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Supplement of

Atmospheric mercury concentrations observed at ground-based monitoring sites globally distributed in the framework of the GMOS network

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Table S1. Monthly means in ($ng\ m^{-3}$) generated from the available monthly data points for 2013 and 2014 at each GMOS site. Number of available monthly data points are reported in Table S3.

Code	Jan		Feb		Mar		Apr		May		Jun		Jul		Aug		Sep		Oct		Nov		Dec		
	2013	2014	2013	2014	2013	2014	2013	2014	2013	2014	2013	2014	2013	2014	2013	2014	2013	2014	2013	2014	2013	2014	2013	2014	
Northern Hemisphere	VRS	1.50	1.45	1.45	1.47	1.55	1.42	1.13	1.36	1.64	1.90	1.48	1.99	1.48	1.48	1.85	-	1.52	1.40	1.40	1.41	-	1.38	1.11	
	PAL	-	1.59	-	1.69	1.65	-	1.60	1.51	1.36	1.48	1.39	1.48	1.39	1.36	1.44	1.39	1.33	1.36	1.36	1.47	1.37	1.52	1.46	
	RAO	1.46	-	1.50	1.77	1.37	1.65	1.34	1.34	1.30	1.45	1.34	1.30	1.30	1.30	1.44	1.45	-	1.46	1.46	-	1.49	-	1.51	
	MHD	-	1.47	1.62	1.50	1.62	1.44	1.50	1.40	1.47	1.38	1.48	1.40	-	1.32	1.43	1.45	1.39	1.23	1.27	1.34	1.31	1.42	1.46	1.51
	LIS	1.56	1.45	1.59	1.50	1.51	1.53	1.43	1.41	1.33	1.35	1.18	1.32	1.18	1.32	1.25	1.34	1.13	1.24	1.26	1.29	1.40	1.38	1.56	
	CMA	-	-	-	-	1.67	1.60	1.60	1.60	1.57	1.57	-	1.58	-	1.38	1.74	1.74	1.92	1.92	1.88	1.88	1.79	-	1.88	1.88
	MCH	2.03	1.70	1.70	1.73	1.91	1.82	1.72	1.68	1.77	1.62	-	1.37	1.37	1.36	1.91	1.51	1.51	1.30	1.74	1.57	1.92	1.62	1.78	1.54
	LON	-	-	1.57	-	1.74	-	1.74	-	1.51	-	-	1.44	-	1.44	1.27	-	1.22	-	1.26	-	-	-	-	-
	MWA	1.08	1.08	1.55	1.13	1.49	1.06	1.73	1.14	1.50	0.91	1.26	-	1.25	-	-	2.07	-	1.61	1.36	1.75	1.08	1.60	1.13	1.33
	MIN	1.92	1.98	2.01	1.88	2.00	1.97	2.04	1.94	2.25	2.10	1.63	1.99	1.56	1.81	1.58	1.73	1.58	1.84	1.85	1.75	1.86	-	1.82	1.97
