

Supplemental Material

Gaseous, PM_{2.5} Mass, and Speciated Emission Factors from Laboratory Chamber Peat Combustion

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Table S1. Gas and particle measurement instrumentation.

Observables	Instrument Make/Model	Measurement Details	Operating Principle and Purpose
Carbon Monoxide (CO)	ThermoFisher 48i CO Analyzer	0.5 to 2 L min ⁻¹ , 0-50 ppm scale, 0.04 ppm LDL ^a , and 30 sec response time	Gas filter correlation with infrared absorption detection. Determines combustion efficiency and carbon balance. Also used to calibrate OH _{ext} in Oxidation Flow Reactor (OFR)
Carbon Dioxide (CO ₂)	Licor LI-840A CO ₂ /H ₂ O Analyzer	up to 1 L min ⁻¹ , 0-20,000 ppm scale, 1 ppm LDL, and 1 sec response time	Non-dispersive Infrared (NDIR) absorption detection. Determines combustion efficiency and carbon balance.
Nitric Oxide/Nitrogen Dioxide (NO/NO ₂)	Thermo 42i NO/NO ₂ Analyzer Ecotech 9841B NO/NO ₂ Analyzer	0.6 L min ⁻¹ , 0.2 ppb LDL, and 40 sec response time 0.64 L min ⁻¹ , 0.25 ppb LDL, and 25 sec response time	Nitrogen compounds are converted to NO and detected by chemiluminescence. An internal converter may cause partial nitric acid (HNO ₃) and peroxyacyl nitrates (PAN) losses in internal plumbing, but partial transmission may increase measured NO ₂ levels. Determines NO and NO ₂ concentrations up- and down-stream of OFR.
Total Reactive Nitrogen (NO _y)	Teledyne T200U NO _y Analyzer	1.6-2.0 L min ⁻¹ , 0.05 ppb LDL, and 20 sec response time	Nitrogen compounds are converted to NO and detected by chemiluminescence. An external converter minimizes HNO ₃ and PAN losses in internal plumbing. Quantifies total nitrogenous gas concentrations including NO, NO ₂ , N ₂ O ₅ , HNO ₃ , HNO ₄ , ClONO ₂ , HONO, alkyl nitrates, and PAN. Determines nitrogen budget.
Ammonia (NH ₃), nitrous oxide (N ₂ O), methane (CH ₄), and C1–C6 carbon compounds	Gasmet DX4015 Fourier Transform Infrared Spectrometer (FTIR)	2 L min ⁻¹ , 0.2 to 2 ppb LDL (depending on peak overlaps), and 120 sec response time	The sampled gas mixture is illuminated with broad-band IR and IR-absorption interference patterns are measured with an interferometer, followed by computer processing with Fourier Transform algorithms. Quantifies organic and nitrogen-containing gas concentrations. Determines nitrogen budget.
Suspended particulate matter < 2.5 µm (PM _{2.5})	TSI DustTrak Model 8532	3 L min ⁻¹ , 1 µg m ⁻³ LDL, and 1 sec response time	PM is measured by photometric light scattering. Determines changes in particle loadings during combustion.

^aLDL=Lower Detection Limit

^bThe Carbon Compounds include hydrogen cyanide (HCN), formaldehyde (CH₂O), methanol (CH₃OH), formic acid (HCOOH), carbonyl sulfide (COS), ethylene (C₂H₄), ethane (C₂H₆), acetaldehyde (C₂H₄O), ethanol (C₂H₅OH), acetic acid (CH₃COOH), propane (C₃H₈), acrolein (C₃H₄O), acetone (C₃H₆O), 3-butadiene (C₄H₆), benzene (C₆H₆), hexane (C₆H₁₄), phenol (C₆H₅OH), and chlorobenzene (C₆H₅Cl) acquired by Fourier Transfer Infrared Spectrometry.

Table S2. Carbon concentrations from multiple analyses to test homogeneity of filter deposit concentrations.

Sample	Homogeneity Test	TC	OC	EC	OC1	OC2	OC3	OC4	EC1	EC2	EC3	OP
Experiment 1	R1	17.02	14.95	2.07	2.35	3.8	5.47	1.71	3	0.57	0.12	1.62
	R2	16.18	14.12	2.06	2.1	3.73	5.3	1.69	2.7	0.58	0.08	1.3
	R3	15.61	13.84	1.77	2.08	3.73	5.15	1.58	2.46	0.6	0.01	1.3
	R4	17.04	14.89	2.15	1.97	3.87	5.68	1.78	2.86	0.66	0.22	1.59
	R5	15.24	13.71	1.53	1.94	3.77	4.85	1.67	2.39	0.61	0.01	1.48
Average $\pm$ Standard Deviation		16.22 $\pm$ 0.81	14.30 $\pm$ 0.58	1.92 $\pm$ 0.26	2.09 $\pm$ 0.16	3.78 $\pm$ 0.06	5.29 $\pm$ 0.32	1.69 $\pm$ 0.07	2.68 $\pm$ 0.26	0.60 $\pm$ 0.04	0.09 $\pm$ 0.09	1.46 $\pm$ 0.15
CV (%)		4.99	4.06	13.54	7.66	1.59	6.05	4.14	9.7	6.67	100	10.27
Experiment 2	R1	16.05	14.12	1.93	2.17	3.78	5.29	1.57	2.65	0.59	0	1.31
	R2	16.89	14.59	2.3	1.13	4.16	5.73	1.85	3.36	0.61	0.05	1.72
	R3	16.47	14.51	1.96	1.86	3.9	4.88	1.88	3.26	0.68	0.01	1.99
	R4	15.77	13.78	1.99	1.91	3.66	4.83	1.76	2.92	0.68	0.01	1.62
	R5	14.88	13.1	1.78	1.1	4.13	4.68	1.62	2.79	0.55	0.01	1.57
Average $\pm$ Standard Deviation		16.01 $\pm$ 0.76	14.02 $\pm$ 0.61	1.99 $\pm$ 0.19	1.63 $\pm$ 0.49	3.93 $\pm$ 0.22	5.08 $\pm$ 0.43	1.74 $\pm$ 0.14	3.00 $\pm$ 0.30	0.62 $\pm$ 0.06	0.02 $\pm$ 0.02	1.64 $\pm$ 0.25
CV (%)		4.75	4.35	9.55	30.06	5.6	8.46	8.05	10	9.68	100	15.24
Experiment 3	R1	14.62	12.78	1.84	1.7	3.27	4.53	1.58	2.7	0.7	0.14	1.7
	R2	13.79	11.82	1.97	1.57	3.15	4.12	1.46	2.46	0.78	0.25	1.52
	R3	14.54	12.45	2.09	1.45	3.55	4.34	1.61	2.63	0.78	0.18	1.5
	R4	14.02	12.41	1.61	1.61	3.22	4.31	1.53	2.53	0.71	0.11	1.74
	R5	13.97	12.15	1.82	1.65	3.36	3.94	1.68	2.56	0.66	0.12	1.52
Average $\pm$ Standard Deviation		14.19 $\pm$ 0.37	12.32 $\pm$ 0.36	1.87 $\pm$ 0.18	1.60 $\pm$ 0.09	3.31 $\pm$ 0.15	4.25 $\pm$ 0.23	1.57 $\pm$ 0.08	2.58 $\pm$ 0.09	0.73 $\pm$ 0.05	0.16 $\pm$ 0.06	1.60 $\pm$ 0.11
CV (%)		2.61	2.92	9.63	5.63	4.53	5.41	5.09	3.49	6.85	37.5	6.88
Experiment 4	R1	13.37	12.07	1.3	0.59	1.83	4.6	1.53	3.94	0.73	0.15	3.52
	R2	13.36	12.19	1.17	0.58	1.8	4.47	1.8	3.96	0.62	0.13	3.54
	R3	13.4	12	1.4	0.74	1.84	4.3	1.58	4.06	0.77	0.11	3.54
	R4	12.86	11.67	1.19	0.67	1.88	4.14	1.62	3.76	0.65	0.14	3.36
	R5	13.33	11.88	1.45	0.7	2.05	4.39	1.65	3.56	0.66	0.32	3.09
Average $\pm$ Standard Deviation		13.26 $\pm$ 0.23	11.96 $\pm$ 0.20	1.30 $\pm$ 0.12	0.66 $\pm$ 0.07	1.88 $\pm$ 0.10	4.38 $\pm$ 0.17	1.64 $\pm$ 0.10	3.86 $\pm$ 0.20	0.69 $\pm$ 0.06	0.17 $\pm$ 0.09	3.41 $\pm$ 0.19
CV (%)		1.73	1.67	9.23	10.61	5.32	3.88	12.2	5.18	8.7	52.94	5.57
Experiment 5	R1	9.86	8.62	1.24	0.52	1.37	3.19	1.5	2.53	0.6	0.15	2.04
	R2	9.08	7.96	1.12	0.44	1.44	2.94	1.29	2.43	0.48	0.06	1.85
	R3	8.7	7.97	0.73	0.43	1.28	3.16	1.09	2.35	0.39	0	2.01
	R4	9.5	8.3	1.2	0.35	1.38	3.14	1.33	2.52	0.55	0.23	2.1
	R5	9.46	8.51	0.95	0.41	1.33	3.29	1.38	2.49	0.54	0.02	2.1
Average $\pm$ Standard Deviation		9.32 $\pm$ 0.44	8.27 $\pm$ 0.30	1.05 $\pm$ 0.21	0.43 $\pm$ 0.06	1.36 $\pm$ 0.06	3.14 $\pm$ 0.13	1.32 $\pm$ 0.15	2.46 $\pm$ 0.07	0.51 $\pm$ 0.08	0.09 $\pm$ 0.10	2.02 $\pm$ 0.10
CV (%)		4.72	3.63	20	13.95	4.41	4.14	11.36	2.85	15.69	111.11	4.95

Table S3. Operational parameters for the 40 peat combustion tests

Peat Type	Peat ID	Voltage ^a (V)	Aging Time (days)	Reactor Relative Humidity (%)	Dilution Ratio	Modified Combustion Efficiency (MCE)	Peat Dry Mass before Burn (g)	Peat Dry Mass after Burn (g)	Sampling Duration (minutes)	Fresh Loading µg per filter	Aged Loading µg per filter	Ratio Aged/Fresh ± Std Dev	Fresh ^b PM _{2.5} Mass µg m ⁻³	Aged ^b PM _{2.5} Mass µg m ⁻³
Oditsovo, Russia	PEAT030	2	2	35	3.13	0.76	16.0	1.0	44	361.00	319.00	0.88 ± 0.019	1640.91	1450.00
	PEAT031	2	2	35	3.22	0.81	15.4	1.0	40	388.00	304.00	0.78 ± 0.017	1940.00	1520.00
	PEAT032	2	2	35	3.22	0.84	15.1	1.0	39	415.00	444.00	1.07 ± 0.018	2128.21	2276.92
	PEAT033	3.5	7	30	3.33	0.82	15.1	0.9	45	361.00	427.00	1.18 ± 0.022	1604.44	1897.78
	PEAT034	3.5	7	26	2.94	0.79	15.7	0.7	41	464.00	417.00	0.90 ± 0.015	2263.41	2034.15
Pskov, Siberia	PEAT035	3.5	7	30	2.95	0.84	15.2	0.8	40	319.00	286.00	0.90 ± 0.022	1595.00	1430.00
	PEAT023	2	2	20	5.03	0.84	47.1	1.9	67	558.00	557.00	1.00 ± 0.031	1665.67	1662.69
	PEAT025	2	2	55	4.71	0.85	25.8	1.0	70	NA ^d	257.00	NA ^d	NA ^d	734.29
	PEAT026	2	2	40	4.68	0.84	26.5	1.0	61	302.00	187.00	0.62 ± 0.0062	990.16	613.11
	PEAT027	3.5	7	40	4.68	0.87	25.6	1.0	52	206.00	142.00	0.69 ± 0.031	792.31	546.15
Northern Alaska, USA	PEAT028	3.5	7	50	4.72	0.83	25.7	1.1	57	384.00	411.00	1.07 ± 0.019	1347.37	1442.11
	PEAT029	3.5	7	35	4.74	0.85	26.1	1.1	68	256.00	304.00	1.19 ± 0.032	752.94	894.12
	PEAT013	2	2	30	4.78	0.84	58.2	13.2	95	246.00	NA ^d	NA ^d	517.89	NA ^d
	PEAT014	2	2	22	2.88	0.84	34.0	5.1	45	476.00	429.00	0.90 ± 0.014	2115.56	1906.67
	PEAT019	2	2	30	2.70	0.82	42.2	6.8	72	628.00	659.00	1.05 ± 0.012	1744.44	1830.56
Putnam County Lakebed, Florida, USA	PEAT020	3.5	7	30	2.69	0.85	39.6	12.2	52	437.00	410.00	0.94 ± 0.016	1680.77	1576.92
	PEAT021 ^c	3.5	7	28	2.78	0.87	40.7	13.4	48	366.00	NA ^d	NA ^d	1525.00	NA ^d
	PEAT022	3.5	7	22	2.77	0.87	38.1	14.4	48	187.00	300.00	1.60 ± 0.053	779.17	1250.00
	PEAT007 ^c	2	2	40	5.02	0.57	41.7	2.5	84	NA ^d	NA ^d	NA ^d	NA ^d	NA ^d
	PEAT008	2	2	25	5.02	0.65	40.4	1.8	73	706.00	668.00	0.95 ± 0.010	1934.25	1830.14
Everglades National Park, Florida, USA	PEAT009	2	2	27	5.27	0.68	40.3	2.9	68	440.00	404.00	0.92 ± 0.017	1294.12	1188.24
	PEAT042 ^c	2	2	36	5.04	0.72	37.5	1.9	65	382.00	357.00	0.93 ± 0.019	1175.38	1098.46
	PEAT043 ^c	2	2	22	5.01	0.71	37.0	1.9	68	381.00	363.00	0.95 ± 0.019	1120.59	1067.65
	PEAT044 ^c	2	2	22	4.98	0.73	38.3	2.0	69	356.00	363.00	1.02 ± 0.021	1031.88	1052.17
	PEAT004 ^c	3.5	7	40	4.89	0.63	39.6	1.9	81	NA ^d	594.00	NA ^d	1466.67	1466.67
Borneo, Malaysia	PEAT005	3.5	7	43	4.89	0.67	37.5	2.0	88	713.00	847.00	1.19 ± 0.011	1620.45	1925.00
	PEAT006	3.5	7	44	4.90	0.58	38.3	2.5	91	648.00	657.00	1.01 ± 0.011	1424.18	1443.96
	PEAT010	2	2	25	5.13	0.91	41.3	13.9	111	182.00	340.00	1.87 ± 0.062	327.93	612.61
	PEAT011	2	2	25	4.10	0.90	61.2	21.5	135	545.00	487.00	0.89 ± 0.012	807.41	721.48
	PEAT012	2	2	17	4.09	0.95	66.5	29.1	119	262.00	247.00	0.94 ± 0.027	440.34	415.13
Putnam County Lakebed, Florida, USA	PEAT015	2	2	30	3.97	0.87	31.8	11.0	55	227.00	223.00	0.98 ± 0.032	825.45	810.91
	PEAT016	3.5	7	33	4.21	0.90	64.7	31.1	85	232.00	410.00	1.77 ± 0.046	545.88	964.71
	PEAT017	3.5	7	48	4.03	0.88	64.2	16.1	113	496.00	971.00	1.96 ± 0.024	877.88	1718.58
	PEAT018	3.5	7	40	4.04	0.89	61.8	35.2	57	225.00	369.00	1.64 ± 0.044	789.47	1294.74
	PEAT036	2	2	37	2.97	0.87	30.3	9.3	66	406.00	322.00	0.79 ± 0.017	1230.30	975.76
Borneo, Malaysia	PEAT037 ^c	2	2	42	2.98	0.82	29.9	7.0	69	368.00	NA ^d	NA ^d	1066.67	NA ^d
	PEAT038	2	2	43	3.02	0.83	30.4	4.2	65	508.00	459.00	0.90 ± 0.014	1563.08	1412.31
	PEAT039	3.5	7	42	3.03	0.82	29.4	7.6	61	343.00	406.00	1.18 ± 0.024	1124.59	1331.15
	PEAT040 ^c	3.5	7	38	3.00	0.81	31.0	4.1	66	458.00	NA ^d	NA ^d	1387.88	NA ^d
	PEAT041	3.5	7	38	3.02	0.81	31.5	7.0	71	419.00	459.00	1.10 ± 0.019	1180.28	1292.96

^aUltraviolet lamp voltages (OFR185 mode) were used to simulate 2- and 7-days of atmospheric aging

- ^bBased on 5 L min⁻¹ flow rate
- ^cThese unpaired samples (fresh and aged, n=5) are not included in the averages by peat type
- ^dData not available
- ^eSamples are with 60 % fuel moisture (n=3) and are treated separately from others (25 % fuel moisture)

Table S4. Summary of the individual and average emission factors (EFs) for CO₂, CO, and CH₄.

