4.8, 4.9
17	0, 0.055, 0.022	5.36, 5.20, 5.26
18	0.019, 0.009, 0.009	5.03, 5.01, 5.10
19	–* (×3)	7.32, 6.76, 3.44
20	1.69, 0.14, 0.71	7.64, 6.91, 6.97

*Results below detection limit. Flagged results

Iron (Fe)

Laboratory	Media blanks*	Spiked filters
1	<0.468 (×4)	6.70, 6.23, 6.65
2	0.637, 1.66, 0.807	5.41, 5.74, 5.66
3	(no results)	(no results)
4	<25 (×3)	<25 (×3)
5	0.40, 0.46, 0.51	5.14, 5.45, 5.34
6	0.41, 0.47, 0.39	5.11, 4.98, 5.07
7	2.49, 2.29, 2.73	8.34, 8.55, 8.60
8	<0.6 (×3)	5.45, 4.40, 4.32
9	0.453, 0.268, 0.272	5.82, 6.05, 5.85
10	0.255, 0.280, 0.342	5.15, 5,20, 5.32
11	1.1, 0.79, 0.63	5.9, 5.8, 11
12	<0.825 (×3)	4.1, 5.1, 3.9
13	0.65, 0.45, 0.40	6.15, 5.60, 5.20
14	<2.76 (×3)	4.75, 5.08, 5.56
15	(no results)	(no results)
16	(no results)	(no results)
17	0, 1.87, 0.159	5.27, 5.75, 6.26
18	[3.71, 3.43, 2.12]†	8.63, 8.92, 6.76
19	–# (×3)	5.4, 4.2, 5.1
20	1.98, 1.84, 3.09	7.92, 7.93, 7.43

*Significant blanks. #Results below detection limit. Flagged results. †Informational values

Lead (Pb)

Laboratory	Media blanks	Spiked filters
1	<0.004 (×4)	0.455, 0.433, 0.460
2	(0) (×3)	0.501, 0.516, 0.513
3	<0.13 (×3)	0.485, 0.487, 0.480
4	<0.25 (×3)	0.5 (×3)
5	0.00, 0.01, 0.01	0.48, 0.49, 0.49
6	0.013, 0.011, 0.007	0.52, 0.51, 0.51
7	0.0081, 0.0062, 0.0042	0.525, 0.508, 0.512
8	<0.02 (×3)	0.546, 0.537, 0.524
9	0.006, 0.006, 0.005	0.526, 0.539, 0.531
10	0.0023, 0.0023, 0.0022	0.501, 0.499, 0.496
11	(0) (×3)	0.56, 0.67, 0.58
12	<0.075 (×3)	0.77, 0.70, 0.63
13	0.058, 0.052 (×2)	0.510, 0.504, 0.512
14	<0.010 (×3)	0.502, 0.520, 0.521
15	<0.50 (×3)	<0.50 (×3)
16	<0.25 (×3)	0.49 (×3)
17	(0) (×3)	0.500, 0.512, 0.513
18	(no results)	(no results)
19	(0) (×3)	0.45, 0.43, 0.59
20	–[#] (×2), 0.27	0.48, 0.49, 0.43

Flagged results. [#]Results below detection limit.

Magnesium (Mg)

Laboratory	Media blanks*	Spiked filters
1	<0.548 (×4)	4.80, 4.55, 4.68
2	0.774, 0.735, 0.712	5.64, 5.89, 5.93
3	(no results)	(no results)
4	<0.25 (×3)	0.515 (×3)
5	1.12, 0.50, 0.51	6.36, 5.80, 5.78
6	0.75, 0.45 (×2)	4.64, 4.80, 4.83
7	0.597, 0.596, 0.538	6.51, 6.38, 6.38
8	0.43, 0.36, 0.46	7.38, 5.22, 5.14
9	0.378, 0.408, 0.461	5.15, 5.20, 5.15
10	0.461, 0.467, 0.458	5.39, 5.34, 5.34
11	1.1, 1.0, 0.86	5.4, 6.6, 6.5
12	0.52, 0.50, 0.56	5.2, 5.2, 5.0
13	0.50, 0.55 (×2)	5.10, 5.50, 5.20
14	0.414, 0.522, 0.422	5.2, 5.6, 5.4
15	(no results)	(no results)
16	(no results)	(no results)
17	1.01, 1.23, 1.47	5.71, 6.56, 6.62
18	[0.621, 1.22, 0.828]†	6.88, 6.56, 6.29
19	–# (×3)	4.30, 3.34, 3.28
20	1.28, 0.69, 0.84	7.41, 6.96, 7.67

*Significant blank levels. Flagged result. #Results below detection limit. †Informational values.