	EVK	1.12	1.21	1.05	1.23	1.13	1.31	1.17	1.43	1.17	1.47	1.11	1.47	1.01	1.31	-	1.31	-	1.16	-	-	-	-	-	-
	CHE	1.87	1.78	1.85	1.79	1.92	1.93	1.94	1.91	1.80	2.08	1.66	1.99	1.43	1.74	1.50	1.48	1.60	1.57	1.57	1.60	1.86	1.57	1.86	1.74
MAL	1.99	1.50	-	1.39	-	1.30	2.41	1.60	2.11	1.45	2.07	1.49	1.64	-	2.02	1.48	2.28	-	2.44	1.41	1.55	1.00	1.90	1.23	
Means	1.62	1.52	1.59	1.55	1.63	1.57	1.68	1.51	1.59	1.53	1.52	1.55	1.43	1.44	1.58	1.56	1.51	1.47	1.55	1.54	1.53	1.47	1.58	1.53	
Tropics	SIS	1.47	1.04	1.27	0.96	1.25	0.96	1.26	1.20	1.25	1.23	1.17	1.14	1.06	1.10	1.17	1.12	1.12	1.00	-	1.21	-	1.29	-	
	CAL	1.15	1.29	1.18	1.23	1.19	1.22	1.16	1.21	1.24	-	1.26	1.12	1.25	1.16	1.29	1.17	1.17	1.12	1.12	1.20	1.17	1.38	1.33	
	KOD	1.61	-	1.57	-	1.62	1.50	1.65	1.69	1.62	-	1.37	1.39	1.32	1.44	1.37	1.35	1.39	1.44	1.58	-	1.75	-	1.89	
	NIK	-	-	1.57	-	1.32	-	1.03	-	1.01	-	0.96	-	1.09	-	-	-	1.13	1.51	1.03	1.29	1.06	1.24	1.17	
	MAN	-	-	1.07	0.98	1.13	1.02	-	1.10	-	0.99	-	0.96	-	0.94	1.12	0.95	-	1.18	1.18	1.01	-	-	1.05	
Means	1.41	1.17	1.33	1.06	1.30	1.17	1.27	1.30	1.28	1.28	1.15	1.15	1.22	1.12	1.12	1.17	1.19	1.29	1.08	1.35	1.12	1.39	1.26	1.36	
Southern Hemisphere	AMS	1.03	1.03	0.98	1.04	0.98	1.07	0.98	1.06	0.89	1.08	1.07	1.12	1.08	1.12	1.07	1.05	1.04	1.00	1.00	0.99	0.99	1.10	1.03	
	CPT	1.04	1.06	-	1.14	1.08	1.04	1.02	1.04	1.02	0.96	1.00	0.91	0.97	1.09	0.95	1.25	1.09	1.08	1.12	1.19	0.99	1.13	0.97	
	BAR	0.91	0.85	0.90	0.74	0.82	0.79	0.79	0.89	0.93	0.92	0.94	0.89	0.94	0.95	0.96	0.95	0.90	0.92	0.84	0.92	0.94	-	0.81	
	DDU	0.88	0.91	0.81	0.42	0.81	-	0.96	0.97	0.88	0.68	0.83	-	0.80	0.82	0.73	-	0.68	-	-	-	-	0.67	0.98	
	DMC	0.69	-	0.68	-	1.16	-	1.16	-	1.01	-	0.93	-	0.89	-	0.75	-	0.85	-	0.75	-	0.66	-	0.84	-
Means	0.91	0.96	0.84	0.84	0.97	0.97	0.99	0.99	0.93	0.92	0.96	0.96	0.94	0.98	0.90	1.09	0.92	1.02	0.93	1.04	0.90	0.93	0.94	1.07	

