

# Supplementary Materials: Aerosols as Vectors for Contaminants: A Perspective Based on Outdoor Aerosol Data from Kuwait

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**Table S1.** Polonium-210 activity concentration (Bq kg<sup>-1</sup> dry weight  $\pm 1\sigma$ ) in size fractioned aerosol samples collected from Remote and Urban sites in Kuwait.

Sampling date m/d/a	Remote Site			Urban Site		
	PM <sub>&gt;10</sub>	PM <sub>2.5-10</sub>	PM <sub>0.39-2.5</sub>	PM <sub>&gt;10</sub>	PM <sub>2.5-10</sub>	PM <sub>0.39-2.5</sub>
2/3/2019	1994 $\pm$ 111	2310 $\pm$ 157	2086 $\pm$ 103	2438 $\pm$ 122	2375 $\pm$ 165	2537 $\pm$ 144
3/3/2019	2315 $\pm$ 109	2305 $\pm$ 124	2333 $\pm$ 127	2352 $\pm$ 109	2559 $\pm$ 122	2344 $\pm$ 108
4/7/2019	2479 $\pm$ 138	2218 $\pm$ 102	2285 $\pm$ 119	2353 $\pm$ 121	2353 $\pm$ 125	2375 $\pm$ 129
5/5/2019	1501 $\pm$ 62	2541 $\pm$ 152	2314 $\pm$ 112	1989 $\pm$ 99	2537 $\pm$ 114	2399 $\pm$ 115
6/2/2019	2812 $\pm$ 139	2514 $\pm$ 127	2482 $\pm$ 140	2232 $\pm$ 122	2563 $\pm$ 147	2459 $\pm$ 137
7/7/2019	3161 $\pm$ 170	2722 $\pm$ 140	2451 $\pm$ 134	1942 $\pm$ 101	2566 $\pm$ 138	2554 $\pm$ 139
8/4/2019	2816 $\pm$ 166	2359 $\pm$ 123	2227 $\pm$ 128	2429 $\pm$ 129	2286 $\pm$ 125	2575 $\pm$ 134
9/1/2019	2458 $\pm$ 140	2393 $\pm$ 124	2226 $\pm$ 117	2299 $\pm$ 118	2327 $\pm$ 119	2512 $\pm$ 128
10/6/2019	2397 $\pm$ 128	2727 $\pm$ 147	2165 $\pm$ 109	2707 $\pm$ 130	2643 $\pm$ 148	2556 $\pm$ 142
11/3/2019	2539 $\pm$ 149	2469 $\pm$ 142	2421 $\pm$ 139	2037 $\pm$ 108	2829 $\pm$ 161	2599 $\pm$ 140
12/1/2019	2913 $\pm$ 156	2572 $\pm$ 131	2407 $\pm$ 113	2233 $\pm$ 127	2479 $\pm$ 150	2196 $\pm$ 112
1/5/2020	2492 $\pm$ 134	2886 $\pm$ 155	2410 $\pm$ 128	2158 $\pm$ 122	2909 $\pm$ 158	2356 $\pm$ 133
1/19/2020	2431 $\pm$ 112	2447 $\pm$ 123	2439 $\pm$ 142	2613 $\pm$ 149	2775 $\pm$ 144	2437 $\pm$ 116
2/2/2020	2402 $\pm$ 126	2722 $\pm$ 115	2358 $\pm$ 111	2257 $\pm$ 120	2936 $\pm$ 145	2786 $\pm$ 112
<b>Mean</b>	<b>2482</b>	<b>2513</b>	<b>2329</b>	<b>2289</b>	<b>2581</b>	<b>2477</b>

**Table S2.** Lead-210 activity concentration (Bq kg<sup>-1</sup> dry weight  $\pm 1\sigma$ ) in size fractioned aerosol samples collected from Remote and Urban sites in Kuwait.

Sampling date m/d/a	Remote Site			Urban Site		
	PM <sub>&gt;10</sub>	PM <sub>2.5-10</sub>	PM <sub>0.39-2.5</sub>	PM <sub>&gt;10</sub>	PM <sub>2.5-10</sub>	PM <sub>0.39-2.5</sub>
2/3/2019	563 $\pm$ 21	617 $\pm$ 19	615 $\pm$ 19	849 $\pm$ 21	743 $\pm$ 22	753 $\pm$ 24
3/3/2019	674 $\pm$ 20	732 $\pm$ 23	709 $\pm$ 23	823 $\pm$ 21	860 $\pm$ 22	744 $\pm$ 26
4/7/2019	735 $\pm$ 27	721 $\pm$ 20	663 $\pm$ 24	730 $\pm$ 20	735 $\pm$ 21	685 $\pm$ 17
5/5/2019	464 $\pm$ 19	733 $\pm$ 21	676 $\pm$ 20	585 $\pm$ 16	772 $\pm$ 25	756 $\pm$ 23
6/2/2019	1013 $\pm$ 28	816 $\pm$ 21	717 $\pm$ 22	692 $\pm$ 19	801 $\pm$ 19	733 $\pm$ 23
7/7/2019	1045 $\pm$ 32	861 $\pm$ 23	714 $\pm$ 18	607 $\pm$ 18	830 $\pm$ 23	777 $\pm$ 22
8/4/2019	895 $\pm$ 25	775 $\pm$ 21	640 $\pm$ 20	770 $\pm$ 22	684 $\pm$ 22	774 $\pm$ 23
9/1/2019	654 $\pm$ 20	706 $\pm$ 22	730 $\pm$ 23	759 $\pm$ 21	693 $\pm$ 15	791 $\pm$ 29

10/6/2019	879±23	856±21	652±19	841±23	823±22	782±21
11/3/2019	780±22	749±22	836±22	635±22	812±19	807±27
12/1/2019	993±26	840±16	777±20	690±20	826±24	678±19
1/5/2020	689±20	985±27	783±20	693±15	963±23	736±20
1/19/2020	740±22	807±23	764±23	792±22	824±20	783±19
2/2/2020	747±25	895±21	759±22	734±19	928±24	879±24
<b>Mean</b>	<b>777</b>	<b>793</b>	<b>720</b>	<b>729</b>	<b>807</b>	<b>763</b>

**Table S3.** Bacterial and Fungal load in outdoor aerosols.

<i>Date</i>	<i>Size Cut off</i>	<i>Bacterial cells m<sup>-3</sup> of air</i>	<i>Fungal cells m<sup>-3</sup> of air</i>
15/02/2021	< 0.22 µm	7.92E+05	<LOD
	> 0.22 µm	6.05E+03	<LOD
22/02/2021	< 0.22 µm	1.21E+07	<LOD
	> 0.22 µm	1.78E+05	<LOD
12/04/2021	< 0.22 µm	1.24E+08	2.66E+06
	> 0.22 µm	3.73E+04	6.53E+03
20/04/2021	< 0.22 µm	1.05E+08	2.69E+06
	> 0.22 µm	8.42E+05	7.33E+03
27/04/2021	< 0.22 µm	7.81E+06	<LOD
	> 0.22 µm	2.08E+06	3.73E+02
04/05/2021	< 0.22 µm	2.57E+07	8.40E+03
	> 0.22 µm	4.60E+05	3.99E+02
10/05/2021	< 0.22 µm	1.82E+07	1.51E+04
	> 0.22 µm	1.53E+06	2.11E+02
20/05/2021	< 0.22 µm	3.01E+07	<LOD
	> 0.22 µm	6.17E+06	<LOD