Supplemental Information

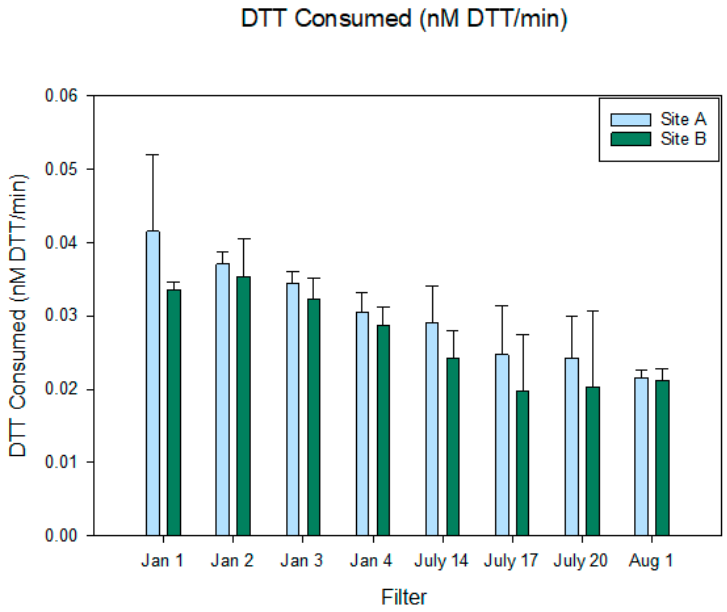

Figure S1. DTT consumed (nM DTT/min) per Filter. DTT (dithiothreitol) consumption (nM) per minute for each sampling day for Sites A and B are reported following blank filter corrections. The legend represents Site A and Site B with their corresponding colors. Mean DTT consumption values with standard deviation, represented by error bars, are reported based on triplicate measurements. Students t-tests were run to determine significant differences ($p<0.05$) between the two sampling sites for each sampling day, no significant differences were observed.

Table S1. ICP-MS Instrumental Parameters	
Instrumentation: Thermo Fisher Element XR HR-ICP-MS	
Detector Voltage: 2100V	Cool Gas Flow: 14.00 L/min
Peristaltic Pump: 20 rpm	Auxiliary Flow: 0.82 L/min
Torch X/Y/Z: 6.71/2.40/-1.20 mm	Sample Flow: 1.12 L/min
Power: 1260 W	Lenses: Factory Default Voltages

Table S2. Element Concentrations (ppb)