a) 25 % Fuel Moisture		Emission Factors in g/kg				
Peat Type (# in the average)	Sample ID	EF _{CO₂}	EF _{CO}	EF _{CH₄}	EF _{CO} /EF _{CO₂}	EF _{CH₄} /EF _{CO₂}
Odintsovo, Russia (n=6)	PEAT030	993.62	196.01	3.30	19.73%	0.33%
	PEAT031	1100.30	159.85	2.85	14.53%	0.26%
	PEAT032	1153.37	135.25	2.59	11.73%	0.22%
	PEAT033	1076.98	149.96	3.00	13.92%	0.28%
	PEAT034	1001.39	171.34	4.53	17.11%	0.45%
	PEAT035	1111.00	131.69	2.91	11.85%	0.26%
Average ± Standard Deviation		1072.78 ± 63.39	157.35 ± 24.08	3.20 ± 0.69	14.81% ± 3.12%	0.30% ± 0.08%
Coefficient of Variation		5.91%	15.30%	21.69%	21.05%	27.19%
Pskov, Siberia (n=6)	PEAT023	1367.04	161.94	8.68	11.85%	0.64%
	PEAT025	1374.99	157.05	7.36	11.42%	0.54%
	PEAT026	1365.39	160.82	8.51	11.78%	0.62%
	PEAT027	1433.54	133.16	6.22	9.29%	0.43%
	PEAT028	1359.12	177.67	5.17	13.07%	0.38%
	PEAT029	1382.53	160.35	5.68	11.60%	0.41%
Average ± Standard Deviation		1380.43 ± 27.26	158.50 ± 14.37	6.94 ± 1.48	11.50% ± 1.23%	0.50% ± 0.11%
Coefficient of Variation		1.97%	9.07%	21.30%	10.70%	22.00%
Northern Alaska, USA (n=5)	PEAT013	1397.08	166.67	6.94	11.93%	0.50%
	PEAT014	1399.49	167.20	6.52	11.95%	0.47%
	PEAT019	1346.83	184.70	5.69	13.71%	0.42%
	PEAT020	1400.35	151.74	4.89	10.84%	0.35%
	PEAT022	1454.59	133.71	4.39	9.19%	0.30%
Average ± Standard Deviation		1399.67 ± 38.13	160.80 ± 19.12	5.69 ± 1.07	11.52% ± 1.66%	0.41% ± 0.08%
Coefficient of Variation		2.72%	11.89%	18.79%	14.42%	19.84%
Putnam County Lakebed, Florida (n=4)	PEAT008	1155.61	391.50	8.80	33.88%	0.76%
	PEAT009	1174.73	347.95	12.65	29.62%	1.08%
	PEAT005	1180.81	378.07	9.09	32.02%	0.77%
	PEAT006	994.43	457.82	11.14	46.04%	1.12%
Average ± Standard Deviation		1126.40 ± 88.63	393.84 ± 46.38	10.42 ± 1.81	35.39% ± 7.31%	0.93% ± 0.19%
Coefficient of Variation		7.87%	11.78%	17.41%	20.66%	20.70%
Everglades National Park, Florida (n=7)	PEAT010	1321.03	84.37	7.20	6.39%	0.54%
	PEAT011	1354.47	91.28	6.48	6.74%	0.48%
	PEAT012	1420.83	51.86	6.47	3.65%	0.46%
	PEAT015	1189.24	116.38	9.75	9.79%	0.82%
	PEAT016	1227.45	91.33	7.93	7.44%	0.65%
	PEAT017	1239.04	108.11	9.19	8.73%	0.74%
	PEAT018	1294.26	104.19	6.52	8.05%	0.50%
Average ± Standard Deviation		1292.33 ± 80.50	92.50 ± 21.10	7.65 ± 1.36	7.25% ± 1.97%	0.60% ± 0.14%
Coefficient of Variation		6.23%	22.81%	17.78%	27.14%	23.48%
Borneo, Malaysia (n=4)	PEAT036	1445.30	140.46	5.54	9.72%	0.38%
	PEAT038	1306.20	172.74	7.00	13.22%	0.54%
	PEAT039	1299.21	182.75	6.34	14.07%	0.49%
	PEAT041	1272.78	189.44	7.71	14.88%	0.61%
Average ± Standard Deviation		1330.87 ± 77.63	171.35 ± 21.70	6.65 ± 0.93	12.97% ± 2.27%	0.50% ± 0.09%
Coefficient of Variation		5.83%	12.67%	13.93%	17.52%	18.56%
All 25 % Peat Samples: (n=32)						
Average ± Standard Deviation		1268.53 ± 139.30	175.23 ± 91.53	6.59 ± 2.42	14.37% ± 8.96%	0.52% ± 0.22%
Coefficient of Variation		10.98%	12.67%	13.93%	62.34%	41.24%
b) 60 % Fuel Moisture						
Putnam County Lakebed, Florida (60 % moisture content) (n=3)	PEAT042	1243.18	315.32	9.26	25.36%	0.74%
	PEAT043	1249.54	324.04	9.40	25.93%	0.75%
	PEAT044	1293.49	304.93	8.89	23.57%	0.69%
Average ± Standard Deviation		1262.07 ± 27.40	314.76 ± 9.56	9.18 ± 0.26	24.96% ± 1.23%	0.73% ± 0.04%
Coefficient of Variation		2.17%	3.04%	2.88%	4.93%	4.90%

Table S5. Summary of the individual and average emission factors (EFs) for NH₃, HCN, NO, NO₂, NO_y, and N₂O.

a) 25 % Fuel Moisture									
Peat Type (# in the average)	Sample ID	Emission Factors in g/kg							
		EF _{NH₃}	EF _{HCN}	EF _{NO}	EF _{NO₂}	EF _{NO_x} (as NO ₂)	EF _{NO_y} (as NO ₂)	EF N ₂ O	NO _x /NO _y
Odintsovo, Russia (n=6)	PEAT030	0.42	2.62	0.28	0.35	0.77	0.93	1.89	82.75%
	PEAT031	0.71	2.63	0.39	0.36	0.96	1.01	1.76	94.73%
	PEAT032	0.78	2.21	0.35	0.48	1.02	1.02	1.47	100.13%
	PEAT033	0.96	2.31	0.39	0.53	1.12	1.18	1.14	94.55%
	PEAT034	1.74	3.09	0.31	0.52	1.00	1.01	2.03	98.67%
	PEAT035	1.32	1.83	0.34	0.64	1.17	1.21	1.56	96.34%
Average ± Standard Deviation		0.99 ± 0.47	2.45 ± 0.43	0.34 ± 0.04	0.48 ± 0.11	1.01 ± 0.14	1.06 ± 0.11	1.64 ± 0.32	95% ± 6%
Coefficient of Variation		47.79%	17.64%	12.85%	22.70%	13.74%	10.33%	19.55%	6.53%
Pskov, Siberia (n=6)	PEAT023	8.31	5.46	0.80	0.39	1.61	2.06	2.53	78.05%
	PEAT025	5.26	5.06	0.78	0.47	1.67	2.46	2.31	67.79%
	PEAT026	7.07	5.71	0.87	0.42	1.76	2.38	2.54	73.99%
	PEAT027	5.69	5.61	0.66	0.37	1.39	1.74	2.47	79.66%
	PEAT028	3.43	4.04	1.02	0.42	1.97	2.39	1.85	82.67%
	PEAT029	3.75	4.14	0.89	0.42	1.78	2.28	2.02	78.29%
Average ± Standard Deviation		5.58 ± 1.89	5.00 ± 0.74	0.84 ± 0.12	0.42 ± 0.03	1.70 ± 0.20	2.22 ± 0.27	2.29 ± 0.29	77% ± 5%
Coefficient of Variation		33.76%	14.84%	14.32%	8.32%	11.59%	12.29%	12.75%	6.78%
Northern Alaska, USA (n=5)	PEAT013	3.32	2.40	0.78	0.18	1.37	2.14	1.65	64.17%
	PEAT014	2.35	2.03	0.38	0.38	0.96	1.20	1.70	79.93%
	PEAT019	2.20	2.23	0.46	0.34	1.05	1.27	1.53	82.37%
	PEAT020	4.14	2.32	1.27	0.54	2.49	2.87	1.30	86.81%
	PEAT022	3.83	2.65	1.33	0.43	2.47	2.99	1.66	82.45%
Average ± Standard Deviation		3.17 ± 0.87	2.33 ± 0.22	0.84 ± 0.44	0.37 ± 0.13	1.67 ± 0.76	2.10 ± 0.85	1.57 ± 0.16	79% ± 9%
Coefficient of Variation		27.38%	9.64%	52.45%	35.73%	45.31%	40.49%	10.33%	11.03%
Putnam County Lakebed, Florida (n=4)	PEAT008	3.51	10.00	1.39	0.68	2.80	3.31	3.08	84.67%
	PEAT009	4.75	14.02	0.74	0.44	1.58	2.47	4.39	64.13%
	PEAT005	3.12	9.16	0.90	0.27	1.66	2.93	3.08	56.48%
	PEAT006	3.42	12.83	na ^a	na ^a	na ^a	2.92	3.74	na ^a
Average ± Standard Deviation		3.70 ± 0.72	11.50 ± 2.30	1.01 ± 0.33	0.35 ± 0.28	2.01 ± 0.68	2.91 ± 0.34	3.57 ± 0.63	68% ± 15%
Coefficient of Variation		19.45%	19.98%	33.10%	81.38%	33.98%	11.85%	17.57%	21.31%
Everglades National Park, Florida (n=7)	PEAT010	8.91	3.66	2.14	0.99	4.27	4.88	1.51	87.50%
	PEAT011	11.88	3.65	1.97	1.08	4.10	4.21	1.13	97.58%
	PEAT012	10.79	3.53	1.14	0.74	2.48	2.56	1.19	96.73%
	PEAT015	16.14	6.57	1.83	0.72	3.52	4.00	1.99	88.07%
	PEAT016	17.84	7.36	1.76	0.89	3.58	6.25	1.43	57.23%
	PEAT017	15.17	6.27	1.85	0.72	3.55	4.15	1.44	85.56%
	PEAT018	13.30	4.80	1.80	0.64	3.40	4.24	1.51	80.26%
Average ± Standard Deviation		13.44 ± 3.15	5.12 ± 1.60	1.78 ± 0.31	0.83 ± 0.16	3.56 ± 0.58	4.33 ± 1.10	1.46 ± 0.28	85% ± 14%
Coefficient of Variation		23.47%	31.25%	17.55%	19.73%	16.20%	25.48%	19.19%	16.02%
Borneo, Malaysia (n=4)	PEAT036	2.87	2.31	0.27	0.37	0.79	1.89	1.63	0.42
	PEAT038	3.82	2.67	0.21	0.28	0.60	0.61	1.82	0.98
	PEAT039	4.03	3.34	0.30	0.34	0.80	0.92	2.02	0.87
	PEAT041	3.91	3.03	0.28	0.40	0.82	0.87	2.04	0.95
Average ± Standard Deviation		3.66 ± 0.53	2.84 ± 0.44	0.26 ± 0.04	0.35 ± 0.05	0.75 ± 0.10	1.07 ± 0.56	1.88 ± 0.19	81% ± 26%
Coefficient of Variation		14.61%	15.63%	14.78%	14.37%	13.62%	52.27%	10.23%	32.56%
All 25 % Peat Samples: (n=32)									
Average ± Standard Deviation		5.59 ± 4.75	4.67 ± 3.08	0.90 ± 0.60	0.49 ± 0.23	1.89 ± 1.09	2.39 ± 1.36	1.98 ± 0.74	82% ± 14%
Coefficient of Variation		85.10%	66.00%	66.39%	45.88%	57.52%	57.03%	37.38%	17.22%
b) 60 % Fuel Moisture									
Putnam County Lakebed, Florida (60 % moisture content) (n=3)	PEAT042	5.84	11.42	0.71	0.70	1.79	2.28	3.90	78.79%
	PEAT043	6.03	11.96	0.79	0.65	1.86	2.60	3.89	71.48%
	PEAT044	5.99	11.60	0.64	0.59	1.58	2.29	3.88	68.94%
Average ± Standard Deviation		5.96 ± 0.10	11.66 ± 0.28	0.71 ± 0.07	0.65 ± 0.05	1.74 ± 0.15	2.39 ± 0.19	3.89 ± 0.01	73% ± 5%
Coefficient of Variation		1.68%	2.39%	10.23%	8.42%	8.55%	7.75%	0.21%	6.99%

^aData not available

Table S6. Summary of the paired fresh and aged emission factors for PM_{2.5} mass and chemical species for six types of peats.

