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_2O 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_2O_5, HNO_3, HNO_4, $ClONO_2$, HONO, alkyl nitrates, and PAN. Determines nitrogen budget.
Ammonia (NH_3), nitrous oxide (N_2O), 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.

[a]LDL=Lower Detection Limit

[b]The Carbon Compounds include hydrogen cyanide (HCN), formaldehyde (CH_2O), methanol (CH_3OH), formic acid (HCOOH), carbonyl sulfide (COS), ethylene (C_2H_4), ethane (C_2H_6), acetaldehyde (C_2H_4O), ethanol (C_2H_5OH), acetic acid (CH_3COOH), propane (C_3H_8), acrolein (C_3H_4O), acetone (C_3H_6O), 3-butadiene (C_4H_6), benzene (C_6H_6), hexane (C_6H_{14}), phenol (C_6H_5OH), and chlorobenzene (C_6H_5Cl) 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
	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
Experiment 1	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 ± Standard Deviation		16.22 ± 0.81	14.30 ± 0.58	1.92 ± 0.26	2.09 ± 0.16	3.78 ± 0.06	5.29 ± 0.32	1.69 ± 0.07	2.68 ± 0.26	0.60 ± 0.04	0.09 ± 0.09	1.46 ± 0.15
CV (%)		4.99	4.06	13.54	7.66	1.59	6.05	4.14	9.7	6.67	100	10.27
	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
Experiment 2	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 ± Standard Deviation		16.01 ± 0.76	14.02 ± 0.61	1.99 ± 0.19	1.63 ± 0.49	3.93 ± 0.22	5.08 ± 0.43	1.74 ± 0.14	3.00 ± 0.30	0.62 ± 0.06	0.02 ± 0.02	1.64 ± 0.25
CV (%)		4.75	4.35	9.55	30.06	5.6	8.46	8.05	10	9.68	100	15.24
	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
Experiment 3	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 ± Standard Deviation		14.19 ± 0.37	12.32 ± 0.36	1.87 ± 0.18	1.60 ± 0.09	3.31 ± 0.15	4.25 ± 0.23	1.57 ± 0.08	2.58 ± 0.09	0.73 ± 0.05	0.16 ± 0.06	1.60 ± 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
	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
Experiment 4	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 ± Standard Deviation		13.26 ± 0.23	11.96 ± 0.20	1.30 ± 0.12	0.66 ± 0.07	1.88 ± 0.10	4.38 ± 0.17	1.64 ± 0.10	3.86 ± 0.20	0.69 ± 0.06	0.17 ± 0.09	3.41 ± 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
	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
Experiment 5	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 ± Standard Deviation		9.32 ± 0.44	8.27 ± 0.30	1.05 ± 0.21	0.43 ± 0.06	1.36 ± 0.06	3.14 ± 0.13	1.32 ± 0.15	2.46 ± 0.07	0.51 ± 0.08	0.09 ± 0.10	2.02 ± 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}
Odintsovo, 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
	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
Pskov, Siberia	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
	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
Northern Alaska, USA	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
	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
Putnam County Lakebed, Florida, USA	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
	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[e]	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[e]	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[e]	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]	NA[d]	1466.67
	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
Everglades National Park, Florida, USA	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
	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
Borneo, Malaysia	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
	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

[a]Ultraviolet lamp voltages (OFR185 mode) were used to simulate 2- and 7-days of atmospheric aging

[b]Based on 5 L min^{-1} flow rate
[c]These unpaired samples (fresh and aged, n=5) are not included in the averages by peat type
[d]Data not available
[e]Samples 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 CO_2, CO, and CH_4.

a) 25 % Fuel Moisture

Peat Type (# in the average)	Sample ID	Emission Factors in g/kg				
		EF_{CO_2}	EF_{CO}	EF_{CH_4}	EF_{CO}/EF_{CO_2}	EF_{CH_4}/EF_{CO_2}
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 NH_3, HCN, NO, NO_2, NO_y, and N_2O.

a) 25 % Fuel Moisture

Peat Type (# in the average)	Sample ID	Emission Factors in g/kg							
		EF_{NH_3}	EF_{HCN}	EF_{NO}	EF_{NO_2}	EF_{NOx} (as NO_2)	EF_{NOy} (as NO_2)	EF N_2O	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%