		Quantified Elements																			
Sampling Date	Filter	Sr	Std. Dev.	Ag	Std. Dev.	Cd	Std. Dev.	Cs	Std. Dev.	Tl	Std. Dev.	Pb	Std. Dev.	U	Std. Dev.	Ca	Std. Dev.	Fe	Std. Dev.	Total	Std. Dev.
Jan 1A	7650	BLQ	---	BLQ	---	BLQ	---	0.06	0.00	0.03	0.00	0.04	0.00	BLQ	---	13.15	0.73	4.62	0.34	17.90	5.71
Jan 1B	7655	9.94	0.50	BLQ	---	0.09	0.01	0.09	0.00	0.04	0.00	0.34	0.04	0.00	0.00	34.49	5.04	8.03	1.85	53.03	11.96
Jan 2A	7651	1.19	0.03	BLQ	---	0.46	0.02	0.12	0.01	0.08	0.00	0.46	0.02	0.00	0.00	47.07	7.87	5.01	0.29	54.38	16.36
Jan 2B	7656	0.98	0.02	BLQ	---	0.13	0.01	0.10	0.01	0.05	0.00	BLQ	---	0.00	0.00	21.65	1.51	4.14	0.30	27.06	7.98
Jan 3A	7679	5.30	0.14	BLQ	---	0.49	0.02	0.12	0.00	0.08	0.00	2.04	0.09	0.01	0.00	62.72	12.70	10.67	0.27	81.42	21.55
Jan 3B	7657	BLQ	---	BLQ	---	BLQ	---	0.07	0.01	0.02	0.00	1.50	0.10	0.01	0.00	20.45	1.58	8.86	0.54	30.90	8.25
Jan 4A	7680	0.33	0.02	BLQ	---	1.59	0.08	0.05	0.00	0.05	0.00	0.68	0.06	0.00	0.00	31.12	0.82	4.14	0.11	37.96	10.75
Jan 4B	7658	1.95	0.12	0.03	0.00	0.10	0.01	0.11	0.01	0.03	0.00	1.77	0.24	0.02	0.00	28.80	2.62	11.13	0.61	43.94	9.66
Jul 14A	8247	BLQ	---	BLQ	---	BLQ	---	0.01	0.00	BLQ	---	BLQ	---	0.00	0.00	13.49	0.90	4.38	0.83	17.88	6.35
Jul 14B	8230	BLQ	---	BLQ	---	BLQ	---	0.02	0.00	BLQ	---	0.19	0.01	BLQ	---	43.64	13.86	11.72	2.28	55.57	20.57
Jul 17A	8248	BLQ	---	BLQ	---	BLQ	---	0.01	0.00	BLQ	---	BLQ	---	0.00	0.00	21.02	2.25	4.30	0.51	25.33	10.00
Jul 17B	8231	BLQ	---	BLQ	---	BLQ	---	0.02	0.00	BLQ	---	BLQ	---	BLQ	---	21.39	1.76	1.47	0.13	22.88	11.94
Jul 20A	8249	BLQ	---	BLQ	---	BLQ	---	0.01	0.00	0.00	0.00	BLQ	---	0.00	0.00	52.78	10.99	4.23	0.31	57.02	23.20
Jul 20B	8232	BLQ	---	BLQ	---	BLQ	---	0.02	0.00	BLQ	---	0.02	0.00	BLQ	---	6.22	1.90	5.39	0.47	11.64	3.36
Aug 1A	8281	BLQ	---	BLQ	---	BLQ	---	0.01	0.00	BLQ	---	0.08	0.01	0.00	0.00	41.69	8.61	6.32	0.77	48.10	18.13
Aug 1B	8300	BLQ	---	BLQ	---	BLQ	---	0.04	0.00	BLQ	---	0.55	0.04	BLQ	---	40.64	2.06	4.57	0.17	45.80	19.56

* BLQ = Below Limit of Quantification

** Elements that were BLQ for all samples were removed from table.

Table S3. Element Concentrations (ppb/µg)