Emission Factor (g/kg) Average ± Standard Deviation									
Aging Time	Boreal					Pskov, Siberia			
	Oditsovo, Russia		7 days			2 days		7 days	
	Fresh 2	Aged 2	Fresh 7	PEAT033, PEAT034, PEAT035	Age 7	Fresh 2	Age 2 ^a	Fresh 7	Age 7
Peat IDs in the average ^b	PEAT030, PEAT031, PEAT032		PEAT033, PEAT034, PEAT035			PEAT023, PEAT025, PEAT026		PEAT027, PEAT028, PEAT029	
PM _{2.5}	4.34E+01 ± 1.40E+00	3.96E+01 ± 6.54E+00	4.19E+01 ± 8.03E+00	4.15E+01 ± 9.08E+00	3.58E+01 ± 5.50E+00	3.58E+01 ± 5.50E+00	2.95E+01 ± 9.26E+00	3.20E+01 ± 8.71E+00	3.18E+01 ± 1.31E+01
Nitric Acid (HNO ₃)	8.02E-02 ± 3.75E-02	1.23E-01 ± 4.44E-02	8.49E-02 ± 1.04E-02	9.70E-02 ± 3.88E-02	6.42E-02 ± 1.32E-02	6.42E-02 ± 1.32E-02	7.63E-02 ± 7.46E-03	8.49E-02 ± 1.50E-02	1.18E-01 ± 4.70E-02
Ammonia (NH ₃)	2.61E+00 ± 4.50E-01	1.25E+00 ± 2.69E-01	3.29E+00 ± 7.08E-01	1.82E+00 ± 2.98E-01	6.43E+00 ± 9.01E-01	6.43E+00 ± 9.01E-01	2.37E+00 ± 7.66E-01	6.99E+00 ± 5.51E-01	1.79E+00 ± 6.77E-01
Water-Soluble Sodium (Na ⁺)	5.28E-03 ± 2.74E-02	5.77E-03 ± 2.74E-02	8.92E-03 ± 2.47E-02	1.29E-02 ± 2.47E-02	3.94E-03 ± 2.53E-02	3.94E-03 ± 2.53E-02	7.32E-03 ± 2.60E-02	2.43E-02 ± 3.26E-02	1.48E-02 ± 2.94E-02
Water-Soluble Potassium (K ⁺)	1.47E-02 ± 1.51E-02	na ^c	4.48E-02 ± 3.46E-02	na ^c	7.02E-03 ± 5.36E-03	7.02E-03 ± 5.36E-03	na ^c	7.58E-03 ± 5.11E-03	na ^c
Chloride (Cl ⁻)	7.14E-02 ± 8.73E-03	4.67E-02 ± 1.43E-02	1.03E-01 ± 2.15E-02	3.75E-02 ± 7.12E-03	3.96E-02 ± 1.54E-02	3.96E-02 ± 1.54E-02	3.19E-02 ± 9.68E-03	5.28E-02 ± 1.32E-02	2.52E-02 ± 8.41E-03
Nitrite (NO ₂ ⁻)	1.58E-02 ± 2.74E-02	4.36E-04 ± 1.31E-02	0.00E+00 ± 1.18E-02	3.49E-04 ± 1.18E-02	5.23E-04 ± 1.21E-02	5.23E-04 ± 1.21E-02	5.98E-04 ± 1.24E-02	8.37E-02 ± 1.44E-01	2.01E-03 ± 1.40E-02
Nitrate (NO ₃ ⁻)	9.81E-02 ± 8.74E-02	2.96E-01 ± 7.88E-02	5.35E-02 ± 1.43E-02	7.88E-01 ± 8.34E-02	4.20E-02 ± 4.59E-02	4.20E-02 ± 4.59E-02	4.98E-01 ± 7.54E-02	5.17E-02 ± 3.98E-02	2.24E+00 ± 4.40E-01
Sulfate (SO ₄ ²⁻)	1.29E-01 ± 1.44E-01	2.83E-01 ± 2.37E-01	6.10E-02 ± 6.65E-03	3.36E-01 ± 4.40E-02	1.04E-01 ± 6.51E-02	1.04E-01 ± 6.51E-02	2.11E-01 ± 1.24E-01	8.63E-02 ± 1.46E-02	3.12E-01 ± 3.61E-02
Ammonium (NH ₄ ⁺)	5.79E-02 ± 6.11E-02	3.84E-01 ± 3.55E-01	4.25E-02 ± 2.67E-02	1.32E+00 ± 2.30E-01	4.65E-04 ± 3.62E-03	4.65E-04 ± 3.62E-03	5.18E-02 ± 4.56E-02	1.46E-02 ± 1.22E-02	1.80E+00 ± 3.55E-01
OC1 (140°C)	5.11E+00 ± 1.53E+00	2.44E+00 ± 1.48E+00	6.68E+00 ± 2.35E+00	1.74E+00 ± 6.39E-01	4.23E+00 ± 1.23E+00	4.23E+00 ± 1.23E+00	1.50E+00 ± 6.37E-01	3.69E+00 ± 1.26E+00	1.34E+00 ± 7.07E-01
OC2 (280°C)	5.72E+00 ± 7.58E-01	3.85E+00 ± 2.51E-01	5.00E+00 ± 6.98E-01	3.71E+00 ± 8.20E-01	7.36E+00 ± 8.50E-01	7.36E+00 ± 8.50E-01	4.61E+00 ± 1.95E+00	6.79E+00 ± 1.98E+00	3.37E+00 ± 1.42E+00
OC3 (480°C)	7.70E+00 ± 1.57E+00	5.76E+00 ± 9.84E-01	7.13E+00 ± 5.30E-01	5.69E+00 ± 3.7E-01	9.20E+00 ± 6.97E-01	9.20E+00 ± 6.97E-01	7.49E+00 ± 1.23E+00	9.21E+00 ± 1.14E+00	6.22E+00 ± 2.32E+00
OC4 (580°C)	2.91E+00 ± 2.99E-01	2.31E+00 ± 4.46E-01	2.48E+00 ± 4.57E-01	1.77E+00 ± 1.65E-01	2.08E+00 ± 2.42E-01	2.08E+00 ± 2.42E-01	2.56E+00 ± 6.59E-01	2.70E+00 ± 9.49E-01	1.81E+00 ± 1.67E-01
Pyrolyzed Carbon (OP)	3.57E+00 ± 8.30E-01	3.23E+00 ± 1.33E+00	3.94E+00 ± 1.14E+00	3.88E+00 ± 6.68E-01	3.37E+00 ± 6.20E-01	3.37E+00 ± 6.20E-01	3.32E+00 ± 6.10E-01	3.29E+00 ± 8.60E-01	3.93E+00 ± 1.17E+00
Organic Carbon (OC)	2.50E+01 ± 2.51E+00	1.76E+01 ± 2.58E+00	2.52E+01 ± 4.61E+00	1.68E+01 ± 3.27E+00	2.62E+01 ± 1.41E+00	2.62E+01 ± 1.41E+00	1.95E+01 ± 3.77E+00	2.57E+01 ± 5.17E+00	1.67E+01 ± 5.55E+00
EC1 (580°C)	2.80E+00 ± 7.85E-01	2.60E+00 ± 7.14E-01	2.76E+00 ± 7.87E-01	3.79E+00 ± 9.81E-01	2.85E+00 ± 1.07E+00	2.85E+00 ± 1.07E+00	2.75E+00 ± 9.68E-01	1.67E+00 ± 4.30E-01	2.53E+00 ± 1.16E+00
EC2 (740°C)	1.57E+00 ± 1.01E+00	1.22E+00 ± 8.01E-01	1.93E+00 ± 3.75E-01	8.77E-01 ± 3.72E-01	1.67E+00 ± 1.25E+00	1.67E+00 ± 1.25E+00	1.47E+00 ± 9.48E-01	1.85E+00 ± 3.30E-01	2.05E+00 ± 3.26E-01
EC3 (840°C)	0.00E+00 ± 9.38E-03	0.00E+00 ± 9.38E-03	0.00E+00 ± 8.45E-03	0.00E+00 ± 8.45E-03	0.00E+00 ± 8.67E-03	0.00E+00 ± 8.67E-03	0.00E+00 ± 1.00E-02	0.00E+00 ± 1.00E-02	0.00E+00 ± 1.00E-02
Elemental Carbon (EC)	7.98E-01 ± 5.56E-01	5.87E-01 ± 1.01E-01	7.46E-01 ± 2.04E-01	7.89E-01 ± 2.42E-01	1.16E+00 ± 2.96E-01	1.16E+00 ± 2.96E-01	9.04E-01 ± 3.52E-01	2.30E-01 ± 3.40E-01	6.48E-01 ± 2.64E-01
Total Carbon (TC)	2.58E+01 ± 2.39E+00	1.82E+01 ± 2.62E+00	2.60E+01 ± 4.51E+00	1.76E+01 ± 3.14E+00	2.74E+01 ± 1.25E+00	2.74E+01 ± 1.25E+00	2.04E+01 ± 4.12E+00	2.59E+01 ± 5.14E+00	1.73E+01 ± 5.80E+00
Water-Soluble OC (WSOC)	1.61E+01 ± 2.34E+00	1.25E+01 ± 1.80E+00	1.49E+01 ± 2.37E+00	1.17E+01 ± 1.65E+00	8.52E+00 ± 1.18E+00	8.52E+00 ± 1.18E+00	8.41E+00 ± 1.24E+00	8.78E+00 ± 1.19E+00 ^d	8.74E+00 ± 1.26E+00
Formate (CH ₂ O ₂ ⁻)	7.24E-02 ± 3.18E-02	9.28E-02 ± 3.63E-02	9.31E-02 ± 2.98E-02	1.24E-01 ± 5.39E-02	1.66E-02 ± 7.63E-03	1.66E-02 ± 7.63E-03	5.68E-02 ± 3.36E-02	2.13E-02 ± 6.21E-03	1.18E-01 ± 6.27E-02
Acetate (C ₂ H ₃ O ₂ ⁻)	2.69E-01 ± 1.62E-01	2.65E-01 ± 1.92E-01	2.75E-01 ± 4.13E-02	3.48E-01 ± 1.81E-01	7.61E-02 ± 6.57E-02	7.61E-02 ± 6.57E-02	1.08E-01 ± 8.10E-02	7.04E-02 ± 3.61E-02	3.09E-01 ± 3.56E-01
Oxalate (C ₂ H ₂ O ₄ ²⁻)	4.38E-02 ± 2.69E-02	3.79E-01 ± 6.51E-02	1.15E-01 ± 7.98E-02	1.15E+00 ± 1.74E-01	2.25E-02 ± 6.87E-03	2.25E-02 ± 6.87E-03	3.56E-01 ± 5.62E-02	2.55E-02 ± 1.35E-02	1.12E+00 ± 2.24E-01
Propionate (C ₃ H ₅ O ₂ ⁻)	1.57E-02 ± 1.39E-02	4.25E-02 ± 5.04E-02	2.62E-02 ± 8.55E-03	9.70E-03 ± 1.48E-02	0.00E+00 ± 6.03E-03	0.00E+00 ± 6.03E-03	1.02E-02 ± 1.77E-02	1.01E-02 ± 8.97E-03	0.00E+00 ± 7.00E-03
Levogluconan (C ₆ H ₁₀ O ₅)	1.54E+01 ± 4.84E+00	9.62E+00 ± 3.16E+00	1.61E+01 ± 4.50E+00	7.90E+00 ± 2.13E+00	2.33E+00 ± 7.47E-01	2.33E+00 ± 7.47E-01	1.22E+00 ± 3.92E-01	2.93E+00 ± 8.11E-01	1.19E+00 ± 4.29E-01
Mannosan (C ₆ H ₁₀ O ₅)	1.71E+00 ± 6.37E-01	9.55E-01 ± 5.01E-01	2.14E+00 ± 7.53E-01	8.69E-01 ± 4.81E-01	2.11E-02 ± 2.45E-01	2.11E-02 ± 2.45E-01	0.00E+00 ± 1.35E-02	3.91E-01 ± 5.12E-01	1.61E-01 ± 4.58E-01
Galactose/Maltitol (C ₆ H ₁₂ O ₆ /C ₁₂ H ₂₂ O ₁₁)	0.00E+00 ± 7.31E-03	0.00E+00 ± 7.31E-03	3.17E-02 ± 1.92E-01	0.00E+00 ± 6.59E-03	2.29E-03 ± 1.25E-01	2.29E-03 ± 1.25E-01	0.00E+00 ± 6.93E-03	0.00E+00 ± 8.69E-03	2.57E-02 ± 1.83E-01
Glycerol (C ₃ H ₈ O ₃)	8.24E-01 ± 6.14E-02	7.00E-01 ± 2.56E-01	1.60E+00 ± 1.24E+00	5.11E-01 ± 6.27E-02	0.00E+00 ± 1.21E-04	0.00E+00 ± 1.21E-04	0.00E+00 ± 1.24E-04	1.57E-01 ± 1.83E-01	0.00E+00 ± 1.40E-04
Mannitol (C ₆ H ₁₄ O ₆)	0.00E+00 ± 2.61E-03	0.00E+00 ± 2.61E-03	3.15E-02 ± 6.91E-02	0.00E+00 ± 2.35E-03	0.00E+00 ± 2.41E-03	0.00E+00 ± 2.41E-03	0.00E+00 ± 2.48E-03	0.00E+00 ± 3.10E-03	5.40E-02 ± 9.35E-02
Aluminium (Al)	3.20E-02 ± 1.73E-01	6.23E-02 ± 1.51E-01	9.34E-02 ± 1.56E-01	9.53E-02 ± 1.51E-01	2.83E-02 ± 1.60E-01	2.83E-02 ± 1.60E-01	0.00E+00 ± 1.60E-01	2.01E-02 ± 1.85E-01	7.62E-02 ± 1.53E-01
Silicon (Si)	2.91E-03 ± 2.03E-02	4.67E-02 ± 1.79E-02	5.39E-03 ± 1.84E-02	2.60E-01 ± 7.78E-02	7.60E-03 ± 1.88E-02	7.60E-03 ± 1.88E-02	4.84E-02 ± 1.90E-02	1.85E-03 ± 2.18E-02	1.75E-01 ± 1.88E-02
Phosphorous (P)	0.00E+00 ± 4.03E-03	8.31E-05 ± 3.52E-03	2.75E-04 ± 3.63E-03	0.00E+00 ± 3.53E-03	0.00E+00 ± 3.73E-03	0.00E+00 ± 3.73E-03	0.00E+00 ± 3.73E-03	0.00E+00 ± 4.32E-03	0.00E+00 ± 3.55E-03

Table S6 (cont'd)

Sulfur (S)	1.02E-02 ± 3.55E-03	3.00E-02 ± 1.07E-02	1.94E-02 ± 2.87E-02	1.05E-02 ± 6.32E-02	2.86E-02 ± 9.46E-03	1.94E-02 ± 2.01E-03	8.52E-03 ± 9.14E-03	1.19E-01 ± 2.75E-02
Chlorine (Cl)	5.00E-02 ± 1.04E-02	1.32E-02 ± 4.32E-03	7.60E-02 ± 2.59E-02	1.24E-02 ± 4.20E-03	3.84E-02 ± 4.21E-03	1.23E-02 ± 1.39E-03	2.69E-02 ± 1.36E-02	1.08E-02 ± 5.05E-03
Potassium (K)	1.30E-02 ± 5.74E-03	2.11E-01 ± 2.19E-01	1.64E-02 ± 6.22E-03	4.93E-02 ± 5.12E-03	4.91E-02 ± 6.26E-02	2.07E-02 ± 5.32E-03	4.25E-02 ± 6.08E-02	1.14E-01 ± 2.21E-02
Calcium (Ca)	7.80E-03 ± 2.14E-02	1.32E-02 ± 1.87E-02	1.37E-02 ± 1.93E-02	1.05E-03 ± 1.87E-02	0.00E+00 ± 1.98E-02	0.00E+00 ± 1.97E-02	0.00E+00 ± 2.28E-02	8.69E-03 ± 1.87E-02
Scandium (Sc)	2.71E-02 ± 9.51E-02	0.00E+00 ± 8.31E-02	0.00E+00 ± 8.58E-02	0.00E+00 ± 8.39E-02	2.73E-02 ± 8.79E-02	0.00E+00 ± 8.80E-02	8.41E-03 ± 1.02E-01	0.00E+00 ± 8.40E-02
Titanium (Ti)	1.98E-03 ± 3.40E-03	0.00E+00 ± 2.97E-03	2.40E-03 ± 3.06E-03	3.91E-04 ± 2.97E-03	2.73E-03 ± 4.73E-03	0.00E+00 ± 3.14E-03	0.00E+00 ± 3.64E-03	0.00E+00 ± 2.99E-03
Vanadium (V)	0.00E+00 ± 6.35E-04	0.00E+00 ± 5.54E-04	0.00E+00 ± 5.72E-04	0.00E+00 ± 5.55E-04	2.30E-04 ± 5.87E-04	0.00E+00 ± 5.87E-04	0.00E+00 ± 6.80E-04	0.00E+00 ± 5.59E-04
Chromium (Cr)	5.02E-04 ± 2.13E-03	1.30E-04 ± 1.86E-03	0.00E+00 ± 1.92E-03	2.61E-04 ± 1.86E-03	2.76E-04 ± 1.97E-03	0.00E+00 ± 1.97E-03	2.73E-04 ± 2.28E-03	0.00E+00 ± 1.87E-03
Manganese (Mn)	6.13E-04 ± 7.43E-03	1.74E-04 ± 6.49E-03	1.40E-03 ± 6.70E-03	0.00E+00 ± 6.50E-03	6.76E-04 ± 6.87E-03	4.39E-03 ± 6.87E-03	1.15E-03 ± 7.96E-03	1.61E-03 ± 6.54E-03
Iron (Fe)	1.67E-02 ± 1.30E-02	3.16E-02 ± 3.04E-02	2.80E-02 ± 2.43E-02	8.20E-02 ± 9.61E-02	1.32E-02 ± 1.20E-02	6.34E-03 ± 1.20E-02	4.10E-03 ± 1.39E-02	4.90E-03 ± 1.14E-02
Cobalt (Co)	1.39E-05 ± 4.23E-04	0.00E+00 ± 3.70E-04	1.50E-05 ± 3.81E-04	1.52E-04 ± 3.70E-04	6.14E-05 ± 3.91E-04	0.00E+00 ± 3.91E-04	0.00E+00 ± 4.53E-04	0.00E+00 ± 3.73E-04
Nickel (Ni)	0.00E+00 ± 1.06E-03	1.21E-03 ± 1.71E-03	1.45E-05 ± 9.53E-04	0.00E+00 ± 9.26E-04	0.00E+00 ± 9.78E-04	1.84E-04 ± 9.78E-04	5.53E-04 ± 1.13E-03	1.74E-04 ± 9.31E-04
Copper (Cu)	2.37E-03 ± 6.59E-03	6.46E-02 ± 5.76E-02	2.19E-03 ± 5.93E-03	1.50E-02 ± 1.59E-02	2.49E-03 ± 6.09E-03	2.96E-03 ± 6.09E-03	1.44E-02 ± 1.40E-02	4.03E-02 ± 1.49E-02
Zinc (Zn)	7.08E-04 ± 3.61E-03	2.43E-02 ± 3.11E-02	2.04E-03 ± 3.25E-03	1.65E-02 ± 2.13E-02	1.82E-03 ± 3.34E-03	7.36E-04 ± 3.34E-03	1.59E-03 ± 3.87E-03	7.61E-04 ± 3.18E-03
Arsenic (As)	3.86E-04 ± 1.69E-03	0.00E+00 ± 1.48E-03	0.00E+00 ± 1.53E-03	0.00E+00 ± 1.48E-03	2.65E-04 ± 1.56E-03	1.07E-03 ± 1.56E-03	2.92E-05 ± 1.81E-03	4.15E-05 ± 1.49E-03
Selenium (Se)	8.70E-05 ± 2.98E-03	8.53E-04 ± 2.60E-03	2.61E-04 ± 2.68E-03	1.31E-04 ± 2.60E-03	6.06E-04 ± 2.75E-03	5.52E-04 ± 2.75E-03	9.48E-05 ± 3.19E-03	1.31E-04 ± 2.62E-03
Bromine (Br)	1.79E-04 ± 8.46E-04	1.03E-03 ± 9.34E-04	4.77E-04 ± 7.63E-04	9.09E-04 ± 9.32E-04	2.62E-03 ± 1.55E-03	6.90E-04 ± 7.82E-04	2.56E-03 ± 1.65E-03	2.44E-03 ± 7.47E-04
Rubidium (Rb)	2.25E-04 ± 1.06E-03	1.13E-03 ± 9.24E-04	8.79E-04 ± 9.54E-04	1.52E-04 ± 9.26E-04	1.23E-04 ± 9.78E-04	0.00E+00 ± 9.78E-04	2.45E-04 ± 1.13E-03	1.08E-03 ± 1.53E-03
Strontium (Sr)	1.40E-03 ± 1.33E-03	7.56E-04 ± 9.24E-04	1.34E-03 ± 1.08E-03	1.19E-03 ± 9.26E-04	9.46E-04 ± 9.78E-04	8.28E-04 ± 9.78E-04	2.08E-03 ± 1.14E-03	2.11E-03 ± 2.99E-03
Yttrium (Y)	3.35E-04 ± 1.06E-03	2.17E-05 ± 9.24E-04	1.48E-03 ± 1.78E-03	3.48E-04 ± 9.26E-04	4.94E-04 ± 9.78E-04	3.22E-04 ± 9.78E-04	1.45E-03 ± 1.29E-03	1.81E-03 ± 1.38E-03
Zirconium (Zr)	1.71E-03 ± 4.03E-03	1.28E-03 ± 3.52E-03	4.78E-04 ± 3.63E-03	5.21E-04 ± 3.53E-03	1.84E-03 ± 3.73E-03	0.00E+00 ± 3.73E-03	1.68E-03 ± 4.32E-03	1.15E-03 ± 3.55E-03
Niobium (Nb)	3.04E-04 ± 1.92E-03	8.39E-04 ± 1.67E-03	1.32E-04 ± 1.73E-03	1.96E-04 ± 1.68E-03	1.38E-04 ± 1.77E-03	1.38E-04 ± 1.77E-03	1.07E-04 ± 2.05E-03	1.97E-04 ± 1.69E-03
Molybdenum (Mo)	9.00E-04 ± 4.03E-03	0.00E+00 ± 3.52E-03	6.64E-04 ± 3.63E-03	1.11E-03 ± 3.53E-03	1.02E-03 ± 3.73E-03	0.00E+00 ± 3.73E-03	5.30E-04 ± 4.32E-03	1.19E-03 ± 3.55E-03
Silver (Ag)	4.33E-04 ± 5.09E-03	0.00E+00 ± 4.45E-03	0.00E+00 ± 4.59E-03	0.00E+00 ± 4.45E-03	0.00E+00 ± 4.70E-03	0.00E+00 ± 4.70E-03	2.24E-03 ± 5.45E-03	0.00E+00 ± 4.48E-03
Cadmium (Cd)	1.46E-03 ± 7.01E-03	1.24E-03 ± 6.12E-03	7.86E-04 ± 6.31E-03	7.22E-04 ± 6.13E-03	0.00E+00 ± 6.48E-03	0.00E+00 ± 6.48E-03	9.17E-04 ± 7.51E-03	0.00E+00 ± 6.17E-03
Indium (In)	0.00E+00 ± 4.88E-03	0.00E+00 ± 4.26E-03	2.43E-03 ± 4.40E-03	2.23E-03 ± 4.27E-03	2.56E-04 ± 4.51E-03	3.89E-03 ± 4.51E-03	7.51E-04 ± 5.23E-03	0.00E+00 ± 4.30E-03
Tin (Sn)	1.20E-03 ± 8.93E-03	3.12E-03 ± 7.79E-03	6.42E-04 ± 8.04E-03	1.16E-03 ± 7.81E-03	3.53E-03 ± 8.25E-03	1.62E-03 ± 8.25E-03	2.53E-03 ± 9.56E-03	2.79E-03 ± 7.86E-03
Antimony (Sb)	0.00E+00 ± 1.34E-02	3.95E-03 ± 1.17E-02	0.00E+00 ± 1.21E-02	0.00E+00 ± 1.17E-02	0.00E+00 ± 1.24E-02	1.15E-05 ± 1.24E-02	0.00E+00 ± 1.43E-02	0.00E+00 ± 1.18E-02
Cesium (Cs)	1.09E-02 ± 3.76E-02	3.93E-03 ± 3.29E-02	8.53E-03 ± 3.38E-02	4.30E-03 ± 3.29E-02	2.28E-03 ± 3.47E-02	0.00E+00 ± 3.46E-02	1.92E-03 ± 4.03E-02	0.00E+00 ± 3.31E-02
Barium (Ba)	6.24E-03 ± 2.80E-02	0.00E+00 ± 3.10E-02	3.91E-03 ± 2.55E-02	0.00E+00 ± 2.54E-02	7.83E-03 ± 2.59E-02	0.00E+00 ± 2.61E-02	0.00E+00 ± 3.01E-02	0.00E+00 ± 2.67E-02
Lanthanum (La)	2.09E-02 ± 5.53E-02	0.00E+00 ± 4.82E-02	1.85E-02 ± 4.99E-02	1.83E-02 ± 4.85E-02	6.90E-03 ± 5.11E-02	0.00E+00 ± 5.11E-02	2.56E-02 ± 5.94E-02	6.21E-03 ± 4.88E-02
Wolfram (W)	1.00E-03 ± 1.08E-02	3.39E-03 ± 9.46E-03	2.66E-03 ± 9.76E-03	4.00E-03 ± 9.47E-03	3.16E-04 ± 1.00E-02	0.00E+00 ± 1.00E-02	1.25E-03 ± 1.16E-02	1.81E-03 ± 9.53E-03
Gold (Au)	1.27E-03 ± 3.19E-03	0.00E+00 ± 2.78E-03	4.06E-04 ± 2.87E-03	1.07E-03 ± 2.79E-03	0.00E+00 ± 2.94E-03	2.54E-03 ± 2.95E-03	1.04E-03 ± 3.41E-03	8.11E-04 ± 2.81E-03
Mercury (Hg)	6.53E-04 ± 1.69E-03	0.00E+00 ± 1.48E-03	3.29E-04 ± 1.53E-03	0.00E+00 ± 1.48E-03	4.40E-04 ± 1.56E-03	0.00E+00 ± 1.56E-03	1.78E-05 ± 1.81E-03	0.00E+00 ± 1.49E-03
Lead (Pb)	1.12E-03 ± 3.19E-03	8.16E-04 ± 2.78E-03	1.14E-03 ± 2.87E-03	1.63E-03 ± 2.79E-03	0.00E+00 ± 2.94E-03	0.00E+00 ± 2.94E-03	1.57E-03 ± 3.41E-03	1.19E-03 ± 2.81E-03
Uranium (U)	7.79E-04 ± 5.74E-03	7.95E-04 ± 5.01E-03	3.33E-04 ± 5.17E-03	7.60E-04 ± 5.02E-03	9.38E-04 ± 5.30E-03	0.00E+00 ± 5.30E-03	9.76E-04 ± 6.15E-03	2.09E-03 ± 5.05E-03