Table S2. Means, Standard Deviations (St. Dev), percentiles 5th, 25th, 50th (median), 75th and 95th generated from the available annual data points for 2013 and 2014 at each GMOS site.

Annually- based statistics																		
Code	Resolution (s)	n		Mean		St. Dev		5 th		25 th		50 th		75 th		95 th		
		2013	2014	2013	2014	2013	2014	2013	2014	2013	2014	2013	2014	2013	2014	2013	2014	
Northern Hemisphere	VRS	300	72361	35373	1.61	1.41	0.41	0.35	1.01	0.95	1.39	1.15	1.52	1.41	1.83	1.59	2.33	2.01
	PAL	300	72361	35373	1.45	1.47	0.11	0.17	1.27	1.23	1.38	1.36	1.46	1.46	1.53	1.60	1.61	1.73
	RAO	300	72361	35373	1.43	1.48	0.16	0.23	1.19	1.18	1.34	1.32	1.42	1.46	1.49	1.61	1.65	1.93
	MHD	900/300	72361	35373	1.46	1.41	0.17	0.14	1.19	1.17	1.35	1.34	1.47	1.41	1.56	1.49	1.70	1.61
	LIS	300	72361	35373	1.34	1.39	0.38	0.40	0.79	0.84	1.11	1.14	1.30	1.34	1.56	1.59	1.98	2.11
	CM	300	72361	35373	-	1.69	0.36	0.29	1.40	1.30	1.59	1.50	1.88	1.66	2.11	1.85	2.54	2.19
	MCH	300	72361	35373	1.78	1.57	0.48	0.42	1.22	1.06	1.49	1.33	1.66	1.48	1.98	1.73	2.74	2.41
	LON	300	72361	35373	1.43	-	0.33	-	0.98	-	1.24	-	1.43	-	1.57	-	2.00	-
	MWA	300	72361	35373	1.33	1.31	0.64	0.60	0.63	0.68	0.90	0.87	1.33	1.18	1.59	1.53	2.65	2.47
	MIN	3600	72361	35373	1.86	1.91	0.40	0.40	1.34	1.45	1.60	1.65	1.79	1.82	2.04	2.06	2.61	2.65
	EVK	300	72361	35373	1.11	1.33	0.42	0.22	0.78	0.98	0.95	1.18	1.11	1.32	1.23	1.46	1.50	1.70
	CHE	300	72361	35373	1.74	1.78	0.38	0.35	1.30	1.40	1.50	1.50	1.60	1.70	1.90	1.90	2.40	2.50
MAL	300	72361	35373	2.04	1.33	0.64	0.40	1.32	0.83	1.60	1.06	2.04	1.26	2.33	1.49	3.26	2.10	
Tropics	SIS	300	72361	35373	1.20	1.11	0.24	0.37	0.80	0.82	1.06	0.95	1.20	1.08	1.33	1.21	1.58	1.45
	CAL	300	72361	35373	1.22	1.20	0.14	0.09	1.04	1.08	1.15	1.14	1.22	1.19	1.27	1.25	1.46	1.36
	KOD	300	72361	35373	1.54	1.54	0.20	0.26	1.25	1.20	1.40	1.35	1.54	1.48	1.68	1.71	1.87	2.03
	NIK	60/300	72361	35373	1.13	1.28	0.42	0.46	0.43	0.75	0.81	1.08	1.12	1.29	1.43	1.47	1.78	1.74
	MAN	600/300	72361	35373	1.08	0.99	0.23	0.23	0.77	0.69	0.95	0.85	1.09	0.96	1.20	1.11	1.52	1.43
Southern Hemisphere	AMS	300	72361	35373	1.03	1.05	0.09	0.05	0.87	0.95	0.98	1.02	1.03	1.05	1.09	1.08	1.17	1.12
	CPT	3600	72361	35373	1.03	1.09	0.11	0.12	0.83	0.89	0.97	1.01	1.03	1.09	1.10	1.18	1.18	1.27
	BAR	1800	72361	35373	0.89	0.87	0.15	0.15	0.60	0.60	0.82	0.77	0.89	0.88	1.00	0.99	1.09	1.07
	DDU	3600	72361	35373	0.85	0.86	0.19	0.38	0.57	0.31	0.75	0.57	0.85	0.82	0.93	1.09	1.15	1.54
	DMC	3600	72361	35373	0.84	-	0.27	-	0.32	-	0.70	-	0.87	-	0.98	-	1.28	-

Table S3. Monthly - based number of available data points.