[a]Data 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							
	Boreal							
	Odintsovo, Russia				Pskov, Siberia			
Aging Time	2 days		7 days		2 days		7 days	
	Fresh 2	Aged 2	Fresh 7	Aged 7	Fresh 2	Aged 2[a]	Fresh 7	Aged 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 ± 3.50E+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	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	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	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	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	3.19E-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	5.98E-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	4.98E-01 ± 7.54E-02	5.17E-02 ± 3.98E-02	2.24E+00 ± 4.40E-01
Sulfate ($SO_4^=$)	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	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	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	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	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 ± 9.37E-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	2.56E+00 ± 6.59E-01	2.70E+00 ± 9.49E-01	1.81E+00 ± 1.67E-01
Pyrolized Carbon (OP)	3.57E+00 ± 8.30E-01	3.23E+00 ± 1.33E+00	3.94E+00 ± 1.14E+00	3.88E+00 ± 9.68E-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	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	2.75E+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	1.47E+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
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	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	2.04E+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	8.41E+00 ± 1.24E+00	8.78E+00 ± 1.19E+00[d]	8.74E+00 ± 1.26E+00
Formate ($CH_2O_2^-$)	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	5.68E-02 ± 3.36E-02	2.13E-02 ± 6.21E-03	1.18E-01 ± 6.27E-02
Acetate ($C_2H_4O_2^-$)	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	1.08E-01 ± 8.10E-02	7.04E-02 ± 3.61E-02	3.09E-01 ± 3.56E-01
Oxalate ($C_2H_4O_2^=$)	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	3.56E-01 ± 5.62E-02	2.55E-02 ± 1.35E-02	1.12E+00 ± 2.24E-01
Propionate ($C_3H_5O_2^-$)	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	1.02E-02 ± 1.77E-02	1.01E-02 ± 8.97E-03	0.00E+00 ± 7.00E-03
Levoglucosan ($C_6H_{10}O_5$)	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	1.22E+00 ± 3.92E-01	2.93E+00 ± 8.11E-01	1.19E+00 ± 4.29E-01
Mannosan ($C_6H_{10}O_5$)	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	0.00E+00 ± 1.35E-02	3.91E-01 ± 5.12E-01	1.61E-01 ± 4.58E-01
Galactose/Maltitol ($C_6H_{12}O_6$/$C_{12}H_{24}O_{11}$)	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	0.00E+00 ± 6.93E-03	0.00E+00 ± 8.69E-03	2.57E-02 ± 1.83E-01
Glycerol ($C_3H_8O_3$)	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 ± 1.24E-04	1.57E-01 ± 1.83E-01	0.00E+00 ± 1.40E-04
Mannitol ($C_6H_{14}O_6$)	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 ± 2.48E-03	0.00E+00 ± 3.10E-03	5.40E-02 ± 9.35E-02
Aluminum (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	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	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 ± 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-01 ± 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 ± Standard Deviation							
	Temperate				Subtropical			