Quantified Elements

Sampling Date	Filter	Sr	Std. Dev.	Ag	Std. Dev.	Cd	Std. Dev.	Cs	Std. Dev.	Tl	Std. Dev.	Pb	Std. Dev.	U	Std. Dev.	Ca	Std. Dev.	Fe	Std. Dev.	Total	Std. Dev.
Jan 1A	7650	BLQ	---	BLQ	---	BLQ	---	1.40E-04	4.49E-07	6.08E-05	8.50E-08	1.02E-04	2.41E-07	BLQ	---	3.19E-02	2.35E-02	1.12E-02	2.90E-03	4.34E-02	1.39E-02
Jan 1B	7655	2.41E-02	4.51E-03	BLQ	---	2.26E-04	3.98E-07	2.24E-04	3.91E-07	9.83E-05	7.53E-08	8.30E-04	5.36E-06	1.70E-07	2.24E-13	8.35E-02	5.43E-02	1.94E-02	2.94E-03	1.28E-01	2.90E-02
Jan 2A	7651	1.57E-03	3.42E-05	BLQ	---	6.08E-04	5.14E-06	1.55E-04	3.34E-07	1.01E-04	1.42E-07	6.08E-04	5.14E-06	2.29E-06	7.31E-11	6.23E-02	5.39E-02	6.63E-03	6.10E-04	7.19E-02	2.16E-02
Jan 2B	7656	2.21E-03	8.02E-05	BLQ	---	3.00E-04	1.48E-06	2.26E-04	8.40E-07	1.19E-04	2.31E-07	BLQ	---	1.11E-05	2.04E-09	4.88E-02	3.90E-02	9.32E-03	1.42E-03	6.09E-02	1.80E-02
Jan 3A	7679	6.75E-03	4.39E-04	BLQ	---	6.26E-04	3.78E-06	1.47E-04	2.08E-07	1.03E-04	1.01E-07	2.60E-03	6.50E-05	1.70E-05	2.77E-09	7.99E-02	6.15E-02	1.36E-02	1.78E-03	1.04E-01	2.75E-02
Jan 3B	7657	BLQ	---	BLQ	---	BLQ	---	2.10E-04	4.65E-07	6.31E-05	4.20E-08	4.59E-03	2.22E-04	2.02E-05	4.30E-09	6.27E-02	4.15E-02	2.72E-02	7.79E-03	9.48E-02	2.53E-02
Jan 4A	7680	6.47E-04	5.59E-06	BLQ	---	3.13E-03	1.31E-04	1.07E-04	1.53E-07	9.14E-05	1.12E-07	1.34E-03	2.41E-05	4.96E-06	3.30E-10	6.13E-02	5.02E-02	8.15E-03	8.90E-04	7.47E-02	2.12E-02
Jan 4B	7658	4.55E-03	2.02E-04	6.09E-05	3.62E-08	2.35E-04	5.39E-07	2.54E-04	6.28E-07	6.71E-05	4.39E-08	4.14E-03	1.67E-04	4.00E-05	1.57E-08	6.71E-02	4.40E-02	2.59E-02	6.57E-03	1.02E-01	2.25E-02
Jul 14A	8247	BLQ	---	BLQ	---	BLQ	---	1.20E-04	8.38E-08	BLQ	---	BLQ	---	2.97E-05	5.12E-09	1.30E-01	9.78E-02	4.21E-02	1.03E-02	1.72E-01	6.11E-02
Jul 14B	8230	BLQ	---	BLQ	---	BLQ	---	2.38E-04	1.00E-07	BLQ	---	1.91E-03	6.45E-06	BLQ	---	4.45E-01	3.50E-01	1.20E-01	2.52E-02	5.67E-01	2.10E-01
Jul 17A	8248	BLQ	---	BLQ	---	BLQ	---	1.50E-04	7.21E-08	BLQ	---	BLQ	---	7.13E-06	1.63E-10	2.59E-01	2.15E-01	5.31E-02	9.00E-03	3.13E-01	1.23E-01
Jul 17B	8231	BLQ	---	BLQ	---	BLQ	---	1.80E-04	1.29E-07	BLQ	---	BLQ	---	BLQ	---	2.35E-01	2.20E-01	1.62E-02	1.04E-03	2.51E-01	1.31E-01
Jul 20A	8249	BLQ	---	BLQ	---	BLQ	---	9.13E-05	1.08E-08	8.30E-06	8.94E-11	BLQ	---	4.78E-05	2.96E-09	7.13E-01	6.60E-01	5.72E-02	4.25E-03	7.71E-01	3.14E-01
Jul 20B	8232	BLQ	---	BLQ	---	BLQ	---	1.73E-04	2.42E-07	BLQ	---	1.77E-04	2.53E-07	BLQ	---	6.61E-02	3.53E-02	5.73E-02	2.65E-02	1.24E-01	3.57E-02
Aug 1A	8281	BLQ	---	BLQ	---	BLQ	---	1.14E-04	3.08E-08	BLQ	---	7.34E-04	1.28E-06	6.15E-07	8.96E-13	3.66E-01	3.17E-01	5.54E-02	7.28E-03	4.22E-01	1.59E-01
Aug 1B	8300	BLQ	---	BLQ	---	BLQ	---	4.24E-04	3.93E-07	BLQ	---	5.53E-03	6.67E-05	BLQ	---	4.06E-01	3.61E-01	4.57E-02	4.56E-03	4.58E-01	1.96E-01