Table S6 (cont'd)

Emission Factor (g/kg) Average $\pm$ Standard Deviation										
Aging Time		Temperature					Subtropical			
		Northern Alaska, USA					Putnam County Lakebed, Florida			
		2 days		7 days		Aged 7 ^a	2 (25%) days		7 (25%) days	
Fresh 2	Aged 2	Fresh 7	PEAT020, PEAT022	Fresh 2	Aged 2		Fresh 7	Aged 7		
Peat IDs in the average ^b		PEAT013, PEAT014, PEAT019						PEAT005, PEAT006		
PM _{2.5}		2.50E+01 $\pm$ 6.80E+00	2.42E+01 $\pm$ 6.88E+00	2.24E+01 $\pm$ 1.13E+01	2.58E+01 $\pm$ 3.85E+00	5.16E+01 $\pm$ 7.91E+00	4.82E+01 $\pm$ 8.39E+00	5.47E+01 $\pm$ 8.28E+00	5.97E+01 $\pm$ 2.39E+00	
Nitric Acid (HNO ₃)		9.72E-02 $\pm$ 5.37E-02	6.82E-02 $\pm$ 2.80E-02	5.19E-02 $\pm$ 1.61E-02	7.41E-02 $\pm$ 3.74E-02	9.30E-02 $\pm$ 7.19E-03	1.80E-01 $\pm$ 5.01E-02	1.87E-01 $\pm$ 1.64E-01	1.37E-01 $\pm$ 8.77E-03	
Ammonia (NH ₃)		3.79E+00 $\pm$ 6.77E-01	1.39E+00 $\pm$ 4.94E-01	5.58E+00 $\pm$ 6.41E-01	1.31E+00 $\pm$ 2.65E-02	1.29E+01 $\pm$ 2.59E-01	2.27E+00 $\pm$ 1.48E-01	na ^c	8.37E-01 $\pm$ 4.04E-01	
Water-Soluble Sodium (Na ⁺)		6.17E-03 $\pm$ 1.55E-02	1.50E-02 $\pm$ 2.08E-02	8.49E-03 $\pm$ 1.70E-02	1.31E-02 $\pm$ 1.70E-02	4.43E-03 $\pm$ 1.88E-02	8.93E-03 $\pm$ 1.79E-02	1.63E-02 $\pm$ 2.06E-02	1.92E-02 $\pm$ 2.06E-02	
Water-Soluble Potassium (K ⁺)		7.57E-03 $\pm$ 1.15E-02	na ^c	7.19E-03 $\pm$ 1.60E-03	na ^c	5.90E-03 $\pm$ 8.34E-03	na ^c	1.58E-02 $\pm$ 2.16E-03	na ^c	
Chloride (Cl ⁻)		5.15E-02 $\pm$ 1.91E-02	5.28E-02 $\pm$ 2.15E-02	6.39E-02 $\pm$ 2.67E-02	2.92E-02 $\pm$ 4.88E-03	7.17E-02 $\pm$ 7.01E-03	8.00E-02 $\pm$ 3.49E-02	7.24E-02 $\pm$ 1.09E-02	5.17E-02 $\pm$ 5.99E-03	
Nitrite (NO ₂ ⁻)		4.42E-02 $\pm$ 7.65E-02	4.24E-04 $\pm$ 7.38E-03	0.00E+00 $\pm$ 8.07E-03	3.52E-04 $\pm$ 8.10E-03	2.44E-02 $\pm$ 3.26E-02	4.86E-03 $\pm$ 1.14E-02	2.15E-04 $\pm$ 9.80E-03	7.25E-04 $\pm$ 9.83E-03	
Nitrate (NO ₃ ⁻)		5.42E-02 $\pm$ 5.39E-02	3.15E-01 $\pm$ 6.22E-02	3.77E-02 $\pm$ 2.01E-02	2.00E+00 $\pm$ 1.22E+00	7.77E-02 $\pm$ 5.03E-02	4.11E-01 $\pm$ 2.16E-02	2.17E-02 $\pm$ 1.18E-02	6.55E-01 $\pm$ 8.17E-02	
Sulfate (SO ₄ ⁻)		1.21E-01 $\pm$ 1.25E-01	7.78E-02 $\pm$ 2.68E-02	4.37E-02 $\pm$ 2.46E-02	1.60E-01 $\pm$ 3.55E-02	4.21E-01 $\pm$ 4.30E-01	7.17E-01 $\pm$ 5.05E-01	1.17E-01 $\pm$ 1.07E-02	7.68E-01 $\pm$ 1.10E-01	
Ammonium (NH ₄ ⁺)		3.11E-02 $\pm$ 5.37E-02	1.73E-01 $\pm$ 2.37E-01	5.71E-04 $\pm$ 2.42E-03	1.09E+00 $\pm$ 8.63E-02	4.02E-04 $\pm$ 2.68E-03	2.82E-02 $\pm$ 3.99E-02	2.55E-04 $\pm$ 2.94E-03	6.01E-01 $\pm$ 4.49E-02	
OC1 (140°C)		3.69E+00 $\pm$ 1.73E+00	2.62E+00 $\pm$ 1.69E+00	2.31E+00 $\pm$ 1.96E+00	1.00E+00 $\pm$ 6.02E-01	5.02E+00 $\pm$ 2.05E+00	3.74E+00 $\pm$ 2.13E+00	7.04E+00 $\pm$ 1.89E+00	6.00E+00 $\pm$ 1.61E+00	
OC2 (280°C)		5.36E+00 $\pm$ 1.53E+00	4.33E+00 $\pm$ 1.17E+00	3.68E+00 $\pm$ 1.19E+00	2.57E+00 $\pm$ 1.29E+00	1.11E+01 $\pm$ 6.58E-01	9.43E+00 $\pm$ 2.05E+00	1.12E+01 $\pm$ 6.07E-01	1.18E+01 $\pm$ 2.01E+00	
OC3 (480°C)		6.39E+00 $\pm$ 1.24E+00	5.67E+00 $\pm$ 7.01E-01	5.68E+00 $\pm$ 4.09E-01	4.86E+00 $\pm$ 2.00E+00	1.28E+01 $\pm$ 1.92E+00	1.21E+01 $\pm$ 2.55E+00	1.12E+01 $\pm$ 2.03E+00	1.31E+01 $\pm$ 1.51E+00	
OC4 (580°C)		1.90E+00 $\pm$ 6.20E-01	1.52E+00 $\pm$ 4.89E-01	1.54E+00 $\pm$ 1.36E-01	2.16E+00 $\pm$ 3.18E-01	3.76E+00 $\pm$ 1.49E+00	3.70E+00 $\pm$ 3.53E-01	2.35E+00 $\pm$ 3.53E-01	3.21E+00 $\pm$ 1.38E+00	
Pyrolyzed Carbon (OP)		1.78E+00 $\pm$ 3.00E-01	2.40E+00 $\pm$ 5.22E-01	1.53E+00 $\pm$ 3.53E-01	1.79E+00 $\pm$ 1.13E+00	4.00E+00 $\pm$ 1.53E+00	5.08E+00 $\pm$ 1.42E+00	4.85E+00 $\pm$ 1.16E+00	6.41E+00 $\pm$ 1.07E+00	
Organic Carbon (OC)		1.91E+01 $\pm$ 3.99E+00	1.65E+01 $\pm$ 3.04E+00	1.47E+01 $\pm$ 3.48E+00	1.24E+01 $\pm$ 4.71E+00	3.66E+01 $\pm$ 1.75E+00	3.40E+01 $\pm$ 8.31E+00	3.66E+01 $\pm$ 3.13E+00	4.06E+01 $\pm$ 4.74E+00	
EC1 (580°C)		1.54E+00 $\pm$ 6.85E-01	2.27E+00 $\pm$ 5.63E-01	1.12E+00 $\pm$ 3.61E-01	1.91E+00 $\pm$ 1.28E+00	3.83E+00 $\pm$ 9.38E-01	4.56E+00 $\pm$ 1.02E+00	3.52E+00 $\pm$ 8.43E-01	5.37E+00 $\pm$ 1.33E+00	
EC2 (740°C)		7.24E-01 $\pm$ 4.66E-01	6.59E-01 $\pm$ 4.89E-01	1.17E+00 $\pm$ 2.32E-01	4.58E-01 $\pm$ 5.77E-01	1.91E+00 $\pm$ 1.57E+00	1.52E+00 $\pm$ 1.37E+00	2.24E+00 $\pm$ 6.65E-01	1.95E+00 $\pm$ 4.49E-01	
EC3 (840°C)		0.00E+00 $\pm$ 5.30E-03	0.00E+00 $\pm$ 5.30E-03	0.00E+00 $\pm$ 5.80E-03	0.00E+00 $\pm$ 5.80E-03	0.00E+00 $\pm$ 7.88E-03	0.00E+00 $\pm$ 7.88E-03	0.00E+00 $\pm$ 7.03E-03	0.00E+00 $\pm$ 7.03E-03	
Elemental Carbon (EC)		4.85E-01 $\pm$ 1.91E-01	5.33E-01 $\pm$ 3.04E-01	7.62E-01 $\pm$ 2.39E-01	5.76E-01 $\pm$ 7.26E-01	1.75E+00 $\pm$ 6.10E-01	9.94E-01 $\pm$ 1.51E-01	9.10E-01 $\pm$ 1.31E-01	9.11E-01 $\pm$ 1.32E-01	
Total Carbon (TC)		1.96E+01 $\pm$ 3.99E+00	1.71E+01 $\pm$ 3.15E+00	1.55E+01 $\pm$ 3.72E+00	1.30E+01 $\pm$ 5.44E+00	3.84E+01 $\pm$ 1.69E+00	3.50E+01 $\pm$ 8.41E+00	3.75E+01 $\pm$ 3.11E+00	4.15E+01 $\pm$ 4.74E+00	
Water-Soluble OC (WSOC)		6.94E+00 $\pm$ 9.59E-01	6.68E+00 $\pm$ 1.19E+00	6.44E+00 $\pm$ 1.06E+00	6.73E+00 $\pm$ 2.04E+00	9.89E+00 $\pm$ 1.38E+00	1.08E+01 $\pm$ 1.44E+00	8.87E+00 $\pm$ 1.23E+00	1.38E+01 $\pm$ 1.84E+00	
Formate (CH ₃ O ₂ ⁻)		2.34E-02 $\pm$ 1.27E-02	4.93E-02 $\pm$ 1.13E-02	1.45E-02 $\pm$ 3.90E-03	6.19E-02 $\pm$ 1.99E-02	5.04E-02 $\pm$ 4.15E-02	9.05E-02 $\pm$ 4.79E-02	1.19E-02 $\pm$ 1.79E-03	9.18E-02 $\pm$ 1.34E-02	
Acetate (C ₂ H ₃ O ₂ ⁻)		9.15E-02 $\pm$ 5.18E-02	1.52E-01 $\pm$ 5.76E-02	8.73E-02 $\pm$ 1.05E-02	8.28E-02 $\pm$ 5.39E-02	8.98E-02 $\pm$ 6.36E-02	2.21E-02 $\pm$ 2.74E-03	3.04E-02 $\pm$ 3.65E-03	1.55E-01 $\pm$ 1.89E-02	
Oxalate (C ₂ H ₂ O ₄ ²⁻)		8.42E-03 $\pm$ 7.42E-03	1.98E-01 $\pm$ 3.31E-02	6.22E-03 $\pm$ 8.80E-03	8.31E-01 $\pm$ 1.24E-01	2.29E-02 $\pm$ 3.24E-02	2.68E-01 $\pm$ 7.60E-02	0.00E+00	6.71E-01 $\pm$ 1.41E-01	
Propionate (C ₃ H ₅ O ₂ ⁻)		2.00E-03 $\pm$ 3.69E-03	6.97E-03 $\pm$ 1.21E-02	0.00E+00 $\pm$ 4.04E-03	9.59E-03 $\pm$ 1.36E-02	0.00E+00 $\pm$ 5.49E-03	0.00E+00 $\pm$ 5.49E-03	0.00E+00 $\pm$ 4.90E-03	0.00E+00 $\pm$ 4.90E-03	
Levogluconan (C ₆ H ₁₀ O ₅)		4.71E+00 $\pm$ 3.15E+00	4.25E+00 $\pm$ 2.01E+00	2.13E+00 $\pm$ 8.49E-01	1.31E+00 $\pm$ 9.32E-01	1.63E+00 $\pm$ 4.44E-01	1.34E+00 $\pm$ 3.66E-01	1.72E+00 $\pm$ 4.90E-01	8.96E-01 $\pm$ 3.35E-01	
Mannosan (C ₆ H ₁₀ O ₅)		8.00E-01 $\pm$ 3.16E-01	7.83E-01 $\pm$ 3.14E-01	5.88E-01 $\pm$ 2.95E-01	2.50E-01 $\pm$ 2.67E-01	0.00E+00 $\pm$ 1.20E-02	0.00E+00 $\pm$ 1.20E-02	0.00E+00 $\pm$ 1.07E-02	0.00E+00 $\pm$ 1.07E-02	
Galactose/Maltitol (C ₆ H ₁₂ O ₆ /C ₁₂ H ₂₂ O ₁₁)		0.00E+00 $\pm$ 4.13E-03	0.00E+00 $\pm$ 4.13E-03	0.00E+00 $\pm$ 4.52E-03	0.00E+00 $\pm$ 4.52E-03	0.00E+00 $\pm$ 6.14E-03	0.00E+00 $\pm$ 6.14E-03	0.00E+00 $\pm$ 5.49E-03	0.00E+00 $\pm$ 5.49E-03	
Glycerol (C ₃ H ₈ O ₃)		6.45E-02 $\pm$ 1.12E-01	5.73E-02 $\pm$ 9.92E-02	2.99E-01 $\pm$ 4.23E-01	3.44E-02 $\pm$ 4.87E-02	0.00E+00 $\pm$ 1.10E-04	0.00E+00 $\pm$ 1.10E-04	0.00E+00 $\pm$ 9.80E-05	0.00E+00 $\pm$ 9.80E-05	
Mannitol (C ₆ H ₁₄ O ₆)		0.00E+00 $\pm$ 1.48E-03	2.99E-02 $\pm$ 5.19E-02	0.00E+00 $\pm$ 1.61E-03	0.00E+00 $\pm$ 1.61E-03	0.00E+00 $\pm$ 2.19E-03	0.00E+00 $\pm$ 2.19E-03	0.00E+00 $\pm$ 1.96E-03	0.00E+00 $\pm$ 1.96E-03	
Aluminum (Al)		5.55E-03 $\pm$ 9.78E-02	1.48E-02 $\pm$ 9.78E-02	5.70E-03 $\pm$ 1.07E-01	2.25E-03 $\pm$ 1.07E-01	1.35E-02 $\pm$ 1.45E-01	2.91E-02 $\pm$ 1.46E-01	7.34E-02 $\pm$ 1.30E-01	4.83E-02 $\pm$ 1.30E-01	
Silicon (Si)		2.29E-03 $\pm$ 1.15E-02	1.13E-03 $\pm$ 1.15E-02	3.62E-04 $\pm$ 1.26E-02	1.44E-01 $\pm$ 1.33E-02	0.00E+00 $\pm$ 1.71E-02	9.10E-03 $\pm$ 1.71E-02	0.00E+00 $\pm$ 1.53E-02	1.29E-02 $\pm$ 1.53E-02	
Phosphorous (P)		0.00E+00 $\pm$ 2.28E-03	0.00E+00 $\pm$ 2.28E-03	0.00E+00 $\pm$ 2.49E-03	0.00E+00 $\pm$ 2.49E-03	0.00E+00 $\pm$ 3.39E-03	0.00E+00 $\pm$ 3.39E-03	0.00E+00 $\pm$ 3.03E-03	0.00E+00 $\pm$ 3.03E-03	