	Northern Alaska, USA				Putnam County Lakebed, Florida			
Aging Time	2 days		7 days		2 (25%) days		7 (25%) days	
	Fresh 2	Aged 2	Fresh 7	Aged 7[a]	Fresh 2	Aged 2	Fresh 7	Aged 7
Peat IDs in the average[b]	PEAT013, PEAT014, PEAT019		PEAT020, PEAT022		PEAT008, PEAT009		PEAT005, PEAT006	
$PM_{2.5}$	2.50E+01 ± 6.80E+00	2.42E+01 ± 6.88E+00	2.24E+01 ± 1.13E+01	2.58E+01 ± 3.85E+00	5.16E+01 ± 7.91E+00	4.82E+01 ± 8.39E+00	5.47E+01 ± 8.28E+00	5.97E+01 ± 2.39E+00
Nitric Acid (HNO_3)	9.72E-02 ± 5.37E-02	6.82E-02 ± 2.80E-02	5.19E-02 ± 1.61E-02	7.41E-02 ± 3.74E-02	9.30E-02 ± 7.19E-03	1.80E-01 ± 5.01E-02	1.87E-01 ± 1.64E-01	1.37E-01 ± 8.77E-03
Ammonia (NH_3)	3.79E+00 ± 6.77E-01	1.39E+00 ± 4.94E-01	5.58E+00 ± 6.41E-01	1.31E+00 ± 2.65E-02	1.29E+01 ± 2.59E-01	2.27E+00 ± 1.48E-01	na[c]	8.37E-01 ± 4.04E-01
Water-Soluble Sodium (Na^+)	6.17E-03 ± 1.55E-02	1.50E-02 ± 2.08E-02	8.49E-03 ± 1.70E-02	1.31E-02 ± 1.70E-02	4.43E-03 ± 1.88E-02	8.93E-03 ± 1.79E-02	1.63E-02 ± 2.06E-02	1.92E-02 ± 2.06E-02
Water-Soluble Potassium (K^+)	7.57E-03 ± 1.15E-02	na[c]	7.19E-03 ± 1.60E-03	na[c]	5.90E-03 ± 8.34E-03	na[c]	1.58E-02 ± 2.16E-03	na[c]
Chloride (Cl^-)	5.15E-02 ± 1.91E-02	5.28E-02 ± 2.15E-02	6.39E-02 ± 2.67E-02	2.92E-02 ± 4.88E-03	7.17E-02 ± 7.01E-03	8.00E-02 ± 3.49E-02	7.24E-02 ± 1.09E-02	5.17E-02 ± 5.99E-03
Nitrite (NO_2^-)	4.42E-02 ± 7.65E-02	4.24E-04 ± 7.38E-03	0.00E+00 ± 8.07E-03	3.52E-04 ± 8.10E-03	2.44E-02 ± 3.26E-02	4.86E-03 ± 1.14E-02	2.15E-04 ± 9.80E-03	7.25E-04 ± 9.83E-03
Nitrate (NO_3^-)	5.42E-02 ± 5.39E-02	3.15E-01 ± 6.22E-02	3.77E-02 ± 2.01E-02	2.00E+00 ± 1.22E+00	7.77E-02 ± 5.03E-02	4.11E-01 ± 2.16E-02	2.17E-02 ± 1.18E-02	6.55E-01 ± 8.17E-02
Sulfate ($SO_4^{=}$)	1.21E-01 ± 1.25E-01	7.78E-02 ± 2.68E-02	4.37E-02 ± 2.46E-02	1.60E-01 ± 3.55E-02	4.21E-01 ± 4.30E-01	7.17E-01 ± 5.05E-01	1.17E-01 ± 1.07E-02	7.68E-01 ± 1.10E-01
Ammonium (NH_4^+)	3.11E-02 ± 5.37E-02	1.73E-01 ± 2.37E-01	5.71E-04 ± 2.42E-03	1.09E+00 ± 8.63E-02	4.02E-04 ± 2.68E-03	2.82E-02 ± 3.99E-02	2.55E-04 ± 2.94E-03	6.01E-01 ± 4.49E-02
OC1 (140°C)	3.69E+00 ± 1.73E+00	2.62E+00 ± 1.69E+00	2.31E+00 ± 1.96E+00	1.00E+00 ± 6.02E-01	5.02E+00 ± 2.05E+00	3.74E+00 ± 2.13E+00	7.04E+00 ± 1.89E+00	6.00E+00 ± 1.61E+00
OC2 (280°C)	5.36E+00 ± 1.53E+00	4.33E+00 ± 1.17E+00	3.68E+00 ± 1.19E+00	2.57E+00 ± 1.29E+00	1.11E+01 ± 6.58E-01	9.43E+00 ± 2.05E+00	1.12E+01 ± 6.07E-01	1.18E+01 ± 2.01E+00
OC3 (480°C)	6.39E+00 ± 1.24E+00	5.67E+00 ± 7.01E-01	5.68E+00 ± 4.09E-01	4.86E+00 ± 2.00E+00	1.28E+01 ± 1.92E+00	1.21E+01 ± 2.55E+00	1.12E+01 ± 2.03E+00	1.31E+01 ± 1.51E+00
OC4 (580°C)	1.90E+00 ± 6.20E-01	1.52E+00 ± 4.89E-01	1.54E+00 ± 1.36E-01	2.16E+00 ± 3.18E-01	3.76E+00 ± 1.49E+00	3.70E+00 ± 3.21E-01	2.35E+00 ± 3.53E-01	3.21E+00 ± 1.38E+00
Pyrolized Carbon (OP)	1.78E+00 ± 3.00E-01	2.40E+00 ± 5.22E-01	1.53E+00 ± 3.53E-01	1.79E+00 ± 1.13E+00	4.00E+00 ± 1.53E+00	5.08E+00 ± 1.42E+00	4.85E+00 ± 1.16E+00	6.41E+00 ± 1.07E+00
Organic Carbon (OC)	1.91E+01 ± 3.99E+00	1.65E+01 ± 3.04E+00	1.47E+01 ± 3.48E+00	1.24E+01 ± 4.71E+00	3.66E+01 ± 1.75E+00	3.40E+01 ± 8.31E+00	3.66E+01 ± 3.13E+00	4.06E+01 ± 4.74E+00
EC1 (580°C)	1.54E+00 ± 6.85E-01	2.27E+00 ± 5.63E-01	1.12E+00 ± 3.61E-01	1.91E+00 ± 1.28E+00	3.83E+00 ± 9.38E-01	4.56E+00 ± 1.02E+00	3.52E+00 ± 8.43E-01	5.37E+00 ± 1.33E+00
EC2 (740°C)	7.24E-01 ± 4.66E-01	6.59E-01 ± 4.89E-01	1.17E+00 ± 2.32E-01	4.58E-01 ± 5.77E-01	1.91E+00 ± 1.57E+00	1.52E+00 ± 1.37E+00	2.24E+00 ± 6.65E-01	1.95E+00 ± 4.49E-01
