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Supporting Information:

Statistical assessment of an atmospheric mercury passive sampler at a regional site in South Africa

Xoliswa E. V. Job,^a Kerneels Jaars,^{*a} Pieter G. van Zyl,^a Katrina MacSween,^b Liezl Bredenkamp,^a Miroslav Josipovic,^a Lynwill G. Martin,^{a,c} Ville Vakkari,^{a,d} Markku Kulmala^e and Lauri Laakso^{a,d}

^a Atmospheric Chemistry Research Group, Chemical Resource Beneficiation, North-West University, Potchefstroom, South Africa.

^b Air Quality Research Division, Science and Technology Branch, Environment and Climate Change Canada, Toronto, Canada.

^c South African Weather Service c/o CSIR, Stellenbosch, South Africa.

^d Finnish Meteorological Institute, Helsinki, Finland.

^e Institute for Atmospheric and Earth System Research, University of Helsinki, Helsinki, 00014, Finland.

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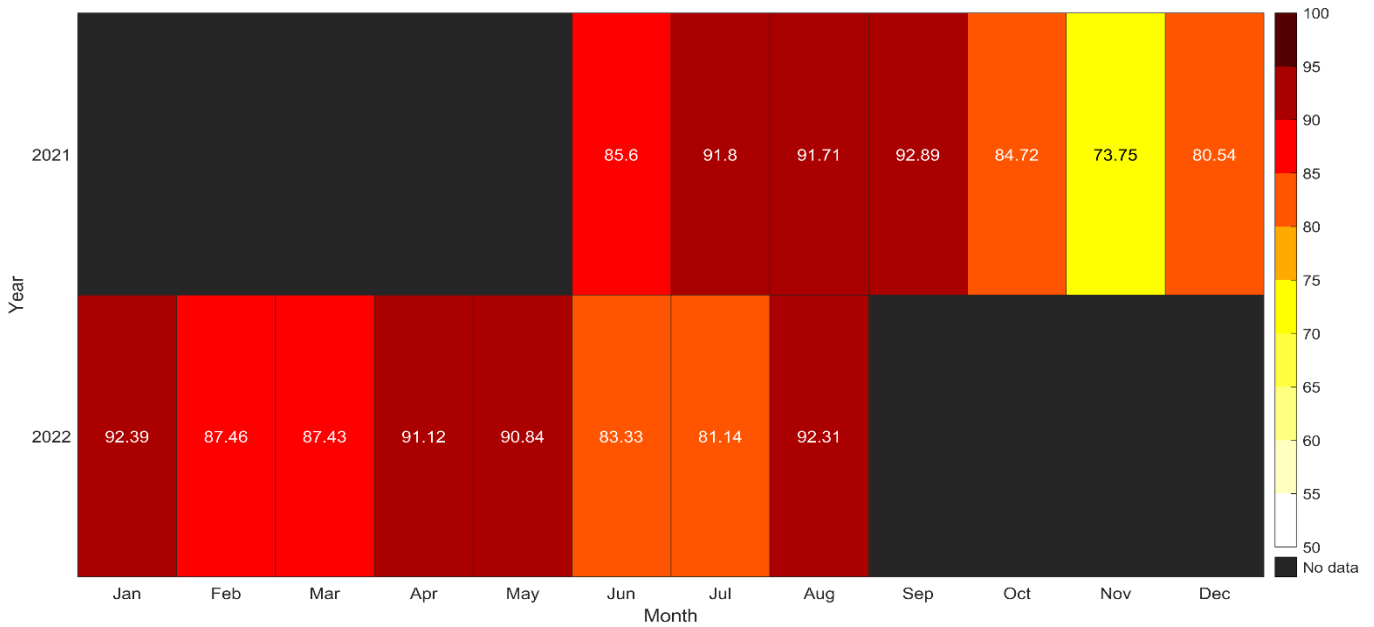


Figure S1 Percentage of data coverage over the 14-month sampling period with the Tekran® 2537X