Table S6 (cont'd)

Sulfur (S)	5.43E-03 ± 9.41E-03	1.01E-02 ± 1.42E-02	3.02E-03 ± 4.27E-03	7.94E-02 ± 2.15E-03	1.02E-01 ± 4.43E-02	1.86E-01 ± 1.44E-01	9.38E-02 ± 5.95E-03	4.42E-01 ± 4.57E-02
Chlorine (Cl)	3.15E-02 ± 2.15E-02	2.00E-02 ± 1.31E-02	3.48E-02 ± 2.72E-02	4.33E-03 ± 9.20E-04	6.21E-02 ± 1.28E-02	3.35E-02 ± 1.73E-02	7.49E-02 ± 1.91E-03	3.37E-02 ± 1.38E-03
Potassium (K)	1.07E-02 ± 3.25E-03	2.81E-02 ± 2.06E-02	9.13E-03 ± 4.33E-03	1.09E-01 ± 4.22E-03	4.30E-03 ± 5.21E-03	2.62E-02 ± 1.23E-02	2.53E-03 ± 4.31E-03	6.77E-02 ± 5.75E-02
Calcium (Ca)	7.73E-03 ± 1.21E-02	8.58E-03 ± 1.21E-02	5.01E-03 ± 1.32E-02	0.00E+00 ± 1.32E-02	1.83E-03 ± 1.80E-02	0.00E+00 ± 1.79E-02	0.00E+00 ± 1.60E-02	0.00E+00 ± 1.60E-02
Scandium (Sc)	0.00E+00 ± 5.37E-02	0.00E+00 ± 5.39E-02	0.00E+00 ± 5.89E-02	0.00E+00 ± 5.89E-02	0.00E+00 ± 7.99E-02	0.00E+00 ± 8.00E-02	1.32E-02 ± 7.13E-02	0.00E+00 ± 7.18E-02
Titanium (Ti)	0.00E+00 ± 1.92E-03	0.00E+00 ± 1.92E-03	1.68E-03 ± 2.37E-03	1.19E-02 ± 2.11E-03	1.64E-03 ± 2.86E-03	0.00E+00 ± 2.85E-03	4.21E-03 ± 5.95E-03	0.00E+00 ± 2.55E-03
Vanadium (V)	0.00E+00 ± 3.59E-04	0.00E+00 ± 3.59E-04	0.00E+00 ± 3.92E-04	0.00E+00 ± 3.92E-04	0.00E+00 ± 5.33E-04	0.00E+00 ± 5.33E-04	0.00E+00 ± 4.76E-04	0.00E+00 ± 4.76E-04
Chromium (Cr)	1.43E-04 ± 1.20E-03	7.59E-05 ± 1.20E-03	0.00E+00 ± 1.32E-03	0.00E+00 ± 1.32E-03	0.00E+00 ± 1.79E-03	0.00E+00 ± 1.79E-03	1.64E-04 ± 1.60E-03	0.00E+00 ± 1.60E-03
Manganese (Mn)	4.17E-04 ± 4.20E-03	1.13E-04 ± 4.20E-03	4.91E-04 ± 4.59E-03	2.46E-04 ± 4.59E-03	7.24E-04 ± 6.24E-03	1.78E-04 ± 5.57E-03	2.77E-04 ± 5.57E-03	9.04E-04 ± 5.57E-03
Iron (Fe)	8.48E-03 ± 7.32E-03	1.90E-02 ± 1.27E-02	8.17E-03 ± 8.01E-03	6.65E-03 ± 8.01E-03	0.00E+00 ± 1.09E-02	2.12E-02 ± 1.53E-02	1.37E-02 ± 9.73E-03	3.87E-02 ± 9.82E-03
Cobalt (Co)	0.00E+00 ± 2.39E-04	0.00E+00 ± 2.39E-04	0.00E+00 ± 2.62E-04	3.08E-05 ± 2.62E-04	0.00E+00 ± 3.56E-04	1.13E-04 ± 3.56E-04	9.58E-05 ± 3.17E-04	0.00E+00 ± 3.17E-04
Nickel (Ni)	8.43E-05 ± 5.98E-04	0.00E+00 ± 5.98E-04	1.08E-04 ± 6.54E-04	0.00E+00 ± 6.54E-04	2.09E-04 ± 8.89E-04	0.00E+00 ± 8.89E-04	4.16E-04 ± 7.94E-04	2.53E-04 ± 7.94E-04
Copper (Cu)	7.79E-03 ± 1.31E-02	4.49E-03 ± 5.33E-03	2.04E-03 ± 4.07E-03	3.47E-02 ± 4.13E-03	0.00E+00 ± 5.53E-03	1.47E-03 ± 5.53E-03	1.05E-03 ± 4.94E-03	4.00E-02 ± 5.20E-02
Zinc (Zn)	6.78E-03 ± 1.03E-02	4.74E-03 ± 4.62E-03	4.73E-04 ± 2.23E-03	2.54E-03 ± 2.23E-03	5.93E-04 ± 3.03E-03	9.67E-04 ± 3.03E-03	2.27E-04 ± 2.71E-03	2.74E-03 ± 2.71E-03
Arsenic (As)	1.56E-04 ± 9.57E-04	0.00E+00 ± 9.57E-04	0.00E+00 ± 1.05E-03	1.54E-04 ± 1.05E-03	0.00E+00 ± 1.42E-03	0.00E+00 ± 1.42E-03	3.74E-05 ± 1.27E-03	1.95E-04 ± 1.27E-03
Selenium (Se)	2.81E-05 ± 1.68E-03	1.45E-03 ± 1.68E-03	3.23E-04 ± 1.84E-03	0.00E+00 ± 1.84E-03	9.36E-04 ± 2.50E-03	0.00E+00 ± 2.50E-03	1.64E-04 ± 2.23E-03	2.02E-03 ± 2.23E-03
Bromine (Br)	4.38E-04 ± 5.55E-04	5.06E-04 ± 7.16E-04	1.73E-03 ± 7.50E-04	4.62E-04 ± 5.23E-04	1.04E-02 ± 2.10E-03	4.12E-03 ± 5.49E-03	1.31E-02 ± 6.85E-04	1.11E-02 ± 6.71E-04
Rubidium (Rb)	0.00E+00 ± 5.98E-04	5.79E-04 ± 7.83E-04	9.38E-04 ± 6.87E-04	5.93E-04 ± 6.54E-04	6.48E-05 ± 8.89E-04	4.03E-04 ± 8.89E-04	0.00E+00 ± 7.94E-04	3.99E-04 ± 7.94E-04
Strontium (Sr)	4.32E-04 ± 5.98E-04	1.33E-03 ± 1.24E-03	1.44E-03 ± 6.54E-04	6.54E-04 ± 6.54E-04	1.23E-03 ± 8.89E-04	1.79E-03 ± 8.90E-04	9.75E-04 ± 7.94E-04	2.79E-03 ± 1.62E-03
Yttrium (Y)	3.52E-04 ± 5.98E-04	8.48E-04 ± 5.98E-04	1.05E-03 ± 6.55E-04	1.24E-03 ± 6.55E-04	7.26E-04 ± 8.89E-04	5.23E-04 ± 8.89E-04	4.62E-04 ± 7.94E-04	1.37E-03 ± 1.93E-03
Zirconium (Zr)	6.99E-04 ± 2.28E-03	9.61E-04 ± 2.28E-03	7.18E-04 ± 2.49E-03	2.50E-03 ± 2.49E-03	7.58E-04 ± 3.39E-03	3.40E-04 ± 3.39E-03	4.48E-04 ± 3.03E-03	7.66E-04 ± 3.03E-03
Niobium (Nb)	0.00E+00 ± 1.08E-03	1.65E-04 ± 1.08E-03	8.35E-05 ± 1.19E-03	0.00E+00 ± 1.19E-03	7.58E-04 ± 1.61E-03	4.42E-04 ± 1.61E-03	2.05E-04 ± 1.44E-03	0.00E+00 ± 1.44E-03
Molybdenum (Mo)	2.22E-04 ± 2.28E-03	7.21E-04 ± 2.28E-03	3.93E-04 ± 2.49E-03	0.00E+00 ± 2.49E-03	0.00E+00 ± 3.39E-03	3.40E-04 ± 3.39E-03	1.41E-03 ± 3.03E-03	0.00E+00 ± 3.03E-03
Silver (Ag)	0.00E+00 ± 2.88E-03	0.00E+00 ± 2.88E-03	0.00E+00 ± 3.15E-03	0.00E+00 ± 3.15E-03	5.83E-04 ± 4.28E-03	0.00E+00 ± 4.28E-03	0.00E+00 ± 3.82E-03	0.00E+00 ± 3.82E-03
Cadmium (Cd)	0.00E+00 ± 3.96E-03	0.00E+00 ± 3.96E-03	0.00E+00 ± 4.33E-03	0.00E+00 ± 4.33E-03	1.58E-03 ± 5.89E-03	0.00E+00 ± 5.89E-03	1.54E-03 ± 5.26E-03	1.24E-03 ± 5.26E-03
Indium (In)	2.45E-04 ± 2.76E-03	3.03E-04 ± 2.76E-03	2.09E-04 ± 3.02E-03	0.00E+00 ± 3.02E-03	3.14E-04 ± 4.10E-03	1.37E-03 ± 3.66E-03	1.29E-03 ± 3.66E-03	1.13E-03 ± 3.66E-03
Tin (Sn)	1.36E-03 ± 5.04E-03	2.28E-03 ± 5.04E-03	1.64E-03 ± 5.52E-03	0.00E+00 ± 5.52E-03	1.89E-03 ± 7.50E-03	1.43E-03 ± 7.50E-03	1.42E-03 ± 6.70E-03	4.43E-03 ± 6.70E-03
Antimony (Sb)	1.13E-03 ± 7.56E-03	2.38E-03 ± 7.56E-03	0.00E+00 ± 8.27E-03	0.00E+00 ± 8.27E-03	0.00E+00 ± 1.12E-02	3.91E-03 ± 1.12E-02	9.92E-04 ± 1.00E-02	0.00E+00 ± 1.00E-02
Cesium (Cs)	2.03E-03 ± 2.12E-02	5.97E-03 ± 2.13E-02	1.47E-03 ± 2.32E-02	1.33E-02 ± 2.32E-02	0.00E+00 ± 3.15E-02	0.00E+00 ± 2.81E-02	0.00E+00 ± 2.82E-02	0.00E+00 ± 2.82E-02
Barium (Ba)	0.00E+00 ± 1.59E-02	0.00E+00 ± 1.63E-02	0.00E+00 ± 1.73E-02	0.00E+00 ± 2.05E-02	0.00E+00 ± 2.37E-02	0.00E+00 ± 2.14E-02	0.00E+00 ± 2.15E-02	0.00E+00 ± 2.15E-02
Lanthanum (La)	4.51E-03 ± 3.12E-02	1.32E-02 ± 3.13E-02	1.24E-02 ± 3.42E-02	0.00E+00 ± 3.45E-02	2.02E-02 ± 4.65E-02	2.23E-03 ± 4.64E-02	9.50E-03 ± 4.14E-02	2.19E-02 ± 4.16E-02
Wolfram (W)	9.41E-04 ± 6.12E-03	1.55E-03 ± 6.12E-03	0.00E+00 ± 6.69E-03	0.00E+00 ± 6.69E-03	1.82E-03 ± 9.10E-03	1.45E-03 ± 9.10E-03	9.51E-04 ± 8.12E-03	0.00E+00 ± 8.12E-03
Gold (Au)	0.00E+00 ± 1.80E-03	5.21E-04 ± 1.80E-03	0.00E+00 ± 1.97E-03	0.00E+00 ± 1.97E-03	3.56E-04 ± 2.68E-03	0.00E+00 ± 2.68E-03	1.31E-04 ± 2.39E-03	7.47E-04 ± 2.39E-03
Mercury (Hg)	9.42E-05 ± 9.57E-04	3.92E-04 ± 9.57E-04	0.00E+00 ± 1.05E-03	0.00E+00 ± 1.05E-03	1.13E-04 ± 1.42E-03	5.86E-04 ± 1.42E-03	0.00E+00 ± 1.27E-03	1.37E-04 ± 1.27E-03
Lead (Pb)	0.00E+00 ± 1.80E-03	1.69E-04 ± 1.80E-03	0.00E+00 ± 1.97E-03	8.31E-04 ± 1.97E-03	6.95E-04 ± 2.68E-03	6.34E-04 ± 2.68E-03	3.70E-04 ± 2.39E-03	7.33E-04 ± 2.39E-03
Uranium (U)	1.45E-03 ± 3.24E-03	7.06E-04 ± 3.24E-03	3.20E-04 ± 3.55E-03	8.00E-04 ± 3.55E-03	1.57E-03 ± 4.82E-03	0.00E+00 ± 4.82E-03	1.27E-03 ± 4.30E-03	0.00E+00 ± 4.30E-03

Table S6 (cont'd)