* BLQ = Below Limit of Quantification

** Elements that were BLQ for all samples were removed from table.

Table S4. Element Concentrations (ng/m^3)

		Quantified Elements																			
Sampling Date	Filter	Sr	Std. Dev.	Ag	Std. Dev.	Cd	Std. Dev.	Cs	Std. Dev.	Tl	Std. Dev.	Pb	Std. Dev.	U	Std. Dev.	Ca	Std. Dev.	Fe	Std. Dev.	Total	Std. Dev.
Jan 1A	7650	BLQ	---	BLQ	---	BLQ	---	0.04	0.00	0.02	0.00	0.03	0.00	BLQ	---	8.77	0.48	3.08	0.23	1.19E+01	3.80E+00
Jan 1B	7655	6.63	0.33	BLQ	---	0.06	0.01	0.06	0.00	0.03	0.00	0.23	0.03	0.00	0.00	23.00	3.36	5.35	1.24	3.54E+01	7.97E+00
Jan 2A	7651	0.79	0.02	BLQ	---	0.31	0.01	0.08	0.00	0.05	0.00	0.31	0.01	0.00	0.00	31.38	5.25	3.34	0.20	3.63E+01	1.09E+01
Jan 2B	7656	0.65	0.02	BLQ	---	0.09	0.01	0.07	0.00	0.04	0.00	BLQ	---	0.00	0.00	14.43	1.00	2.76	0.20	1.80E+01	5.32E+00
Jan 3A	7679	3.53	0.10	BLQ	---	0.33	0.01	0.08	0.00	0.05	0.00	1.36	0.06	0.01	0.00	41.81	8.47	7.11	0.18	5.43E+01	1.44E+01
Jan 3B	7657	BLQ	---	BLQ	---	BLQ	---	0.05	0.00	0.01	0.00	1.00	0.06	0.00	0.00	13.64	1.05	5.91	0.36	2.06E+01	5.50E+00
Jan 4A	7680	0.22	0.01	BLQ	---	1.06	0.06	0.04	0.00	0.03	0.00	0.45	0.04	0.00	0.00	20.74	0.55	2.76	0.07	2.53E+01	7.16E+00
Jan 4B	7658	1.30	0.08	0.02	0.00	0.07	0.01	0.07	0.00	0.02	0.00	1.18	0.16	0.01	0.00	19.20	1.74	7.42	0.41	2.93E+01	6.44E+00
Jul 14A	8247	BLQ	---	BLQ	---	BLQ	---	0.01	0.00	BLQ	---	BLQ	---	0.00	0.00	8.99	0.60	2.92	0.55	1.19E+01	4.24E+00
Jul 14B	8230	BLQ	---	BLQ	---	BLQ	---	0.02	0.00	BLQ	BLQ	0.12	0.01	BLQ	---	29.09	9.24	7.81	1.52	3.70E+01	1.37E+01
Jul 17A	8248	BLQ	---	BLQ	---	BLQ	---	0.01	0.00	BLQ	BLQ	BLQ	---	0.00	0.00	14.01	1.50	2.87	0.34	1.69E+01	6.67E+00
Jul 17B	8231	BLQ	---	BLQ	---	BLQ	---	0.01	0.00	BLQ	BLQ	BLQ	---	BLQ	---	14.26	1.17	0.98	0.09	1.53E+01	7.96E+00
Jul 20A	8249	BLQ	---	BLQ	---	BLQ	---	0.00	0.00	0.00	0.00	BLQ	---	0.00	0.00	35.18	7.33	2.82	0.21	3.80E+01	1.55E+01
Jul 20B	8232	BLQ	---	BLQ	---	BLQ	---	0.01	0.00	BLQ	BLQ	0.01	0.00	BLQ	---	4.14	1.27	3.59	0.31	7.76E+00	2.24E+00
Aug 1A	8281	BLQ	---	BLQ	---	BLQ	---	0.01	0.00	BLQ	BLQ	0.06	0.01	0.00	0.00	27.79	5.74	4.21	0.52	3.21E+01	1.21E+01
Aug 1B	8300	BLQ	---	BLQ	---	BLQ	---	0.03	0.00	BLQ	BLQ	0.37	0.03	BLQ	---	27.09	1.37	3.05	0.11	3.05E+01	1.30E+01