EC3 (840°C)	0.00E+00 ± 5.30E-03	0.00E+00 ± 5.30E-03	0.00E+00 ± 5.80E-03	0.00E+00 ± 5.80E-03	0.00E+00 ± 7.88E-03	0.00E+00 ± 7.88E-03	0.00E+00 ± 7.03E-03	0.00E+00 ± 7.03E-03
Elemental Carbon (EC)	4.85E-01 ± 1.91E-01	5.33E-01 ± 3.04E-01	7.62E-01 ± 2.39E-01	5.76E-01 ± 7.26E-01	1.75E+00 ± 6.10E-01	9.94E-01 ± 1.51E-01	9.10E-01 ± 1.31E-01	9.11E-01 ± 1.32E-01
Total Carbon (TC)	1.96E+01 ± 3.99E+00	1.71E+01 ± 3.15E+00	1.55E+01 ± 3.72E+00	1.30E+01 ± 5.44E+00	3.84E+01 ± 1.69E+00	3.50E+01 ± 8.41E+00	3.75E+01 ± 3.11E+00	4.15E+01 ± 4.74E+00
Water-Soluble OC (WSOC)	6.94E+00 ± 9.59E-01	6.68E+00 ± 1.19E+00	6.44E+00 ± 1.06E+00	6.73E+00 ± 2.04E+00	9.89E+00 ± 1.38E+00	1.08E+01 ± 1.44E+00	8.87E+00 ± 1.23E+00	1.38E+01 ± 1.84E+00
Formate ($CH_2O_2^-$)	2.34E-02 ± 1.27E-02	4.93E-02 ± 1.13E-02	1.45E-02 ± 3.90E-03	6.19E-02 ± 1.99E-02	5.04E-02 ± 4.15E-02	9.05E-02 ± 4.79E-02	1.19E-02 ± 1.79E-03	9.18E-02 ± 1.34E-02
Acetate ($C_2H_4O_2^-$)	9.15E-02 ± 5.18E-02	1.52E-01 ± 5.76E-02	8.73E-02 ± 1.05E-02	8.28E-02 ± 5.39E-02	8.98E-02 ± 6.36E-02	2.21E-02 ± 2.74E-03	3.04E-02 ± 3.65E-03	1.55E-01 ± 1.89E-02
Oxalate ($C_2H_4O_2^{=}$)	8.42E-03 ± 7.42E-03	1.98E-01 ± 3.31E-02	6.22E-03 ± 8.80E-03	8.31E-01 ± 1.24E-01	2.29E-02 ± 3.24E-02	2.68E-01 ± 7.60E-02	0.00E+00	6.71E-01 ± 1.41E-01
Propionate ($C_3H_5O_2^-$)	2.00E-03 ± 3.69E-03	6.97E-03 ± 1.21E-02	0.00E+00 ± 4.04E-03	9.59E-03 ± 1.36E-02	0.00E+00 ± 5.49E-03	0.00E+00 ± 5.49E-03	0.00E+00 ± 4.90E-03	0.00E+00 ± 4.90E-03
Levoglucosan ($C_6H_{10}O_5$)	4.71E+00 ± 3.15E+00	4.25E+00 ± 2.01E+00	2.13E+00 ± 8.49E-01	1.31E+00 ± 9.32E-01	1.63E+00 ± 4.44E-01	1.34E+00 ± 3.66E-01	1.72E+00 ± 4.90E-01	8.96E-01 ± 3.35E-01
Mannosan ($C_6H_{10}O_5$)	8.00E-01 ± 3.16E-01	7.83E-01 ± 3.14E-01	5.88E-01 ± 2.95E-01	2.50E-01 ± 2.67E-01	0.00E+00 ± 1.20E-02	0.00E+00 ± 1.20E-02	0.00E+00 ± 1.07E-02	0.00E+00 ± 1.07E-02
Galactose/Maltitol ($C_6H_{12}O_6/C_{12}H_{24}O_{11}$)	0.00E+00 ± 4.13E-03	0.00E+00 ± 4.13E-03	0.00E+00 ± 4.52E-03	0.00E+00 ± 4.52E-03	0.00E+00 ± 6.14E-03	0.00E+00 ± 6.14E-03	0.00E+00 ± 5.49E-03	0.00E+00 ± 5.49E-03
Glycerol ($C_3H_8O_3$)	6.45E-02 ± 1.12E-01	5.73E-02 ± 9.92E-02	2.99E-01 ± 4.23E-01	3.44E-02 ± 4.87E-02	0.00E+00 ± 1.10E-04	0.00E+00 ± 1.10E-04	0.00E+00 ± 9.80E-05	0.00E+00 ± 9.80E-05
Mannitol ($C_6H_{14}O_6$)	0.00E+00 ± 1.48E-03	2.99E-02 ± 5.19E-02	0.00E+00 ± 1.61E-03	0.00E+00 ± 1.61E-03	0.00E+00 ± 2.19E-03	0.00E+00 ± 2.19E-03	0.00E+00 ± 1.96E-03	0.00E+00 ± 1.96E-03
Aluminum (Al)	5.55E-03 ± 9.78E-02	1.48E-02 ± 9.78E-02	5.70E-03 ± 1.07E-01	2.25E-03 ± 1.07E-01	1.35E-02 ± 1.45E-01	2.91E-02 ± 1.46E-01	7.34E-02 ± 1.30E-01	4.83E-02 ± 1.30E-01
Silicon (Si)	2.29E-03 ± 1.15E-02	1.13E-03 ± 1.15E-02	3.62E-04 ± 1.26E-02	1.44E-01 ± 1.33E-02	0.00E+00 ± 1.71E-02	9.10E-03 ± 1.71E-02	0.00E+00 ± 1.53E-02	1.29E-02 ± 1.53E-02
Phosphorous (P)	0.00E+00 ± 2.28E-03	0.00E+00 ± 2.28E-03	0.00E+00 ± 2.49E-03	0.00E+00 ± 2.49E-03	0.00E+00 ± 3.39E-03	0.00E+00 ± 3.39E-03	0.00E+00 ± 3.03E-03	0.00E+00 ± 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 ± 6.24E-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 ± 4.10E-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 ± 2.33E-02	0.00E+00 ± 3.15E-02	0.00E+00 ± 3.15E-02	0.00E+00 ± 2.81E-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 ± 2.41E-02	0.00E+00 ± 2.14E-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)