Manganese (Mn)

Laboratory	Media blanks	Spiked filters
1	<0.009 (×4)	0.490, 0.463, 0.490
2	(0) (×3)	0.506, 0.520, 0.489
3	<0.13 (×3)	0.478, 0.481, 0.489
4	<0.05 (×3)	0.5 (×3)
5	0.01 (×3)	0.49, 0.48 (×2)
6	0.022, 0.011, 0.010	0.49, 0.48, 0.50
7	0.0474, 0.0461, 0.0458	0.548, 0.543, 0.554
8	<0.02 (×3)	0.454, 0.450, 0.441
9	0.014, 0.010, 0.009	0.526, 0.533, 0.515
10	0.0093, 0.0084, 0.0096	0.496, 0.492, 0.493
11	0.019, 0.029, 0.092	0.63, 0.62, 0.73
12	<0.025 (×3)	0.42, 0.40, 0.41
13	(0) (×3)	0.45, 0.40 (×2)
14	0.006, 0.005, 0.001	0.497, 0.516 (×2)
15	<0.50 (×3)	<0.50 (×3)
16	<0.025 (×3)	0.49, 0.48, 0.47
17	2.59, 2.46, 2.48	3.06, 3.07, 3.08
18	[0.036, 0.042, 0.031]†	0.528. 0.541, 0.526
19	(0) (×3)	0.51, 0.49, 0.47
20	–*	0.64, 0.63, 0.59

Flagged results. †Informational values. *Results below detection limit.

Molybdenum (Mo)

Laboratory	Media blanks	Spiked filters
1	<0.002 (×4)	0.458, 0.440, 0.470
2	(0) (×3)	0.496, 0.508, 0.513
3	<0.13 (×3)	0.542, 0.544, 0.530
4	<1 (×3)	<1 (×3)
5	-0.01, 0.01 (×2)	0.51, 0.52, 0.49
6	0.00, 0.001, 0.003	0.51, 0.52, 0.50
7	0.0492, 0.0204, 0.0168	0.513, 0.509, 0.491
8	0.005, 0.004, 0.010	0.504, 0.492, 0.478
9	0.002 (×3)	0.514, 0.540, 0.502
10	0.0054, 0.0024, 0.0040	0.502, 0.496, 0.488
11	0.013, 0.025, 0.017	0.68, 0.61 (×2)
12	–* (×3)	0,43, 0.53, 0.47
13	(0) (×3)	0.192, 0.200, 0.196
14	<0.014 (×3)	0.492, 0.507, 0.513
15	<0.50 (×3)	<0.50 (×3)
16	(no results)	(no results)
17	0.286, 0.134, 0.096	0.700, 0.773, 0.704
18	[0.267, 1.461, -0.013]†	0.491, 0.490, 0.548
19	(0) (×3)	0.51, 0.49, 0.47
20	0.11, 0.15, 0.05	0.64, 0.60, 0.65

*Results below detection limit. Flagged results. †Informational values.

Nickel (Ni)

Laboratory	Media blanks	Spiked filters
1	0.015 (×2), 0.020, 0.021	0.495, 0.465, 0.500
2	(0) (×3)	0.517, 0.534, 0.530
3	<0.25 (×3)	0.464, 0.461, 0.475
4	<0.1 (×3)	0.5 (×3)
5	0.02 (×3)	0.49, 0.51 (×2)
6	0.112, 0.028, 0.050	0.51, 0.52, 0.50
7	0.0233, 0.069, 0.059	0.545. 0.543, 0.528
8	<0.02, 0.048, 0.195	0.508, 0.495, 0.519
9	0.039, 0.021, 0.020	0.506, 0.522, 0.509
10	0.0266, 0.0186, 0.0196	0.510, 0.517, 0.508
11	0.069, 0.052, 0.055	0.62, 0.61, 0.84
12	<0.100 (×3)	0.47, 0.43, 0.53
13	(0) (×3)	(0) (×3)
14	[0.036, 0.028, 0.026]†	0.502, 0.516, 0.518
15	<0.50 (×3)	<0.50 (×3)
16	<0.25 (×3)	0.53, 0.52, 0.49
17	0.102, 0.242, 0.053	0.523, 0.545, 0.593
18	[1.28, 6.58, 0.034]†	0.577, 0.551, 0.866
19	(0) (×3)	0.44, 0.53, 0.41
20	–# (×2), 0.28	0.39, 0.32, 0.35

Flagged results. †Informational values. #Results below detection limit.