Code		Resolution (s)	Jan		Feb		Mar		Apr		May		Jun	
			2013	2014	2013	2014	2013	2014	2013	2014	2013	2014	2013	2014
Northern Hemisphere	VRS	300	8434	6432	4599	6711	-	1955	6578	1363	7212	6089	7576	5008
	PAL	300	-	8773	-	7966	-	8834	-	8091	8827	8366	7554	8560
	RAO	300	6416	-	5918	5856	5689	6266	2056	4396	1221	6298	-	5688
	MHD	900/300	-	2774	2044	2561	2835	2847	2749	1147	772	2735	1015	2591
	LIS	300	8949	7872	8024	7039	5083	7421	8651	6508	8895	8262	5697	8032
	CMA	300	-	-	-	-	-	5832	-	8126	-	7313	-	4216
	MCH	300	3131	4408	3402	3961	4009	4384	6201	4252	5997	4400	-	-
	LON	300	-	-	1454	-	2389	-	4752	-	4392	-	5060	-
	MWA	300	2481	2490	2669	1155	4055	4107	3034	3816	1508	3908	787	-
	MIN	3600	711	713	655	644	734	713	706	690	726	669	702	691
	EVK	900	1078	2023	1944	2645	1681	2885	2183	2751	1366	2409	855	1994
	CHE	3600	378	477	431	431	378	476	436	416	393	478	461	464
MAL	300	1200	2407	-	2472	-	3884	1869	3283	4798	2166	6866	2793	
Tropics	SIS	300	1525	6568	7723	4964	7922	6508	7749	6141	4275	7511	7247	7882
	CAL	300	3947	8552	6317	7984	8818	8731	1498	4415	3327	-	8479	1283
	KOD	300	8511	-	6092	-	8601	5418	6772	8405	6939	8174	-	8327
	NIK	60/300	-	-	4289	-	9051	-	8470	-	8868	-	7704	-
	MAN	600/300	-	-	3242	3058	708	2936	-	3917	-	5107	-	4962
Southern Hemisphere	AMS	3600	474	448	417	372	457	461	385	446	437	504	414	405
	CPT	1800	1025	1289	-	949	1348	1362	1361	1312	1458	1459	1277	1407
	BAR	300	7275	6238	4727	6208	6216	6044	8545	5232	8486	5048	6718	4843
	DDU	3600	644	585	450	26	215	-	635	50	725	84	661	-
	DMC	3600	762	-	585	-	487	-	271	-	464	-	297	-

Code		Resolution (s)	Jul		Aug		Sep		Oct		Nov		Dec	
			2013	2014	2013	2014	2013	2014	2013	2014	2013	2014	2013	2014
Northern Hemisphere	VRS	300	7493	301	6203	-	4889	-	5891	-	7030	-	6456	7514
	PAL	300	8056	7747	8397	8566	8476	7318	7221	7768	8539	4388	8053	4287
	RAO	300	-	6063	-	-	-	-	-	3407	-	6250	-	5437
	MHD	900/300	-	2265	313	2852	2474	2668	2601	2823	2065	2763	2855	2444
	LIS	300	8632	8353	8947	7842	7837	7648	6835	7628	8275	6295	8236	5035
	CMA	300	1128	3900	-	2538	-	4120	-	5035	-	2095	2347	6914
	MCH	300	2143	2166	1152	5260	1358	7772	3664	7650	4520	6982	4286	8662
	LON	300	3323	-	5657	-	5567	-	3382	-	-	-	-	-
	MWA	300	4908	-	-	1487	-	2926	1237	3471	2350	1125	5232	3863
	MIN	3600	508	691	715	713	469	691	488	544	690	-	712	545
	EVK	900	1457	2249	-	2882	-	1136	-	-	-	-	-	-
	CHE	3600	448	387	477	314	461	463	341	363	470	463	477	468
MAL	300	7023	-	7191	-	5881	-	8358	3594	4237	6192	5173	3893	
Tropics	SIS	300	4026	8240	6856	7341	7254	2831	6547	-	6370	-	6939	-
	CAL	300	8462	8807	4888	8815	6127	8428	8105	2356	7291	5560	8825	3958
	KOD	300	8553	8523	8319	8476	3894	8408	-	8207	-	5891	-	7476
	NIK	60/300	5544	-	-	-	1053	4795	2873	8322	10221	8682	1892	8130
	MAN	600/300	-	4103	2189	2211	-	-	2600	-	2588	-	-	1161
Southern Hemisphere	AMS	3600	551	543	534	265	508	492	515	508	516	488	390	556
	CPT	1800	1457	1394	1176	1376	1220	1344	1362	1422	854	1385	114	1378
	BAR	300	4598	1068	5971	4548	5724	4809	4070	151	5943	-	3048	-
	DDU	3600	639	17	655	-	82	-	-	-	-	569	415	626
	DMC	3600	554	-	591	-	616	-	245	-	431	-	213	240