	Emission Factor (g/kg) Average ± Standard Deviation							
	Subtropical				Tropical			
	Everglades National Park, Florida				Borneo, Malaysia			
Aging Time	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, PEAT038		PEAT039, PEAT041	
$PM_{2.5}$	2.31E+01 ± 6.74E+00	2.59E+01 ± 7.90E+00	2.44E+01 ± 2.63E+00	4.36E+01 ± 5.30E+00	2.28E+01 ± 5.26E+00	1.95E+01 ± 6.25E+00	2.25E+01 ± 8.33E-01	2.56E+01 ± 6.16E-01
Nitric Acid (HNO_3)	9.29E-02 ± 4.60E-02	9.17E-02 ± 4.02E-02	6.80E-02 ± 1.34E-02	1.08E-01 ± 5.61E-02	4.55E-02 ± 8.74E-03	4.89E-02 ± 8.26E-03	5.10E-02 ± 3.92E-02	4.24E-02 ± 7.44E-03
Ammonia (NH_3)	1.21E+01 ± 7.62E+00	3.42E+00 ± 1.83E+00	1.52E+01 ± 4.60E+00	2.08E+00 ± 3.11E-01	4.64E+00 ± 1.07E+00	1.82E+00 ± 1.65E-01	5.73E+00 ± 2.33E-01	1.25E+00 ± 4.72E-01
Water-Soluble Sodium (Na^+)	8.36E-03 ± 2.97E-02	na[c]	7.49E-03 ± 2.62E-02	na[c]	3.61E-03 ± 1.15E-02	na[c]	4.08E-03 ± 1.56E-02	na[c]
Water-Soluble Potassium (K^+)	3.15E-01 ± 6.17E-01	0.00E+00 ± 9.05E-01	6.26E-03 ± 4.83E-03	0.00E+00 ± 5.52E-01	6.40E-03 ± 4.63E-03	0.00E+00 ± 3.80E-03	1.08E-02 ± 7.48E-03	0.00E+00 ± 1.74E-02
Chloride (Cl^-)	5.90E-02 ± 2.05E-02	5.92E-02 ± 4.99E-02	5.39E-02 ± 7.59E-03	3.69E-02 ± 9.88E-03	2.55E-02 ± 3.34E-03	1.91E-02 ± 3.32E-03	3.49E-02 ± 1.50E-02	2.66E-02 ± 4.06E-03
Nitrite (NO_2^-)	1.61E-02 ± 2.90E-02	6.54E-04 ± 1.35E-02	2.10E-04 ± 1.25E-02	1.04E-03 ± 1.25E-02	0.00E+00 ± 5.48E-03	1.48E-04 ± 5.48E-03	0.00E+00 ± 7.43E-03	3.89E-03 ± 7.07E-03
Nitrate (NO_3^-)	5.53E-02 ± 4.38E-02	6.72E-01 ± 2.44E-01	3.24E-02 ± 2.00E-02	3.39E+00 ± 6.88E-01	1.86E-02 ± 6.63E-03	1.71E-01 ± 1.40E-02	2.86E-02 ± 2.50E-02	1.20E+00 ± 3.65E-01
Sulfate ($SO_4^=$)	2.79E-01 ± 3.32E-01	3.65E-01 ± 2.87E-01	8.34E-02 ± 6.23E-03	8.78E-01 ± 2.29E-01	3.72E-02 ± 3.18E-03	1.05E-01 ± 6.58E-03	3.00E-02 ± 1.28E-02	5.02E-01 ± 3.22E-02
Ammonium (NH_4^+)	3.10E-04 ± 4.25E-03	9.01E-02 ± 1.54E-01	8.77E-04 ± 3.74E-03	2.00E+00 ± 4.67E-01	4.11E-04 ± 1.64E-03	1.59E-01 ± 3.47E-02	6.08E-04 ± 2.23E-03	1.21E+00 ± 2.19E-01
OC1 (140°C)	2.62E+00 ± 8.76E-01	1.79E+00 ± 1.09E+00	4.40E+00 ± 1.26E+00	1.73E+00 ± 4.91E-01	3.71E+00 ± 1.32E+00	1.14E+00 ± 3.27E-01	3.42E+00 ± 9.16E-01	1.48E+00 ± 8.57E-01
OC2 (280°C)	5.36E+00 ± 1.67E+00	4.15E+00 ± 1.43E+00	5.93E+00 ± 4.82E-01	5.28E+00 ± 7.77E-01	5.06E+00 ± 7.46E-01	3.53E+00 ± 2.92E-01	5.27E+00 ± 2.88E-01	3.10E+00 ± 6.37E-01
OC3 (480°C)	5.35E+00 ± 2.12E+00	5.36E+00 ± 1.52E+00	5.68E+00 ± 7.12E-01	7.67E+00 ± 1.41E+00	5.75E+00 ± 7.62E-01	5.45E+00 ± 9.06E-01	5.89E+00 ± 4.23E-01	5.32E+00 ± 7.49E-01
OC4 (580°C)	2.05E+00 ± 1.01E+00	2.20E+00 ± 1.02E+00	1.49E+00 ± 1.42E-01	2.42E+00 ± 3.64E-01	9.91E-01 ± 1.89E-01	1.59E+00 ± 3.05E-01	1.24E+00 ± 2.68E-01	1.43E+00 ± 2.36E-01
Pyrolized Carbon (OP)	2.40E+00 ± 6.65E-01	2.46E+00 ± 1.12E+00	3.17E+00 ± 5.38E-01	5.40E+00 ± 1.13E+00	2.43E+00 ± 4.29E-01	2.31E+00 ± 3.79E-01	2.33E+00 ± 3.79E-01	3.36E+00 ± 6.30E-01
Organic Carbon (OC)	1.78E+01 ± 5.70E+00	1.60E+01 ± 5.20E+00	2.07E+01 ± 1.05E+00	2.25E+01 ± 1.82E+00	1.79E+01 ± 3.43E+00	1.40E+01 ± 1.10E+00	1.82E+01 ± 8.69E-01	1.47E+01 ± 2.64E+00
EC1 (580°C)	1.88E+00 ± 6.44E-01	2.06E+00 ± 5.59E-01	1.82E+00 ± 4.64E-01	4.76E+00 ± 1.15E+00	1.45E+00 ± 3.53E-01	1.56E+00 ± 3.67E-01	1.54E+00 ± 3.38E-01	2.33E+00 ± 5.41E-01