Aging Time	Emission Factor (g/kg) Average $\pm$ Standard Deviation									
	Subtropical					Tropical				
	Everglades National Park, Florida					Borneo, Malaysia				
	2 days		7 days			2 days		7 days		
	Fresh 2	Aged 2	Fresh 7	Aged 7		Fresh 2	Aged 2	Fresh 7	Aged 7	
Peat IDs in the average ^b	PEAT010, PEAT011, PEAT012, PEAT015	PEAT016, PEAT017, PEAT018				PEAT036, PEA T038	PEAT039, PEAT041			
PM _{2.5}	2.31E+01 $\pm$ 6.74E+00	2.59E+01 $\pm$ 7.90E+00	2.44E+01 $\pm$ 2.63E+00	4.36E+01 $\pm$ 5.30E+00	2.28E+01 $\pm$ 5.26E+00	1.95E+01 $\pm$ 6.25E+00	2.25E+01 $\pm$ 8.33E-01	2.56E+01 $\pm$ 6.16E-01		
Nitric Acid (HNO ₃)	9.29E-02 $\pm$ 4.60E-02	9.17E-02 $\pm$ 4.02E-02	6.80E-02 $\pm$ 1.34E-02	1.08E-01 $\pm$ 5.61E-02	4.55E-02 $\pm$ 8.74E-03	4.89E-02 $\pm$ 8.26E-03	5.10E-02 $\pm$ 3.92E-02	4.24E-02 $\pm$ 7.44E-03		
Ammonia (NH ₃)	1.21E+01 $\pm$ 7.62E+00	3.42E+00 $\pm$ 1.83E+00	1.52E+01 $\pm$ 4.60E+00	2.08E+00 $\pm$ 3.11E-01	4.64E+00 $\pm$ 1.07E+00	1.82E+00 $\pm$ 1.65E-01	5.73E+00 $\pm$ 2.33E-01	1.25E+00 $\pm$ 4.72E-01		
Water-Soluble Sodium (Na ⁺)	8.36E-03 $\pm$ 2.97E-02	na ^c	7.49E-03 $\pm$ 2.62E-02	na ^c	3.61E-03 $\pm$ 1.15E-02	na ^c	4.08E-03 $\pm$ 1.56E-02	na ^c		
Water-Soluble Potassium (K ⁺)	3.15E-01 $\pm$ 6.17E-01	0.00E+00 $\pm$ 9.05E-01	6.26E-03 $\pm$ 4.83E-03	0.00E+00 $\pm$ 5.52E-01	6.40E-03 $\pm$ 4.63E-03	0.00E+00 $\pm$ 3.80E-03	1.08E-02 $\pm$ 7.48E-03	0.00E+00 $\pm$ 1.74E-02		
Chloride (Cl ⁻)	5.90E-02 $\pm$ 2.05E-02	5.92E-02 $\pm$ 4.99E-02	5.39E-02 $\pm$ 7.59E-03	3.69E-02 $\pm$ 9.88E-03	2.55E-02 $\pm$ 3.34E-03	1.91E-02 $\pm$ 3.32E-03	3.49E-02 $\pm$ 1.50E-02	2.66E-02 $\pm$ 4.06E-03		
Nitrite (NO ₂ ⁻)	1.61E-02 $\pm$ 2.90E-02	6.54E-04 $\pm$ 1.35E-02	2.10E-04 $\pm$ 1.25E-02	1.04E-03 $\pm$ 1.25E-02	0.00E+00 $\pm$ 5.48E-03	1.48E-04 $\pm$ 5.48E-03	0.00E+00 $\pm$ 7.43E-03	3.89E-03 $\pm$ 7.07E-03		
Nitrate (NO ₃ ⁻)	5.53E-02 $\pm$ 4.38E-02	6.72E-01 $\pm$ 2.44E-01	3.24E-02 $\pm$ 2.00E-02	3.39E+00 $\pm$ 6.88E-01	1.86E-02 $\pm$ 6.63E-03	1.71E-01 $\pm$ 1.40E-02	2.86E-02 $\pm$ 2.50E-02	1.20E+00 $\pm$ 3.65E-01		
Sulfate (SO ₄ ²⁻)	2.79E-01 $\pm$ 3.32E-01	3.65E-01 $\pm$ 2.87E-01	8.34E-02 $\pm$ 6.23E-03	8.78E-01 $\pm$ 2.29E-01	3.72E-02 $\pm$ 3.18E-03	1.05E-01 $\pm$ 6.58E-03	3.00E-02 $\pm$ 1.28E-02	5.02E-01 $\pm$ 3.22E-02		
Ammonium (NH ₄ ⁺)	3.10E-04 $\pm$ 4.25E-03	9.01E-02 $\pm$ 1.54E-01	8.77E-04 $\pm$ 3.74E-03	2.00E+00 $\pm$ 4.67E-01	4.11E-04 $\pm$ 1.64E-03	1.59E-01 $\pm$ 3.47E-02	6.08E-04 $\pm$ 2.23E-03	1.21E+00 $\pm$ 2.19E-01		
OC1 (140°C)	2.62E+00 $\pm$ 8.76E-01	1.79E+00 $\pm$ 1.09E+00	4.40E+00 $\pm$ 1.26E+00	1.73E+00 $\pm$ 4.91E-01	3.71E+00 $\pm$ 1.32E+00	1.14E+00 $\pm$ 3.27E-01	3.42E+00 $\pm$ 9.16E-01	1.48E+00 $\pm$ 8.57E-01		
OC2 (280°C)	5.36E+00 $\pm$ 1.67E+00	4.15E+00 $\pm$ 1.43E+00	5.93E+00 $\pm$ 4.82E-01	5.28E+00 $\pm$ 7.77E-01	5.06E+00 $\pm$ 7.46E-01	3.53E+00 $\pm$ 2.92E-01	5.27E+00 $\pm$ 2.88E-01	3.10E+00 $\pm$ 6.37E-01		
OC3 (480°C)	5.35E+00 $\pm$ 2.12E+00	5.36E+00 $\pm$ 1.52E+00	5.68E+00 $\pm$ 7.12E-01	7.67E+00 $\pm$ 1.41E+00	5.75E+00 $\pm$ 7.62E-01	5.45E+00 $\pm$ 9.06E-01	5.89E+00 $\pm$ 4.23E-01	5.32E+00 $\pm$ 7.49E-01		
OC4 (580°C)	2.05E+00 $\pm$ 1.01E+00	2.20E+00 $\pm$ 1.02E+00	1.49E+00 $\pm$ 1.42E-01	2.42E+00 $\pm$ 3.64E-01	9.91E-01 $\pm$ 1.89E-01	1.59E+00 $\pm$ 3.05E-01	1.24E+00 $\pm$ 2.68E-01	1.43E+00 $\pm$ 2.36E-01		
Pyrolyzed Carbon (OP)	2.40E+00 $\pm$ 6.65E-01	2.46E+00 $\pm$ 1.12E+00	3.17E+00 $\pm$ 5.38E-01	5.40E+00 $\pm$ 1.13E+00	2.43E+00 $\pm$ 4.29E-01	2.31E+00 $\pm$ 3.79E-01	2.33E+00 $\pm$ 3.79E-01	3.36E+00 $\pm$ 6.30E-01		
Organic Carbon (OC)	1.78E+01 $\pm$ 5.70E+00	1.60E+01 $\pm$ 5.20E+00	2.07E+01 $\pm$ 1.05E+00	2.25E+01 $\pm$ 1.82E+00	1.79E+01 $\pm$ 3.43E+00	1.40E+01 $\pm$ 1.10E+00	1.82E+01 $\pm$ 8.69E-01	1.47E+01 $\pm$ 2.64E+00		
EC1 (580°C)	1.88E+00 $\pm$ 6.44E-01	2.06E+00 $\pm$ 5.59E-01	1.82E+00 $\pm$ 4.64E-01	4.76E+00 $\pm$ 1.15E+00	1.45E+00 $\pm$ 3.53E-01	1.56E+00 $\pm$ 3.67E-01	1.54E+00 $\pm$ 3.38E-01	2.33E+00 $\pm$ 5.41E-01		
EC2 (740°C)	1.53E+00 $\pm$ 8.52E-01	9.16E-01 $\pm$ 9.99E-01	1.83E+00 $\pm$ 2.18E-01	1.51E+00 $\pm$ 9.85E-01	1.16E+00 $\pm$ 2.12E-01	1.16E+00 $\pm$ 1.28E-01	1.16E+00 $\pm$ 1.29E-01	1.20E+00 $\pm$ 1.85E-01		
EC3 (840°C)	0.00E+00 $\pm$ 9.67E-03	0.00E+00 $\pm$ 9.67E-03	0.00E+00 $\pm$ 8.96E-03	0.00E+00 $\pm$ 8.96E-03	0.00E+00 $\pm$ 3.93E-03	0.00E+00 $\pm$ 3.93E-03	0.00E+00 $\pm$ 4.81E-03	0.00E+00 $\pm$ 4.81E-03		
Elemental Carbon (EC)	1.01E+00 $\pm$ 3.60E-01	5.16E-01 $\pm$ 1.30E-01	4.83E-01 $\pm$ 4.19E-01	8.74E-01 $\pm$ 3.55E-01	1.84E-01 $\pm$ 3.55E-02	4.13E-01 $\pm$ 6.49E-02	3.67E-01 $\pm$ 5.92E-02	1.73E-01 $\pm$ 2.44E-01		
Total Carbon (TC)	1.88E+01 $\pm$ 5.90E+00	1.65E+01 $\pm$ 5.32E+00	2.11E+01 $\pm$ 9.92E-01	2.34E+01 $\pm$ 1.49E+00	1.81E+01 $\pm$ 3.46E+00	1.44E+01 $\pm$ 1.14E+00	1.85E+01 $\pm$ 8.26E-01	1.49E+01 $\pm$ 2.39E+00		
Water-Soluble OC (WSOC)	7.16E+00 $\pm$ 2.21E+00	7.45E+00 $\pm$ 2.37E+00	8.36E+00 $\pm$ 1.43E+00	1.01E+01 $\pm$ 1.47E+00	3.36E+00 $\pm$ 9.79E-01	4.40E+00 $\pm$ 9.73E-01	3.84E+00 $\pm$ 5.51E-01	5.86E+00 $\pm$ 7.79E-01		
Formate (CH ₃ O ₂ ⁻)	2.92E-02 $\pm$ 3.03E-02	7.94E-02 $\pm$ 3.49E-02	1.29E-02 $\pm$ 3.47E-03	1.83E-01 $\pm$ 1.13E-01	2.28E-02 $\pm$ 3.53E-03	4.86E-02 $\pm$ 7.75E-03	3.02E-02 $\pm$ 4.72E-03	1.07E-01 $\pm$ 2.83E-02		
Acetate (C ₂ H ₃ O ₂ ⁻)	7.04E-02 $\pm$ 4.13E-02	1.01E-01 $\pm$ 4.24E-02	5.21E-02 $\pm$ 2.34E-02	1.50E-01 $\pm$ 5.08E-02	6.66E-02 $\pm$ 1.72E-02	1.08E-01 $\pm$ 1.36E-02	1.30E-01 $\pm$ 1.64E-02	1.44E-01 $\pm$ 1.71E-02		
Oxalate (C ₂ H ₂ O ₄ ²⁻)	2.29E-02 $\pm$ 1.02E-02	2.31E-01 $\pm$ 4.49E-02	2.01E-02 $\pm$ 7.96E-03	1.37E+00 $\pm$ 3.11E-01	6.19E-02 $\pm$ 4.18E-02	2.16E-01 $\pm$ 3.53E-02	9.66E-02 $\pm$ 4.54E-02	8.61E-01 $\pm$ 1.37E-01		
Propionate (C ₃ H ₅ O ₂ ⁻)	1.81E-03 $\pm$ 2.76E-03	0.00E+00 $\pm$ 6.73E-03	3.80E-03 $\pm$ 6.58E-03	5.61E-03 $\pm$ 9.71E-03	9.86E-03 $\pm$ 2.74E-02	2.27E-03 $\pm$ 3.22E-03	2.71E-02 $\pm$ 3.83E-03	1.72E-02 $\pm$ 2.43E-02		
Levoglucosan (C ₆ H ₁₀ O ₅)	2.39E-01 $\pm$ 2.76E-01	2.36E-01 $\pm$ 3.03E-01	5.47E-01 $\pm$ 2.00E-01	2.76E-01 $\pm$ 3.53E-01	5.75E-01 $\pm$ 1.66E-01	4.76E-01 $\pm$ 3.35E-01	9.86E-01 $\pm$ 2.68E-01	6.47E-01 $\pm$ 1.66E-01		
Mannosan (C ₆ H ₁₀ O ₅)	0.00E+00 $\pm$ 1.54E-02	0.00E+00 $\pm$ 1.47E-02	1.49E-02 $\pm$ 4.08E-01	1.07E-01 $\pm$ 4.15E-01	0.00E+00 $\pm$ 5.97E-03	0.00E+00 $\pm$ 5.97E-03	4.07E-02 $\pm$ 2.44E-01	2.13E-02 $\pm$ 2.19E-01		
Galactose/Maltitol (C ₆ H ₁₂ O ₆ /C ₁₂ H ₂₂ O ₁₁)	0.00E+00 $\pm$ 7.93E-03	0.00E+00 $\pm$ 7.54E-03	0.00E+00 $\pm$ 6.99E-03	0.00E+00 $\pm$ 6.99E-03	0.00E+00 $\pm$ 3.07E-03	3.09E-02 $\pm$ 5.20E-02	0.00E+00 $\pm$ 4.16E-03	0.00E+00 $\pm$ 3.75E-03		
Glycerol (C ₃ H ₈ O ₃)	0.00E+00 $\pm$ 1.42E-04	0.00E+00 $\pm$ 1.35E-04	0.00E+00 $\pm$ 1.25E-04	0.00E+00 $\pm$ 1.25E-04	0.00E+00 $\pm$ 5.48E-05	0.00E+00 $\pm$ 5.48E-05	0.00E+00 $\pm$ 7.43E-05	0.00E+00 $\pm$ 6.70E-05		
Mannitol (C ₆ H ₁₂ O ₆)	0.00E+00 $\pm$ 2.83E-03	0.00E+00 $\pm$ 2.69E-03	0.00E+00 $\pm$ 2.50E-03	0.00E+00 $\pm$ 2.50E-03	3.00E-03 $\pm$ 3.29E-02	0.00E+00 $\pm$ 1.10E-03	0.00E+00 $\pm$ 1.49E-03	0.00E+00 $\pm$ 1.34E-03		
Aluminum (Al)	6.97E-03 $\pm$ 1.78E-01	2.32E-02 $\pm$ 1.78E-01	6.34E-05 $\pm$ 1.65E-01	0.00E+00 $\pm$ 1.65E-01	8.79E-03 $\pm$ 7.26E-02	2.05E-02 $\pm$ 7.26E-02	9.94E-03 $\pm$ 8.88E-02	3.75E-02 $\pm$ 7.67E-02		
Silicon (Si)	4.42E-03 $\pm$ 2.09E-02	7.01E-02 $\pm$ 1.14E-01	0.00E+00 $\pm$ 1.94E-02	2.12E-01 $\pm$ 2.04E-02	2.28E-03 $\pm$ 8.55E-03	1.96E-02 $\pm$ 8.60E-03	0.00E+00 $\pm$ 1.05E-02	1.74E-01 $\pm$ 1.01E-02		

Table S6 (cont'd)