Table S5. $PM_{2.5}$ Sample Mass				
Site ID	**Sampling Date**	**Filter Number**	**$PM_{2.5}$ Mass (μg)**	**Season**
A	1/1/2016	7650	412	Winter
B	1/1/2016	7655	413	
A	1/2/2016	7651	756	
B	1/2/2016	7656	444	
A	1/3/2016	7679	785	
B	1/3/2016	7657	326	
A	1/4/2016	7680	508	
B	1/4/2016	7658	429	
A	7/14/2016	8247	104	Summer
B	7/14/2016	8230	98	
A	7/17/2016	8248	81	
B	7/17/2016	8231	89	
A	7/20/2016	8249	74	
B	7/20/2016	8232	94	
A	8/1/2016	8281	114	
B	8/1/2016	8300	120	

Table S6. p-values for Pearson correlations												
	DTT/µg/min	**Sr**	**Ag**	**Cd**	**Cs**	**Tl**	**Pb**	**U**	**Ca**	**Fe**	**Total**	**$PM_{2.5}$ mass**
DTT/min	0.147	0.0854	0.707	0.395	2.46E-05	0.000127	0.127	0.2	0.62	0.0925	0.859	4.15E-05
DTT/µg/min		0.00329	0.136	0.00127	7.27E-11	3.52E-10	0.000169	0.00216	0.293	0.18	0.0823	1.82E-11
Sr			0.63	0.568	3.26E-05	0.000211	0.0239	0.124	0.0278	0.00557	0.000407	0.000676
Ag				0.729	0.0135	0.725	0.000248	7.46E-09	0.779	0.0017	0.665	0.345
Cd					0.0392	5.53E-05	0.063	0.372	0.135	0.66	0.134	5.74E-05
Cs						9.87E-18	8.75E-07	8.3E-06	0.0504	0.00319	0.00293	1.26E-18
Tl							0.000195	0.00152	0.00637	0.108	0.000697	1.33E-34
Pb								4.16E-14	0.011	1.42E-07	0.000242	1.05E-05
U									0.0893	2.04E-05	0.00987	0.000349
Ca										0.00856	3.43E-29	0.013
Fe											3.91E-05	0.0433
Total												0.00126

Table S7. p-values for Pearson correlations											
	Sr/µg	**Ag/µg**	**Cd/µg**	**Cs/µg**	**Tl/µg**	**Pb/µg**	**U/µg**	**Ca/µg**	**Fe/µg**	**Total/µg**	**$PM_{2.5}$ mass**
DTT/min	0.118	0.707	0.483	0.961	4.06E-06	0.86	0.491	0.000198	0.0146	0.000224	4.15E-05
DTT/µg/min	0.0135	0.136	0.00334	9.75E-01	5.97E-12	0.151	0.957	5.83E-06	3.25E-08	1.41E-06	1.82E-11
Sr/µg		0.541	0.878	0.356	0.000522	0.934	0.574	0.0733	0.0738	0.093	0.0161
Ag/µg			0.844	0.12	0.386	0.0054	3.70E-04	0.237	0.558	0.263	0.345
Cd/µg				0.0732	0.00084	0.966	0.512	0.0435	0.00781	0.0292	0.000887
Cs/µg					7.78E-01	1.85E-08	0.148	0.771	0.382	0.654	4.37E-01
Tl/µg						0.594	0.963	1.17E-06	1.55E-08	2.97E-07	3.16E-19
Pb/µg							3.77E-01	0.948	0.799	0.97	0.381
U/µg								0.0972	0.963	0.135	0.905
Ca/µg									3.69E-07	6.07E-47	3.02E-06
Fe/µg										4.04E-09	1.48E-07
Total/µg											8.3E-07