EC2 (740°C)	1.53E+00 ± 8.52E-01	9.16E-01 ± 9.99E-01	1.83E+00 ± 2.18E-01	1.51E+00 ± 9.85E-01	1.16E+00 ± 2.12E-01	1.16E+00 ± 1.28E-01	1.16E+00 ± 1.29E-01	1.20E+00 ± 1.85E-01
EC3 (840°C)	0.00E+00 ± 9.67E-03	0.00E+00 ± 9.67E-03	0.00E+00 ± 8.96E-03	0.00E+00 ± 8.96E-03	0.00E+00 ± 3.93E-03	0.00E+00 ± 3.93E-03	0.00E+00 ± 4.81E-03	0.00E+00 ± 4.81E-03
Elemental Carbon (EC)	1.01E+00 ± 3.60E-01	5.16E-01 ± 1.30E-01	4.83E-01 ± 4.19E-01	8.74E-01 ± 3.55E-01	1.84E-01 ± 3.55E-02	4.13E-01 ± 6.49E-02	3.67E-01 ± 5.92E-02	1.73E-01 ± 2.44E-01
Total Carbon (TC)	1.88E+01 ± 5.90E+00	1.65E+01 ± 5.32E+00	2.11E+01 ± 9.92E-01	2.34E+01 ± 1.49E+00	1.81E+01 ± 3.46E+00	1.44E+01 ± 1.14E+00	1.85E+01 ± 8.26E-01	1.49E+01 ± 2.39E+00
Water-Soluble OC (WSOC)	7.16E+00 ± 2.21E+00	7.45E+00 ± 2.37E+00	8.36E+00 ± 1.43E+00	1.01E+01 ± 1.47E+00	3.36E+00 ± 9.79E-01	4.40E+00 ± 9.73E-01	3.84E+00 ± 5.51E-01	5.86E+00 ± 7.79E-01
Formate ($CH_2O_2^-$)	2.92E-02 ± 3.03E-02	7.94E-02 ± 3.49E-02	1.29E-02 ± 3.47E-03	1.83E-01 ± 1.13E-01	2.28E-02 ± 3.53E-03	4.86E-02 ± 7.75E-03	3.02E-02 ± 4.72E-03	1.07E-01 ± 2.83E-02
Acetate ($C_2H_4O_2^-$)	7.04E-02 ± 4.13E-02	1.01E-01 ± 4.24E-02	5.21E-02 ± 2.34E-02	1.50E-01 ± 5.08E-02	6.66E-02 ± 1.72E-02	1.08E-01 ± 1.36E-02	1.30E-01 ± 1.64E-02	1.44E-01 ± 1.71E-02
Oxalate ($C_2H_4O_2^=$)	2.29E-02 ± 1.02E-02	2.31E-01 ± 4.49E-02	2.01E-02 ± 7.96E-03	1.37E+00 ± 3.11E-01	6.19E-02 ± 4.18E-02	2.16E-01 ± 3.53E-02	9.66E-02 ± 4.54E-02	8.61E-01 ± 1.37E-01
Propionate ($C_3H_5O_2^-$)	1.81E-03 ± 7.08E-03	0.00E+00 ± 6.73E-03	3.80E-03 ± 6.58E-03	5.61E-03 ± 9.71E-03	9.86E-03 ± 2.74E-03	2.27E-03 ± 3.22E-03	2.71E-03 ± 3.83E-03	1.72E-02 ± 2.43E-02
Levoglucosan ($C_6H_{10}O_5$)	2.39E-01 ± 2.76E-01	2.36E-01 ± 3.03E-01	5.47E-01 ± 2.00E-01	2.76E-01 ± 3.53E-01	5.75E-01 ± 1.66E-01	4.76E-01 ± 3.35E-01	9.86E-01 ± 2.68E-01	6.47E-01 ± 1.66E-01
Mannosan ($C_6H_{10}O_5$)	0.00E+00 ± 1.54E-02	0.00E+00 ± 1.47E-02	1.49E-02 ± 4.08E-01	1.07E-01 ± 4.15E-01	0.00E+00 ± 5.97E-03	0.00E+00 ± 5.97E-03	4.07E-02 ± 2.44E-01	2.13E-02 ± 2.19E-01
Galactose/Maltitol ($C_6H_{12}O_6$/$C_{12}H_{24}O_{11}$)	0.00E+00 ± 7.93E-03	0.00E+00 ± 7.54E-03	0.00E+00 ± 6.99E-03	0.00E+00 ± 6.99E-03	0.00E+00 ± 3.07E-03	3.09E-02 ± 9.20E-02	0.00E+00 ± 4.16E-03	0.00E+00 ± 3.75E-03
Glycerol ($C_3H_8O_3$)	0.00E+00 ± 1.42E-04	0.00E+00 ± 1.35E-04	0.00E+00 ± 1.25E-04	0.00E+00 ± 1.25E-04	0.00E+00 ± 5.48E-05	0.00E+00 ± 5.48E-05	0.00E+00 ± 7.43E-05	0.00E+00 ± 6.70E-05
Mannitol ($C_6H_{14}O_6$)	0.00E+00 ± 2.83E-03	0.00E+00 ± 2.69E-03	0.00E+00 ± 2.50E-03	0.00E+00 ± 2.50E-03	3.00E-03 ± 3.29E-02	0.00E+00 ± 1.10E-03	0.00E+00 ± 1.49E-03	0.00E+00 ± 1.34E-03
Aluminum (Al)	6.97E-03 ± 1.78E-01	2.32E-02 ± 1.78E-01	6.34E-05 ± 1.65E-01	0.00E+00 ± 1.65E-01	8.79E-03 ± 7.26E-02	2.05E-02 ± 7.26E-02	9.94E-03 ± 8.88E-02	3.75E-02 ± 7.67E-02
Silicon (Si)	4.42E-03 ± 2.09E-02	7.01E-02 ± 1.14E-01	0.00E+00 ± 1.94E-02	2.12E-01 ± 2.04E-02	2.28E-03 ± 8.55E-03	1.96E-02 ± 8.60E-03	0.00E+00 ± 1.05E-02	1.74E-01 ± 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 ± 7.10E-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 ± 1.18E-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	1.36E-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