Sulfur (S)	9.60E-02 ± 7.25E-02	1.41E-01 ± 6.18E-02	1.02E-01 ± 1.26E-02	5.20E-01 ± 8.14E-02	2.21E-02 ± 2.18E-02	9.34E-02 ± 2.16E-03	6.45E-03 ± 1.10E-03	2.10E-01 ± 4.41E-03
Chlorine (Cl)	5.29E-02 ± 3.39E-02	1.59E-02 ± 6.79E-03	5.82E-02 ± 3.28E-03	1.79E-02 ± 6.31E-03	1.69E-02 ± 3.62E-03	1.61E-02 ± 7.42E-04	1.92E-02 ± 9.04E-04	1.19E-02 ± 6.97E-04
Potassium (K)	8.06E-03 ± 5.92E-03	1.51E-01 ± 1.38E-01	4.36E-03 ± 5.48E-03	9.99E-02 ± 1.68E-02	1.04E-02 ± 8.37E-03	2.02E-02 ± 2.44E-03	6.13E-03 ± 3.67E-03	4.21E-03 ± 2.54E-03
Calcium (Ca)	0.00E+00 ± 2.20E-02	2.76E-03 ± 2.20E-02	0.00E+00 ± 2.03E-02	4.38E-03 ± 2.05E-02	1.10E-03 ± 8.98E-03	0.00E+00 ± 8.93E-03	0.00E+00 ± 1.10E-02	5.84E-03 ± 9.47E-03
Scandium (Sc)	0.00E+00 ± 9.82E-02	0.00E+00 ± 9.82E-02	0.00E+00 ± 9.10E-02	0.00E+00 ± 9.09E-02	0.00E+00 ± 3.99E-02	0.00E+00 ± 4.00E-02	0.00E+00 ± 4.89E-02	0.00E+00 ± 4.21E-02
Titanium (Ti)	1.52E-03 ± 3.50E-03	4.95E-03 ± 9.91E-03	0.00E+00 ± 3.25E-03	0.00E+00 ± 3.25E-03	1.39E-03 ± 1.96E-03	0.00E+00 ± 1.42E-03	1.53E-03 ± 2.16E-03	0.00E+00 ± 1.50E-03
Vanadium (V)	2.90E-04 ± 6.55E-04	0.00E+00 ± 6.55E-04	0.00E+00 ± 6.06E-04	3.16E-03 ± 4.46E-03	0.00E+00 ± 2.66E-04	0.00E+00 ± 2.66E-04	0.00E+00 ± 3.26E-04	0.00E+00 ± 2.81E-04
Chromium (Cr)	0.00E+00 ± 2.19E-03	1.43E-04 ± 2.19E-03	0.00E+00 ± 2.03E-03	7.13E-05 ± 2.03E-03	0.00E+00 ± 8.92E-04	0.00E+00 ± 8.92E-04	5.78E-04 ± 1.09E-03	0.00E+00 ± 9.42E-04
Manganese (Mn)	5.18E-04 ± 7.66E-03	1.25E-03 ± 7.66E-03	4.38E-04 ± 7.10E-03	1.49E-03 ± 3.12E-03	1.19E-03 ± 3.12E-03	1.81E-03 ± 3.12E-03	1.97E-03 ± 3.81E-03	1.17E-03 ± 3.29E-03
Iron (Fe)	4.69E-03 ± 1.34E-02	1.80E-02 ± 1.34E-02	4.59E-03 ± 1.24E-02	4.07E-02 ± 4.13E-02	1.70E-02 ± 5.65E-03	1.77E-02 ± 5.44E-03	1.03E-02 ± 6.65E-03	1.08E-02 ± 5.74E-03
Cobalt (Co)	1.00E-05 ± 4.36E-04	1.28E-05 ± 4.36E-04	6.34E-05 ± 4.04E-04	0.00E+00 ± 4.04E-04	0.00E+00 ± 1.77E-04	1.46E-04 ± 1.77E-04	0.00E+00 ± 2.17E-04	2.20E-05 ± 1.87E-04
Nickel (Ni)	5.30E-05 ± 1.09E-03	0.00E+00 ± 1.09E-03	0.00E+00 ± 1.01E-03	1.66E-04 ± 1.01E-03	1.22E-04 ± 4.44E-04	0.00E+00 ± 4.44E-04	7.54E-04 ± 5.43E-04	0.00E+00 ± 4.68E-04
Copper (Cu)	2.43E-03 ± 6.79E-03	6.40E-02 ± 8.24E-02	7.48E-04 ± 6.29E-03	9.50E-03 ± 6.29E-03	1.13E-03 ± 2.76E-03	1.78E-03 ± 2.76E-03	2.03E-03 ± 3.38E-03	4.24E-04 ± 2.91E-03
Zinc (Zn)	9.21E-04 ± 3.72E-03	2.42E-03 ± 3.72E-03	4.91E-04 ± 3.45E-03	1.12E-02 ± 1.31E-02	8.90E-04 ± 1.51E-03	0.00E+00 ± 1.51E-03	7.56E-04 ± 1.85E-03	0.00E+00 ± 1.60E-03
Arsenic (As)	1.41E-04 ± 1.75E-03	2.27E-04 ± 1.75E-03	0.00E+00 ± 1.62E-03	0.00E+00 ± 1.62E-03	0.00E+00 ± 7.10E-04	0.00E+00 ± 7.10E-04	0.00E+00 ± 8.68E-04	7.10E-04 ± 7.49E-04
Selenium (Se)	2.37E-04 ± 3.07E-03	5.76E-04 ± 3.07E-03	9.14E-04 ± 2.84E-03	7.13E-05 ± 2.84E-03	4.10E-04 ± 1.25E-03	0.00E+00 ± 1.25E-03	1.98E-04 ± 1.53E-03	0.00E+00 ± 1.32E-03
Bromine (Br)	6.49E-03 ± 2.36E-03	2.39E-03 ± 1.65E-03	5.39E-03 ± 1.83E-03	4.11E-03 ± 1.96E-03	2.36E-03 ± 3.58E-04	2.95E-03 ± 3.60E-04	2.63E-03 ± 6.83E-04	1.12E-03 ± 3.75E-04
Rubidium (Rb)	7.03E-05 ± 1.09E-03	4.21E-04 ± 1.09E-03	4.00E-04 ± 1.01E-03	0.00E+00 ± 1.01E-03	1.04E-04 ± 4.44E-04	8.35E-05 ± 4.44E-04	0.00E+00 ± 5.43E-04	4.24E-04 ± 4.68E-04
Strontium (Sr)	1.12E-03 ± 1.09E-03	1.02E-03 ± 1.09E-03	1.44E-03 ± 1.69E-03	1.50E-03 ± 1.01E-03	6.31E-04 ± 4.44E-04	5.06E-04 ± 4.44E-04	1.53E-04 ± 5.43E-04	7.32E-04 ± 4.68E-04
Yttrium (Y)	1.01E-03 ± 1.34E-03	6.23E-04 ± 1.09E-03	3.34E-04 ± 1.01E-03	0.00E+00 ± 1.01E-03	4.61E-04 ± 6.25E-04	7.78E-04 ± 4.44E-04	3.96E-04 ± 5.43E-04	6.83E-04 ± 4.68E-04
Zirconium (Zr)	1.03E-03 ± 4.16E-03	1.29E-03 ± 4.16E-03	8.58E-04 ± 3.85E-03	2.29E-03 ± 3.85E-03	1.08E-03 ± 1.69E-03	3.76E-04 ± 1.69E-03	1.15E-04 ± 2.07E-03	0.00E+00 ± 1.78E-03
Niobium (Nb)	4.43E-04 ± 1.98E-03	1.93E-04 ± 1.98E-03	4.92E-04 ± 1.83E-03	0.00E+00 ± 1.83E-03	2.53E-04 ± 8.04E-04	0.00E+00 ± 8.04E-04	4.63E-04 ± 9.83E-04	6.61E-05 ± 8.48E-04
Molybdenum (Mo)	5.20E-04 ± 4.16E-03	4.14E-04 ± 4.16E-03	3.33E-04 ± 3.85E-03	3.57E-04 ± 3.85E-03	1.88E-04 ± 1.69E-03	0.00E+00 ± 1.69E-03	9.99E-04 ± 2.07E-03	7.98E-04 ± 1.78E-03
Silver (Ag)	4.10E-04 ± 5.25E-03	0.00E+00 ± 5.25E-03	0.00E+00 ± 4.86E-03	0.00E+00 ± 4.86E-03	6.60E-04 ± 2.13E-03	0.00E+00 ± 2.13E-03	5.78E-04 ± 2.61E-03	0.00E+00 ± 2.25E-03
Cadmium (Cd)	0.00E+00 ± 7.23E-03	0.00E+00 ± 7.23E-03	2.01E-03 ± 6.70E-03	4.29E-03 ± 6.70E-03	8.45E-05 ± 2.94E-03	0.00E+00 ± 2.94E-03	0.00E+00 ± 3.59E-03	0.00E+00 ± 3.10E-03
Indium (In)	1.64E-03 ± 5.03E-03	7.86E-04 ± 5.03E-03	1.43E-03 ± 4.66E-03	5.74E-04 ± 4.66E-03	9.06E-04 ± 2.05E-03	3.13E-04 ± 2.05E-03	1.92E-04 ± 2.50E-03	0.00E+00 ± 2.16E-03
Tin (Sn)	1.76E-03 ± 9.20E-03	8.92E-04 ± 9.20E-03	1.55E-03 ± 8.53E-03	2.98E-03 ± 8.53E-03	4.16E-04 ± 3.74E-03	3.19E-03 ± 3.74E-03	8.87E-04 ± 4.58E-03	3.03E-03 ± 3.95E-03
Antimony (Sb)	7.99E-05 ± 1.38E-02	1.13E-04 ± 1.38E-02	8.19E-05 ± 1.28E-02	2.20E-04 ± 1.28E-02	0.00E+00 ± 5.61E-03	9.45E-04 ± 5.61E-03	2.45E-03 ± 6.86E-03	0.00E+00 ± 5.92E-03
Cesium (Cs)	2.57E-05 ± 3.87E-02	8.43E-03 ± 3.89E-02	9.83E-03 ± 3.60E-02	0.00E+00 ± 3.59E-02	5.52E-03 ± 1.58E-02	4.76E-03 ± 1.58E-02	1.68E-03 ± 1.93E-02	0.00E+00 ± 1.66E-02
Barium (Ba)	0.00E+00 ± 2.92E-02	0.00E+00 ± 3.42E-02	0.00E+00 ± 2.68E-02	0.00E+00 ± 2.71E-02	0.00E+00 ± 1.19E-02	0.00E+00 ± 1.19E-02	0.00E+00 ± 1.44E-02	0.00E+00 ± 1.26E-02
Lanthanum (La)	1.28E-02 ± 5.71E-02	6.39E-03 ± 5.75E-02	9.28E-03 ± 5.29E-02	2.17E-03 ± 5.28E-02	7.77E-03 ± 2.32E-02	0.00E+00 ± 2.32E-02	4.13E-03 ± 2.84E-02	2.01E-02 ± 2.45E-02
Wolfram (W)	2.47E-03 ± 1.12E-02	9.89E-04 ± 1.12E-02	2.15E-03 ± 1.03E-02	0.00E+00 ± 1.04E-02	0.00E+00 ± 4.54E-03	1.39E-03 ± 4.54E-03	0.00E+00 ± 5.55E-03	0.00E+00 ± 4.79E-03
Gold (Au)	2.09E-04 ± 3.29E-03	2.10E-04 ± 3.29E-03	1.06E-03 ± 3.04E-03	1.60E-04 ± 3.04E-03	1.36E-04 ± 1.34E-03	0.00E+00 ± 1.34E-03	8.94E-05 ± 1.63E-03	0.00E+00 ± 1.41E-03
Mercury (Hg)	9.96E-05 ± 1.75E-03	1.55E-04 ± 1.75E-03	0.00E+00 ± 1.62E-03	0.00E+00 ± 1.62E-03	0.00E+00 ± 7.10E-04	0.00E+00 ± 7.10E-04	8.94E-05 ± 8.68E-04	2.20E-05 ± 7.49E-04
Lead (Pb)	5.04E-04 ± 3.29E-03	3.47E-04 ± 3.29E-03	4.76E-04 ± 3.04E-03	1.56E-03 ± 3.04E-03	5.94E-04 ± 1.34E-03	1.25E-04 ± 1.34E-03	3.45E-04 ± 1.63E-03	0.00E+00 ± 1.41E-03
Uranium (U)	6.06E-04 ± 5.92E-03	6.13E-04 ± 5.92E-03	9.57E-04 ± 5.48E-03	8.05E-04 ± 5.48E-03	0.00E+00 ± 2.41E-03	7.99E-04 ± 2.41E-03	1.28E-03 ± 2.94E-03	1.57E-03 ± 2.54E-03

^aOnly one sample was analyzed for elements by x-ray fluorescence with concentration and measurement uncertainty.

^bPeat ID code, detailed operation parameters are reported in Watson et al., 2019.

^cWater-soluble K⁺ data were contaminated due to the use of potassium iodide denuder downstream of the oxidation flow reactor.

^dWSOC measures from Peat sample ID PEAT028 was invalidated due to a crack in the test tube. Therefore, only two measurements are used to calculate the average and standard deviation.

^eData not available due to the invalidated citric acid impregnated filter sample

Table S7. Individual and averaged emission factors for fresh vs. aged PM_{2.5} mass and carbon.

Pear Type	Sample ID	Emission Factors in g/kg																															
		EF _{PM2.5}				EF _{OC}				EF _{EC}				EF _{TC}				EF _{Levoglucosan}				WSOC/OC				WSOC/PM _{2.5}				OC/PM _{2.5}			
		FRESH ^a	AGED ^a	FRESH ^b	AGED ^b	FRESH ^a	AGED ^a	FRESH ^b	AGED ^b	FRESH ^a	AGED ^a	FRESH ^b	AGED ^b	FRESH ^a	AGED ^a	FRESH ^b	AGED ^b	FRESH ^a	AGED ^a	FRESH ^b	AGED ^b	FRESH ^a	AGED ^a	FRESH ^b	AGED ^b	FRESH ^a	AGED ^a	FRESH ^b	AGED ^b	FRESH ^a	AGED ^a	FRESH ^b	AGED ^b
Odinovo, Russia (n=6)	PEAT030	44.937	39.709	27.157	20.511	1.057	0.629	28.214	21.140	17.753	13.680	19.703	12.880	65.37%	66.70%	39.51%	34.45%	65.37%	66.70%	39.51%	34.45%	65.37%	66.70%	39.51%	34.45%	65.37%	66.70%	39.51%	34.45%	65.37%	66.70%	39.51%	34.45%
	PEAT031	42.173	33.042	25.645	16.629	0.160	0.611	25.805	17.240	14.391	10.785	14.330	9.059	56.11%	64.86%	34.12%	32.64%	56.11%	64.86%	34.12%	32.64%	56.11%	64.86%	34.12%	32.64%	56.11%	64.86%	34.12%	32.64%	56.11%	64.86%	34.12%	32.64%
	PEAT032	43.117	46.130	22.448	15.632	1.177	0.521	23.425	16.153	16.075	13.064	12.174	6.922	83.58%	83.58%	37.28%	28.32%	83.58%	83.58%	37.28%	28.32%	83.58%	83.58%	37.28%	28.32%	83.58%	83.58%	37.28%	28.32%	83.58%	83.58%	37.28%	28.32%
	PEAT033	40.491	47.894	26.964	16.901	0.515	1.011	27.479	17.912	15.453	11.415	16.263	7.612	57.31%	67.54%	38.16%	23.83%	57.31%	67.54%	38.16%	23.83%	57.31%	67.54%	38.16%	23.83%	57.31%	67.54%	38.16%	23.83%	57.31%	67.54%	38.16%	23.83%
	PEAT034	50.522	45.404	28.736	20.008	0.822	0.532	29.558	20.540	16.962	12.552	18.328	8.660	59.03%	62.73%	33.57%	27.64%	59.03%	62.73%	33.57%	27.64%	59.03%	62.73%	33.57%	27.64%	59.03%	62.73%	33.57%	27.64%	59.03%	62.73%	33.57%	27.64%
	PEAT035	34.649	31.065	20.019	13.467	0.900	0.823	29.919	14.290	12.320	11.234	13.704	7.432	83.42%	83.42%	33.56%	36.16%	83.42%	83.42%	33.56%	36.16%	83.42%	83.42%	33.56%	36.16%	83.42%	83.42%	33.56%	36.16%	83.42%	83.42%	33.56%	36.16%
Average ± SD		42.65 ± 5.22	40.54 ± 7.15	25.13 ± 3.32	17.19 ± 2.67	0.77 ± 0.38	0.69 ± 0.19	25.90 ± 3.23	17.88 ± 2.61	15.49 ± 1.94	12.12 ± 1.15	15.75 ± 2.88	8.76 ± 2.17	61.94 ± 5.04%	71.47 ± 9.46%	36.37 ± 2.34%	30.51 ± 2.49%	61.94 ± 5.04%	71.47 ± 9.46%	36.37 ± 2.34%	30.51 ± 2.49%	61.94 ± 5.04%	71.47 ± 9.46%	36.37 ± 2.34%	30.51 ± 2.49%	61.94 ± 5.04%	71.47 ± 9.46%	36.37 ± 2.34%	30.51 ± 2.49%	61.94 ± 5.04%	71.47 ± 9.46%	36.37 ± 2.34%	30.51 ± 2.49%
C.o.V.		12.24%	17.64%	13.22%	15.53%	48.66%	27.92%	12.47%	14.58%	12.55%	9.46%	18.30%	24.77%	9.75%	13.24%	6.44%	15.35%	9.75%	13.24%	6.44%	15.35%	9.75%	13.24%	6.44%	15.35%	9.75%	13.24%	6.44%	15.35%	9.75%	13.24%	6.44%	15.35%
Pskov, Sbera (n=6)	PEAT023	39.719	39.648	27.252	23.769	1.200	1.289	28.452	25.058	8.901	9.395	1.615	1.594	32.66%	39.53%	22.41%	23.70%	32.66%	39.53%	22.41%	23.70%	32.66%	39.53%	22.41%	23.70%	32.66%	39.53%	22.41%	23.70%	32.66%	39.53%	22.41%	23.70%
	PEAT025	32.975	27.337	26.845	16.698	0.844	0.598	27.688	17.296	7.647	7.736	3.041	1.023	28.49%	46.33%	23.19%	28.30%	28.49%	46.33%	23.19%	28.30%	28.49%	46.33%	23.19%	28.30%	28.49%	46.33%	23.19%	28.30%	28.49%	46.33%	23.19%	28.30%
	PEAT026	34.739	21.511	24.636	17.981	1.431	0.824	26.667	18.055	9.003	8.094	2.327	1.048	35.54%	45.02%	25.91%	70.92%	37.63%	45.02%	25.91%	70.92%	37.63%	45.02%	25.91%	70.92%	37.63%	45.02%	25.91%	70.92%	37.63%	45.02%	25.91%	70.92%
	PEAT027	27.468	18.934	21.274	11.310	0.000	0.459	21.274	11.769	9.065	7.385	2.358	0.719	42.61%	65.30%	33.00%	39.00%	42.61%	65.30%	33.00%	39.00%	42.61%	65.30%	33.00%	39.00%	42.61%	65.30%	33.00%	39.00%	42.61%	65.30%	33.00%	39.00%
	PEAT028	42.074	45.032	31.372	22.388	0.069	0.949	31.441	23.337	m ^b	9.580	3.301	1.555	m ^b	42.79%	m ^b	21.27%	74.57%	42.79%	m ^b	21.27%	74.57%	42.79%	m ^b	21.27%	74.57%	42.79%	m ^b	21.27%	74.57%	42.79%	m ^b	21.27%
	PEAT029	26.547	31.524	24.397	16.274	0.620	0.535	25.017	16.809	8.494	9.258	3.120	1.309	34.82%	36.89%	32.00%	32.00%	34.82%	36.89%	32.00%	32.00%	34.82%	36.89%	32.00%	32.00%	34.82%	36.89%	32.00%	32.00%	34.82%	36.89%	32.00%	32.00%
Average ± SD		33.92 ± 6.29	30.66 ± 10.20	25.96 ± 3.40	18.07 ± 4.52	0.69 ± 0.58	0.78 ± 0.31	26.66 ± 3.44	18.85 ± 4.80	8.62 ± 0.59	8.57 ± 0.95	2.63 ± 0.64	1.21 ± 0.34	35.02 ± 3.20%	49.31 ± 9.78%	27.30 ± 4.93%	29.88 ± 7.19%	35.02 ± 3.20%	49.31 ± 9.78%	27.30 ± 4.93%	29.88 ± 7.19%	35.02 ± 3.20%	49.31 ± 9.78%	27.30 ± 4.93%	29.88 ± 7.19%	35.02 ± 3.20%	49.31 ± 9.78%	27.30 ± 4.93%	29.88 ± 7.19%	35.02 ± 3.20%	49.31 ± 9.78%	27.30 ± 4.93%	29.88 ± 7.19%
C.o.V.		18.54%	33.27%	13.11%	24.99%	84.02%	40.19%	12.91%	25.49%	6.83%	11.06%	24.41%	28.15%	14.85%	19.84%	18.06%	24.06%	14.85%	19.84%	18.06%	24.06%	14.85%	19.84%	18.06%	24.06%	14.85%	19.84%	18.06%	24.06%	14.85%	19.84%	18.06%	24.06%
Putnam County Lakebed, Florida (n=5)	PEAT013	17.305	16.320	14.619	13.122	0.543	0.338	15.162	13.460	6.877	5.314	1.790	2.269	47.00%	40.50%	39.74%	32.56%	47.00%	40.50%	39.74%	32.56%	47.00%	40.50%	39.74%	32.56%	47.00%	40.50%	39.74%	32.56%	47.00%	40.50%	39.74%	32.56%
	PEAT014	30.090	27.119	22.257	17.531	0.640	0.884	22.897	18.415	7.294	7.413	4.297	4.195	42.29%	42.29%	24.24%	27.34%	42.29%	42.29%	24.24%	27.34%	42.29%	42.29%	24.24%	27.34%	42.29%	42.29%	24.24%	27.34%	42.29%	42.29%	24.24%	27.34%
	PEAT019	27.733	29.102	20.459	18.942	0.272	0.378	20.331	19.319	6.651	7.321	8.043	6.285	32.51%	38.65%	23.98%	25.16%	32.51%	38.65%	23.98%	25.16%	32.51%	38.65%	23.98%	25.16%	32.51%	38.65%	23.98%	25.16%	32.51%	38.65%	23.98%	25.16%
	PEAT020	30.406	28.527	17.196	15.718	0.932	1.090	18.127	16.908	7.190	8.167	2.726	1.971	41.81%	51.96%	23.65%	28.63%	41.81%	51.96%	23.65%	28.63%	41.81%	51.96%	23.65%	28.63%	41.81%	51.96%	23.65%	28.63%	41.81%	51.96%	23.65%	28.63%
	PEAT022	14.300	23.086	12.270	9.053	0.093	0.093	12.863	9.116	5.686	5.287	1.525	0.652	46.34%	58.40%	39.51%	22.90%	46.34%	58.40%	39.51%	22.90%	46.34%	58.40%	39.51%	22.90%	46.34%	58.40%	39.51%	22.90%	46.34%	58.40%	39.51%	22.90%
	PEAT022	23.98 ± 7.57	24.83 ± 5.31	17.56 ± 4.09	14.87 ± 3.91	0.60 ± 0.24	0.55 ± 0.42	17.96 ± 4.06	15.42 ± 4.17	6.74 ± 0.64	6.70 ± 1.32	3.68 ± 2.67	3.07 ± 2.20	40.09 ± 7.10%	46.36 ± 8.47%	30.72 ± 8.59%	74.81 ± 11.60%	30.72 ± 8.59%	74.81 ± 11.60%	30.72 ± 8.59%	74.81 ± 11.60%	30.72 ± 8.59%	74.81 ± 11.60%	30.72 ± 8.59%	74.81 ± 11.60%	30.72 ± 8.59%	74.81 ± 11.60%	30.72 ± 8.59%	74.81 ± 11.60%	30.72 ± 8.59%	74.81 ± 11.60%	30.72 ± 8.59%	74.81 ± 11.60%
Average ± SD		31.56%	21.37%	23.58%	26.31%	39.58%	76.78%	22.60%	27.06%	9.52%	19.69%	72.67%	71.44%	17.70%	18.26%	28.41%	13.38%	17.70%	18.26%	28.41%	13.38%	17.70%	18.26%	28.41%	13.38%	17.70%	18.26%	28.41%	13.38%	17.70%	18.26%	28.41%	
C.o.V.		57.197	54.119	37.217	39.897	1.314	1.064	38.531	40.961	9.282	10.598	1.807	1.487	24.94%	26.56%	16.23%	19.58%	24.94%	26.56%	16.23%	19.58%	24.94%	26.56%	16.23%	19.58%	24.94%	26.56%	16.23%	19.58%	24.94%	26.56%	16.23%	19.58%
Putnam County Lakebed, Florida (n=4)	PEAT008	46.012	42.248	36.055	28.139	2.177	0.923	38.232	29.062	10.505	10.919	1.448	1.185	29.13%	38.80%	22.83%	25.84%	29.13%	38.80%	22.83%	25.84%	29.13%	38.80%	22.83%	25.84%	29.13%	38.80%	22.83%	25.84%	29.13%	38.80%	22.83%	25.84%
	PEAT005	48.798	57.969	34.423	37.209	0.922	0.909	35.345	38.119	8.369	14.017	1.439	0.659	37.67%	37.67%	17.15%	24.18%	37.67%	37.67%	17.15%	24.18%	37.67%	37.67%	17.15%	24.18%	37.67%	37.67%	17.15%	24.18%	37.67%	37.67%	17.15%	24.18%
	PEAT006	60.509	61.350	38.850	43.910	0.898	0.913	39.748	44.823	9.380	13.576	1.991	1.133	24.14%	30.92%	15.30%	22.13%	24.14%	30.92%	15.30%	22.13%	24.14%	30.92%	15.30%	22.13%	24.14%	30.92%	15.30%	22.13%	24.14%	30.92%	15.30%	22.13%
	PEAT006	53.13 ± 6.84	53.92 ± 8.32	36.64 ± 1.87	37.29 ± 6.69	1.33 ± 0.60	0.95 ± 0.07	37.96 ± 1.86	38.24 ± 6.71	9.38 ± 0.87	12.28 ± 1.77	1.67 ± 0.27	1.12 ± 0.34	25.63 ± 3.26%	33.49 ± 5.78%	17.93 ± 3.34%	22.93 ± 2.70%	25.63 ± 3.26%	33.49 ± 5.78%	17.93 ± 3.34%	22.93 ± 2.70%	25.63 ± 3.26%	33.49 ± 5.78%	17.93 ± 3.									