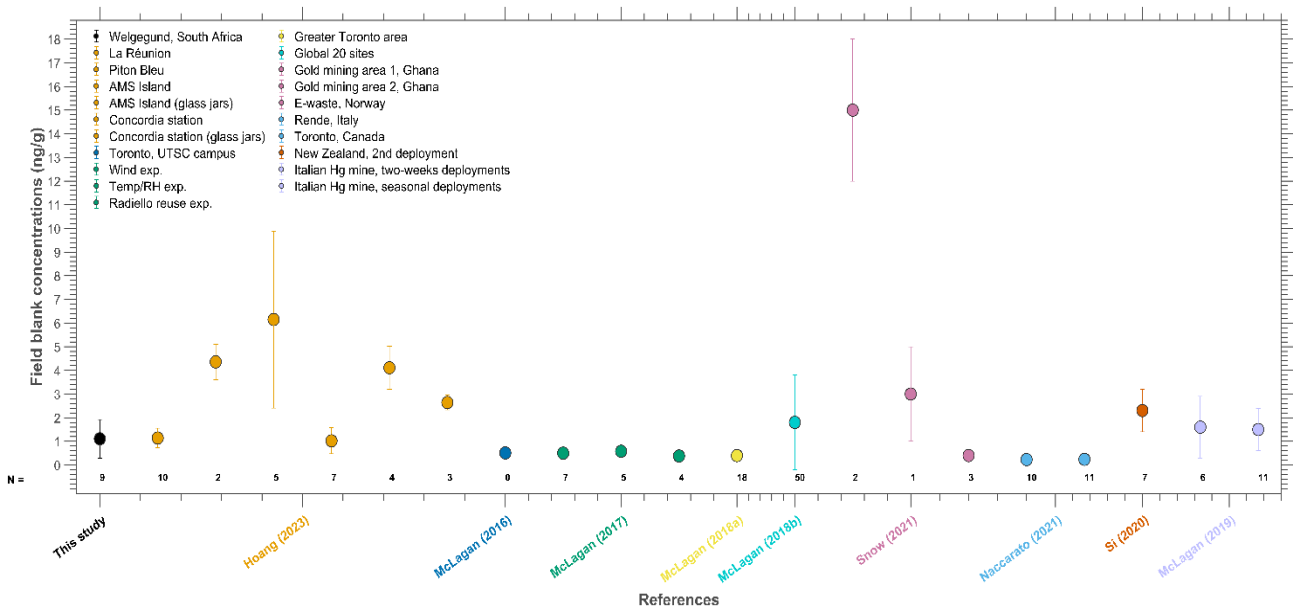


Figure S2 Errorbar plot (mean±SD) comparing field blank concentrations determined in different studies utilizing mercury passive samplers. The number (N) of blanks deployed during each study is indicated at the bottom

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Table S1: Analytical detail on the passive air samplers deployed at Welgegund

Month	Deployment days	T (°C)	WS (m/s)	m c (g)	mc-avg (g)	mHg (ng)	mHg-avg (ng)	ng/g	Blank	Blank corrected (ng)	Uptake rate (ng/day)	Calculated SR (m ³ /day)	Active conc. X days	Temp./wind speed adjusted SR (m ³ /day)
Jun-21	29.04	11.21	2.70	0.60 0.62	0.61	5.36 7.68	6.52	10.72	13% 10%	5.78	0.199	0.109	52.824	0.127
Jul-21	28.10	9.49	2.72	0.63 0.60	0.62	11.48 9.34	10.41	16.83	7% 8%	9.67	0.344	0.143	67.394	0.125
Aug-21	34.93	13.37	4.00	0.62 0.60	0.61	10.52 8.84	9.68	15.89	7% 8%	8.94	0.256	0.155	57.627	0.133
Sep-21	27.90	18.02	4.95	0.62 0.58	0.60	8.33 4.93	6.63	11.05	9% 14%	5.90	0.212	0.160	36.805	0.140
Oct-21	30.06	17.88	5.00	0.59 0.62	0.61	5.54 8.65	7.09	11.70	13% 9%	6.36	0.212	0.150	42.383	0.140
Nov-21	32.90	21.49	5.19	0.61 0.62	0.61	6.72 10.43	8.58	13.99	11% 7%	7.84	0.238	0.150	52.337	0.144
Dec-21	35.24	29.49	4.54	0.51 0.54	0.52	5.71 7.04	6.37	12.17	11% 9%	5.74	0.163	0.122	46.973	0.149

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Table S1: *Continued*

Jan-22	27.83	20.66	3.44	0.56 0.53	0.54	5.96 6.23	6.09	11.18	11% 10%	5.43	0.195	0.112	48.586	0.138
Feb-22	28.94	21.73	3.21	0.58 0.56	0.57	6.12 5.78	5.95	10.49	11% 12%	5.26	0.182	0.119	44.194	0.138
Mar-22	27.02	18.95	2.88	0.57 0.57	0.57	7.13 7.20	7.17	12.60	10% 10%	6.48	0.240	0.125	51.776	0.134
Apr-22	35.09	15.36	3.07	0.49 0.53	0.51	6.98 7.64	7.31	14.29	8% 8%	6.69	0.191	0.116	57.450	0.132
May-22	27.98	14.43	2.81	0.55 0.50	0.53	7.24 6.73	6.99	13.31	9% 9%	6.35	0.227	0.112	56.568	0.130
Jun-22	34.99	11.23	3.15	0.59 0.60	0.59	8.20 7.62	7.91	13.29	9% 10%	7.19	0.205	0.116	61.870	0.128
Jul-22	28.03	12.49	3.42	0.61 0.61	0.61	5.57 6.43	6.00	9.83	13% 11%	5.26	0.188	0.106	49.730	0.130
Aug-22	34.95	15.02	3.91	0.60 0.59	0.60	7.72 7.68	7.70	12.93	9% 9%	6.98	0.200	0.132	53.015	0.134

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Table S2: Guidelines for interpreting the ρ , r , p -value and ϵ^2

Spearman correlation coefficient (ρ) and r		Interpretation
0.50 to 1.00	- 0.50 to -1.00	strong/significant
0.50 to 0.30	- 0.50 to -0.30	moderate/less significant
0 to 0.30	0 to -0.30	weak/insignificant
Ranges to approximately translate the p -value into the language of statistical evidence		Reference
Little or no statistical evidence	p -value ≥ 0.1	1. J. Cohen, Statistical power analysis, <i>Current directions in psychological science</i> , 1992, 1 , 98-101.
Weak statistical evidence	$0.05 \leq p$ -value < 0.1	
Statistical evidence	$0.01 \leq p$ -value < 0.05	
Strong Statistical evidence	$0.001 \leq p$ -value < 0.01	
Very strong statistical evidence	p -value < 0.001	
Assessment of group effect size using ϵ^2		
small	$0.01 \leq \epsilon^2 < 0.059$	
moderate	$0.060 \leq \epsilon^2 < 0.139$	
large	$\epsilon^2 \geq 0.14$	