[a]Only one sample was analyzed for elements by x-ray fluorescence with concentration and measurement uncertainty.

[b]Peat ID code, detailed operation parameters are reported in Watson et al., 2019.

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

[d]WSOC 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.

[e]Data not available due to the invalidated citric acid impregnated filter sample

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

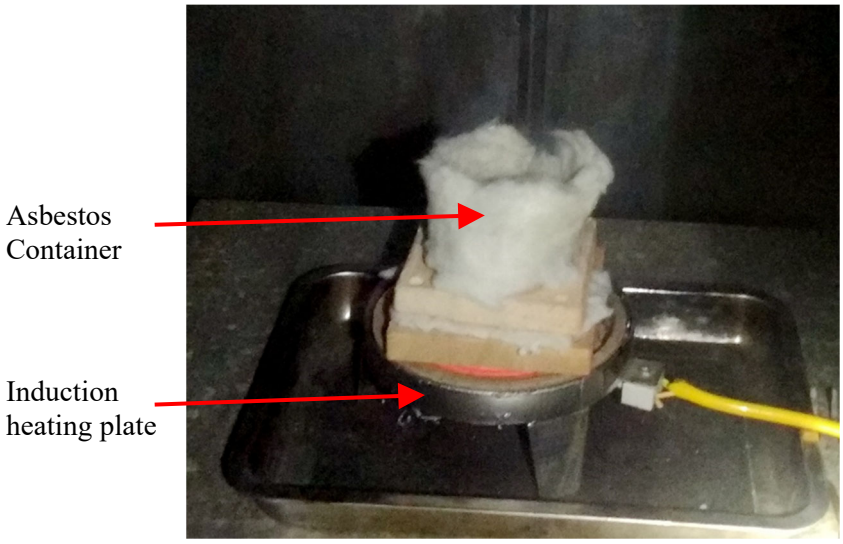
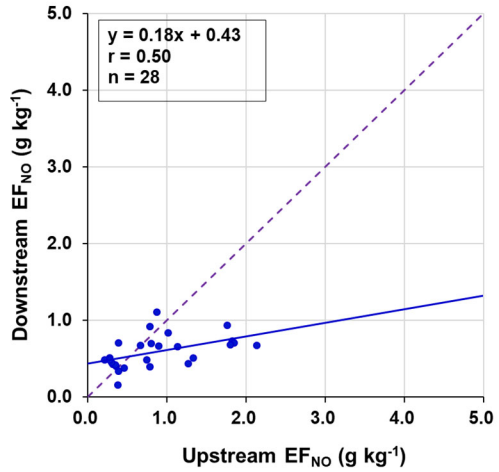
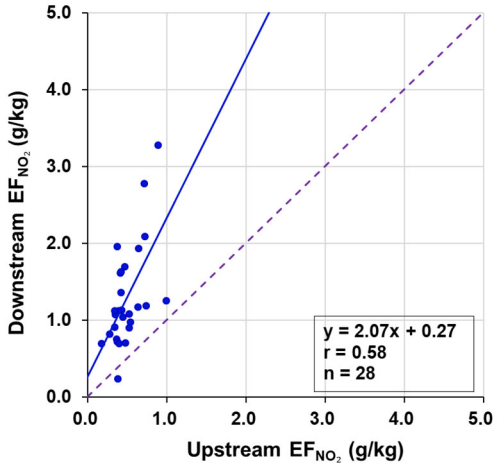