Figure S1. Appearance of the eight peat samples from different regions tested in this study.

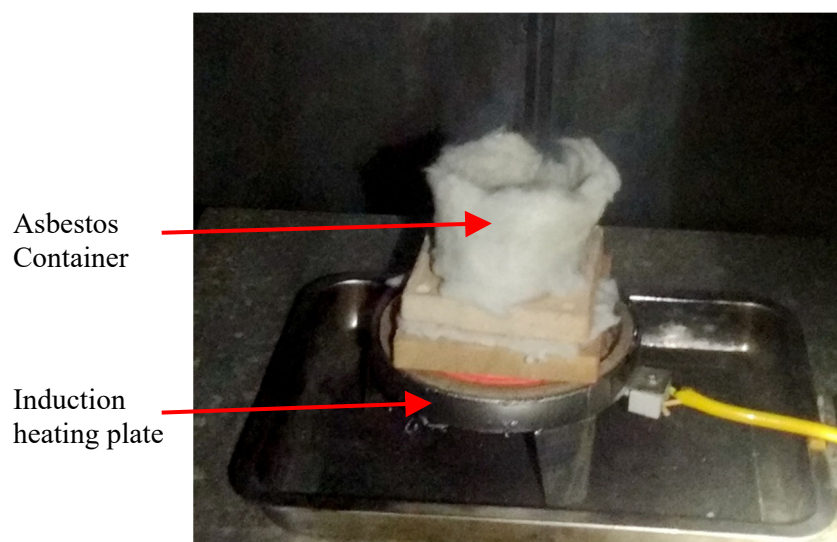
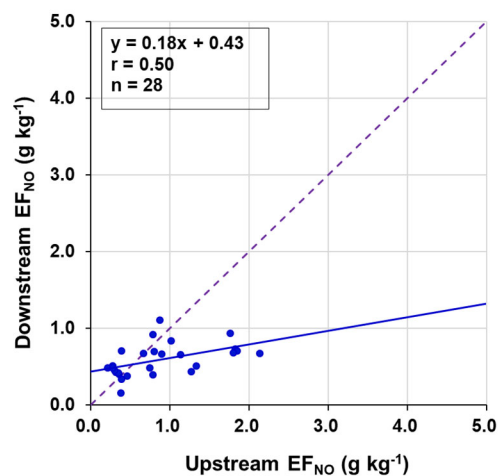
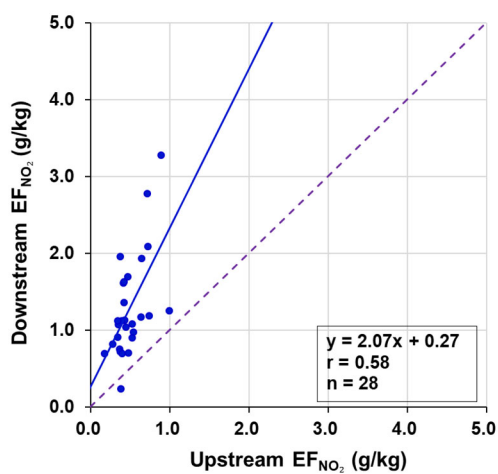


Figure S2. Peat combustion setup with 10–30 g of peat (with 25 % or 60 % moisture content) loaded in an asbestos container, ignited by a propane torch for each combustion experiment. The induction heating plate is used as a supplemental heating source for the first 5–10 minutes after the peat samples are added.

(a) NO



(b) NO₂



(c) NO_x (as NO₂)

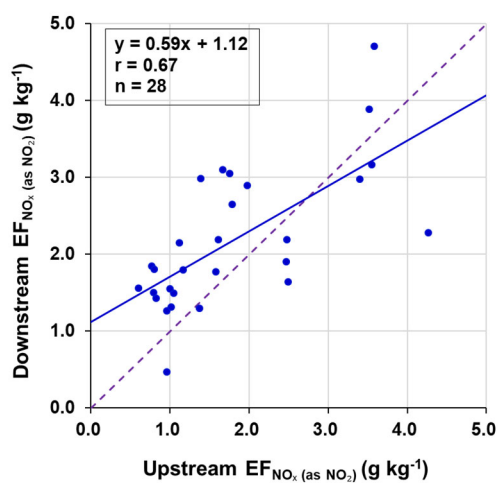


Figure S3. Comparison of emission factors (EFs) for: (a) NO; (b) NO₂; and (c) NO_x (as NO₂) downstream and upstream of the oxidation flow reactor (OFR) using a NO_x analyzer with chemiluminescence detection. See Figure 2 for the sampling configuration.

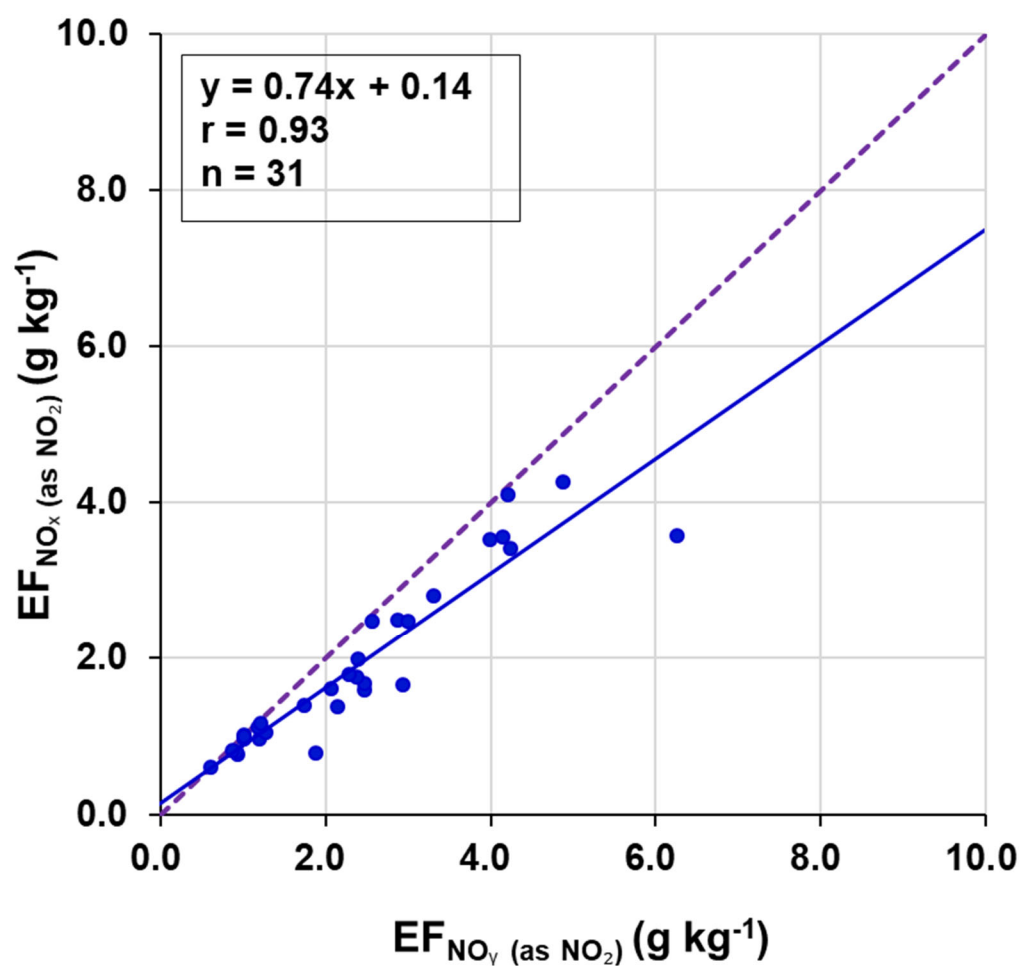


Figure S4. Comparison of EF_{NO_x} and EF_{NO_y}. NO_x and NO_y measurements are expressed as equivalent NO₂ and were derived from the upstream NO_x and NO_y analyzers as specified in Table S1.

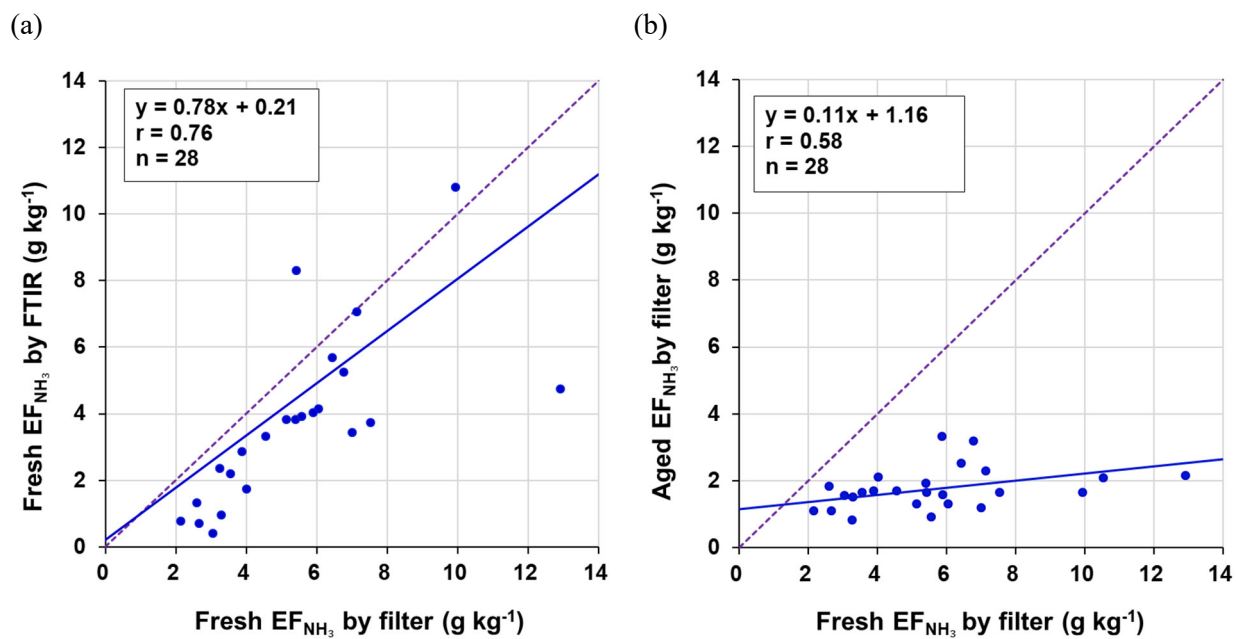


Figure S5. Comparison of: (a) fresh EF_{NH_3} by FTIR and citric-acid impregnated filter measurements; and (b) aged vs. fresh EF_{NH_3} by impregnated filter measurements. Fresh and aged measurements represent EF_{NH_3} upstream and downstream of the Oxidation Flow Reactor (OFR). Aged EF_{NH_3} includes both 2- and 7-day aging.

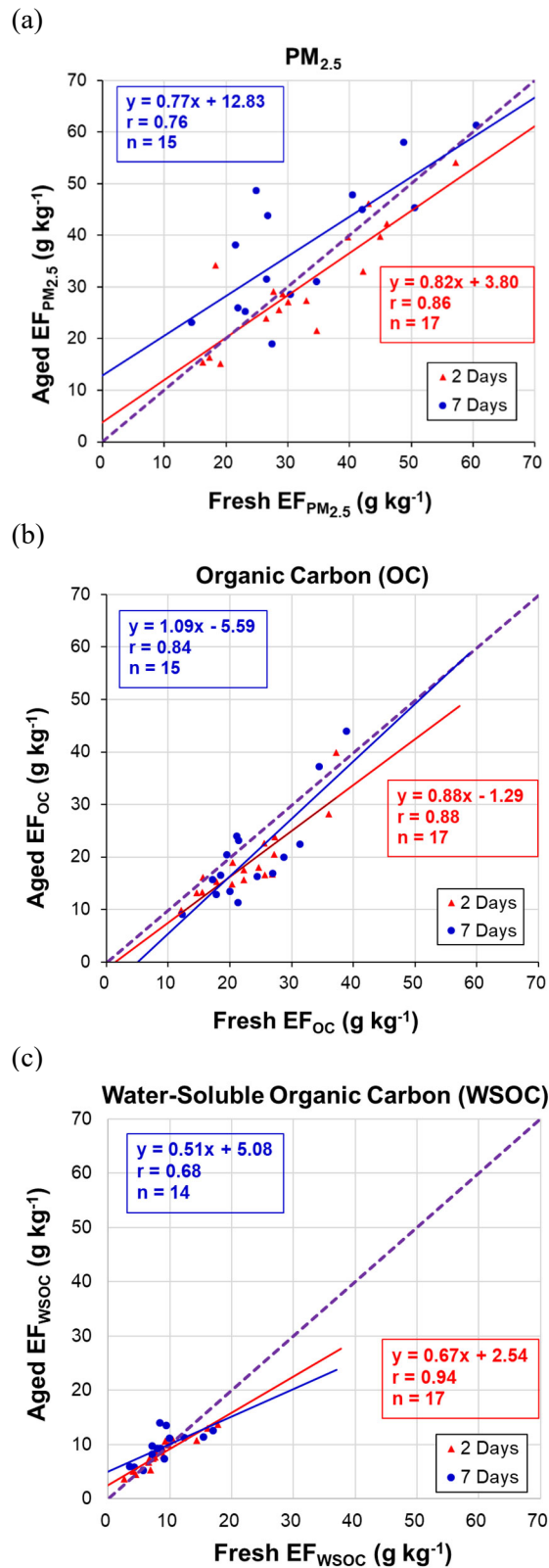


Figure S6. Comparison between aged and fresh emission factors (EFs) for: (a) PM_{2.5} mass; (b) organic carbon (OC); and (c) water-soluble organic carbon (WSOC). Aged EFs are acquired downstream of the oxidation flow reactor (OFR). The 2- and 7-days denotes the oxidative aging of 2 and 7 days.