Selenium (Se)

Laboratory	Media blanks	Spiked filters
1	<0.115 (×4)	0.380, 0.373, 0.398
2	(0) (×3)	0.429, 0.434, 0.437
3	<0.25 (×3)	0.398, 0.414, 0.314
4	<0.25 (×3)	0.5 (×3)
5	0.01, 0.00 (×2)	0.42, 0.47, 0.44
6	0.003, 0.016, 0.000	0.45, 0.47 (×2)
7	0.037, 0.090. -0.001	0.443, 0.589, 0.468
8	<0.4 (×3)	0.58, 0.46 (×2)
9	(0) (×3)	0.498, 0.522, 0.469
10	–*	0.536, 0.528, 0.517
11	0.033, 0.11, 0.12	0.54 (×2), 0.62
12	<0.100 (×3)	0.61, 0.53, 0.63
13	0.086, 0.098, 0.041	0.489, 0.604, 0.443
14	<0.042 (×3)	0.360, 0.361, 0.373
15	<0.50 (×3)	<0.50 (×3)
16	<0.25 (×3)	0.48, 0.47, 0.45
17	0.365, 0, 0	0.395, 0.397, 1.37
18	– (×3)	0.550, 0.451, 0.206
19	– (×3)	0.70, 0.41, 0.55
20	0.05, 0.05, 0.07	0.57, 0.57, 0.55

*Results below detection limit. Flagged results.

Silver (Ag)

Laboratory	Media blanks	Spiked filters
1	<0.006 (×4)	0.453, 0.433, 0.453
2	(0)	0.496, 0.512, 0.507
3	<0.05 (×3)	0.529, 0.519, 0.520
4	<10 (×3)	<10 (×3)
5	(0) (×3)	0.49, 0.51, 0.48
6	0.001 (×2), 0.002	0.5 (×3)
7	–* (×3)	0.294, 0.341, 0.358
8	<0.009 (×3)	0.531, 0.516, 0.507
9	0.001, 0.00 (×2)	0.594, 0.605, 0.561
10	– (×3)	0.488, 0.482 (×2)
11	(0) (×3)	0.67, 0.61 (×2)
12	– (×3)	0.50, 0.46, 0.49
13	0.15, 0.10 (×2)	0.60, 0.65, 0.65
14	<0.186 (×3)	0.244, [0.035, 0.143]†
15	(no results)	(no results)
16	5.3, 7.9, 5.8	7.6, 10.5, 0.5
17	(0) (×3)	(0) (×3)
18	[-0.003, -0.007, 0.006]†	[0.455, 0.944, -0.001]†
19	– (×3)	0.47, 0.48, 0.78
20	– (×3)	0.62, 0.61, 0.58

*Results below detection limit. Flagged results. †Informational values.

Tin (Sn)

Laboratory	Media blanks	Spiked filters
1	<0.187 (×4)	0.473, 0.465, 0.475
2	(0)	0.512, 0.547, 0.554
3	<0.13 (×3)	0.514, 0.518, 0.510
4	<0.25 (×3)	0.5 (×3)
5	(no results)	(no results)
6	0.002, 0.000, 0.001	0.51, 0.50, 0.51
7	0.034, 0.016, 0.009	0.582, 0.580, 0.566
8	<0.008 (×3)	0.484, 0.469, 0.486
9	0.007, 0.005 (×2)	0.477, 0.499, 0.493
10	0.0013 (×3)	0.485, 0.478, 0.479
11	0.31, 0.41, 0.39	0.92, 0.96, 0.93
12	–* (×3)	0.43, 0.42, 0.47
13	0.307, 0.301, 0.300	0.745, 0.756, 0.765
14	<0.011 (×3)	0.509, 0.523, 0.521
15	<0.50 (×3)	<0.50 (×3)
16	(no results)	(no results)
17	(0) (×3)	0.664, 0.68, 0.512
18	-0.011 (×3)	0.384, 0.352, 0.351
19	– (×3)	0.78, 0.53, 0.73
20	– (×3)	0.72, 0.65, 0.64

*Result below detection limit. Flagged results.