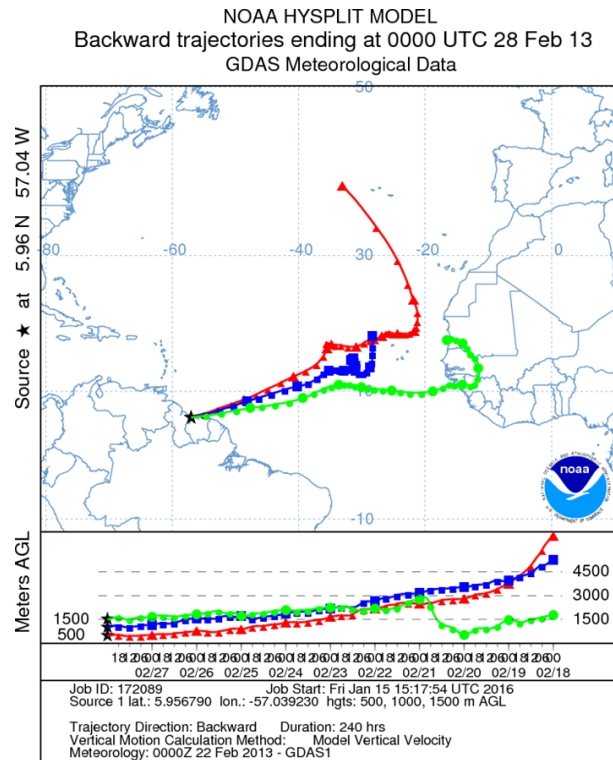


Figure S1. The 28 Feb 2013 case analysis for NIK: 10-day HYSPLIT backward trajectories using the Hybrid single-particle Lagrangian integrated trajectory model (HYSPLIT) available at the NOAA Air Resources Laboratory (Air Resources Laboratory 2010).

NOAA HYSPLIT MODEL
 Backward trajectories ending at 1600 UTC 07 Sep 14
 GDAS Meteorological Data

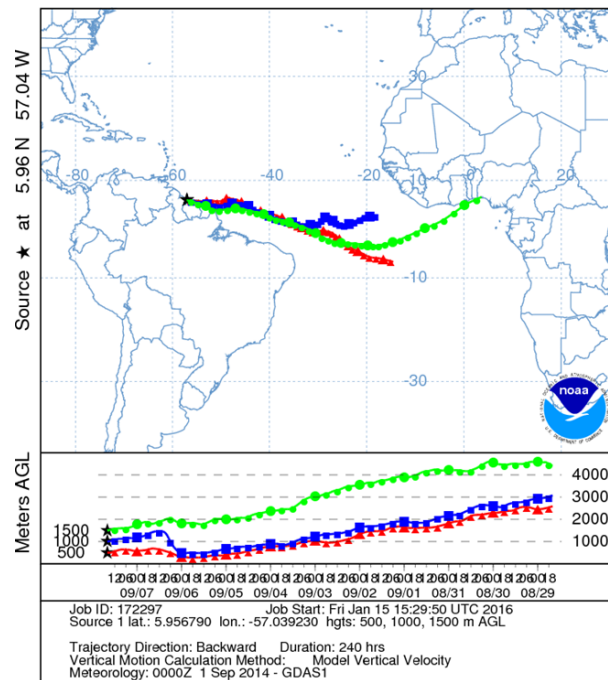


Figure S2. The 7 Sep 2014 case analysis for NIK: 10-day HYSPLIT backward trajectories using the Hybrid single-particle Lagrangian integrated trajectory model (HYSPLIT) available at the NOAA Air Resources Laboratory (Air Resources Laboratory 2010).