Uranium (U)

Laboratory	Media blanks	Spiked filters
1	<0.038 (×4)	0.475, 0.453, 0.483
2	(0) (×3)	0.507, 0.511, 0.505
3	<0.025 (×3)	0.501, 0.492, 0.497
4	(no results)	(no results)
5	(no results)	(no results)
6	(no results)	(no results)
7	0.0132, 0.0079, 0.0062	0.489, 0.483, 0.480
8	<0.0008 (×3)	0.521, 0.520, 0.507
9	(0) (×3)	0.515, 0.533, 0.529
10	–* (×3)	0.487, 0.481, 0.482
11	(0) (×3)	0.45, 0.47, 0.47
12	– (×3)	0.45, 0.48, 0.47
13	0.243, 0.239 (×2)	0.694, 0.692, 0.687
14	<0.008 (×3)	0.461, 0.454, 0.473
15	(no results)	(no results)
16	<0.05 (×3)	0.50, 0.49, 0.49
17	(no results)	(no results)
18	-0.001 (×3)	0.454, 0.462 (×2)
19	(0) (×3)	0.50, 0.30, 1.08
20	– (×3)	5.5, 5.5, 5.4

*Result below detection limit. Flagged results.

Vanadium (V)

Laboratory	Media blanks	Spiked filters
1	(no results)	(no results)
2	0.0374, 0.0316, 0.0293	0.435, 0.456, 0.453
3	<1.3 (×3)	<1.3 (×3)
4	<0.05 (×3)	<0.05 (×3)
5	(0) (×3)	0.46, 0.48 (×2)
6	(0) (×3)	0.47, 0.48 (×2)
7	0.0015, 0.0097, 0.0031	0.510, 0.474, 0.457
8	1.06, 0.65, 1.22	1.08, 1.09, 1.55
9	0.013, 0.013, 0.013	0.289, 0.343, 0.272
10	–* (×3)	0.513, 0.512, 0.511
11	(0) (×3)	(0) (×3)
12	0.0085, 0.0065, 0.0075	0.48, 0.49, 0.46
13	(0) (×3)	0.300, 0.321, 0.375
14	<0.005 (×3)	0.500, 0.489, 0.508
15	<0.50 (×3)	<0.50 (×3)
16	<0.05 (×3)	0.48, 0.47, 0.48
17	(0) (×3)	0, 0.116, 0.379
18	[9.39, 8.66, 0.291]†	[12.5, 14.2, 2.86]†
19	– (×3)	0.69, 0.46, 0.48
20	– (×3)	0.70, 0.64, 0.54

*Results below detection limit. Flagged results. †Informational values.

Zinc (Zn)

Laboratory	Media blanks*	Spiked filters
1	0.440, 0.462, 0.430, 0.533	4.88 (×2), 4.55
2	0.602, 0.581, 1.85	5.35, 5.43, 5.68
3	5.08, 0.546, 1.85	5.52, 5.51, 5.46
4	<0.25 (×3)	5.2, 5.1, 4.8
5	1.44, 0.49, 0.50	5.15, 5.17, 5.32
6	2.79, 0.83, 0.87	5.89, 5.84, 5.82
7	0.515, 0.590, 0.527	5.72, 5.70, 5.61
8	0.54, 0.47, 0.46	5.14, 5.06, 5.12
9	0.698, 0.504, 0.527	5.71, 5.86, 5.68
10	0.697, 0.699, 0.693	5.96, 6.10, 5.97
11	0.58, 0.46, 0.54	6.3, 6.9, 6.1
12	0.59, 0.62, 1.4	5.4, 5.5, 5.0
13	1.11, 0.98, 0.96	5.54, 5.59, 5.77
14	1.05, 1.01, 0.900	6.57, 8.52, 6.49
15	<0.50 (×3)	4.81, 4.86, 4.97
16	1.3, 1.0, 0.5	5.2, 5.2, 5.1
17	0.657, 0.537, 0.578	5.59, 5.78, 5.64
18	[1.066, 1.063, 0.740]†	5.91, 6.12, 5.43
19	–* (×3)	5.53, 5.69, 4.16
20	0.79, 0.69, 11.35	6.39, 6.27, 6.01

*Highly significant blank levels. Flagged results. †Informational values. *Results below detection limit.