Figure S2. Peat combustion setup with 10−30 g of peat (with 25 % or 60 % moisture content) loaded in an asbestos container, ignited by a propane torch for each combustion experiment. The induction heating plate is used as a supplemental heating source for the first 5−10 minutes after the peat samples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

(a) NO



(b) NO_2



(c) NO_x (as NO_2)

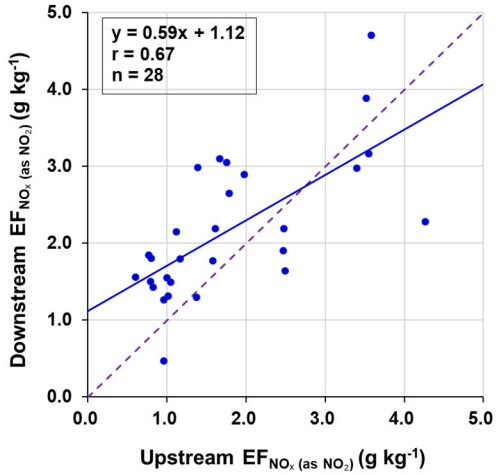


Figure S3. Comparison of emission factors (EFs) for: (a) NO; (b) NO_2; and (c) NO_x (as NO_2) downstream and upstream of the oxidation flow reactor (OFR) using a NO_x analyzer with chemiluminescence detection. See Figure 2 for the sampling configuration.

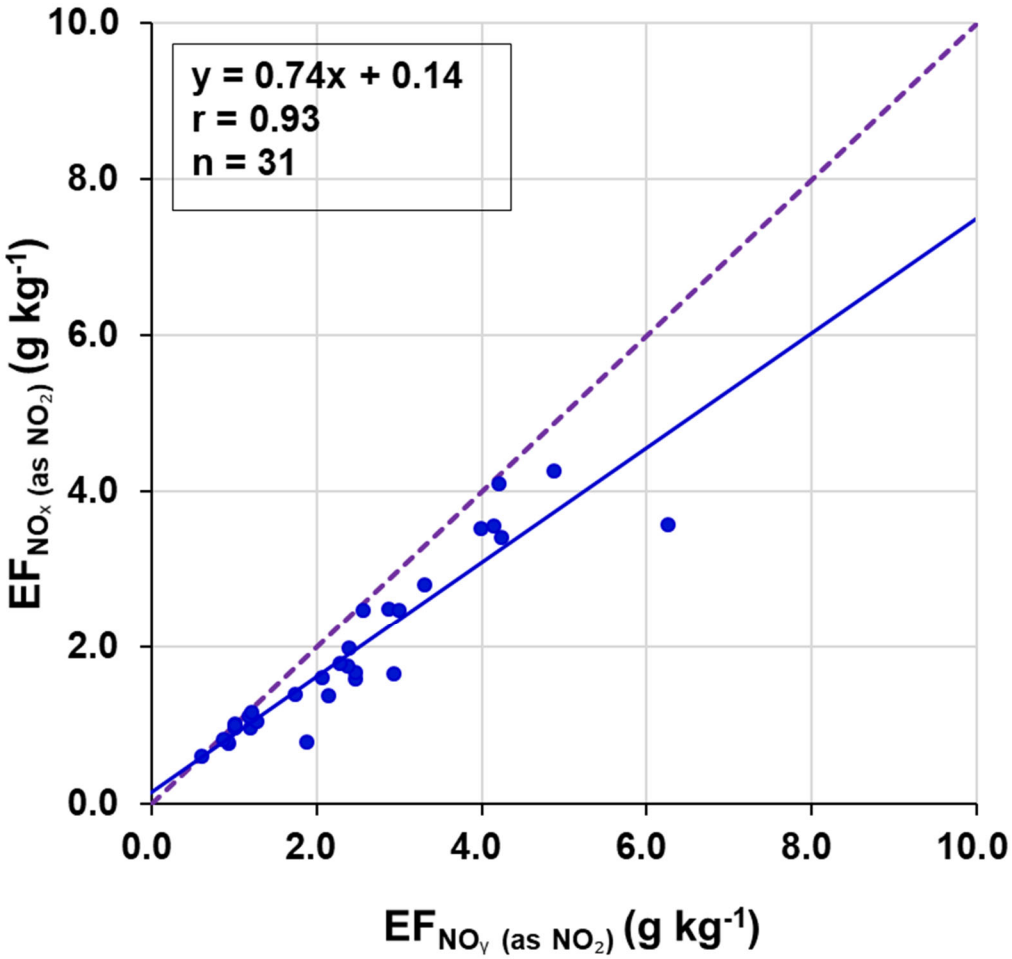


Figure S4. Comparison of EF_{NOx} and EF_{NOy}. NO_x and NO_y measurements are expressed as equivalent NO_2 and were derived from the upstream NO_x and NO_y analyzers as specified in Table S1.

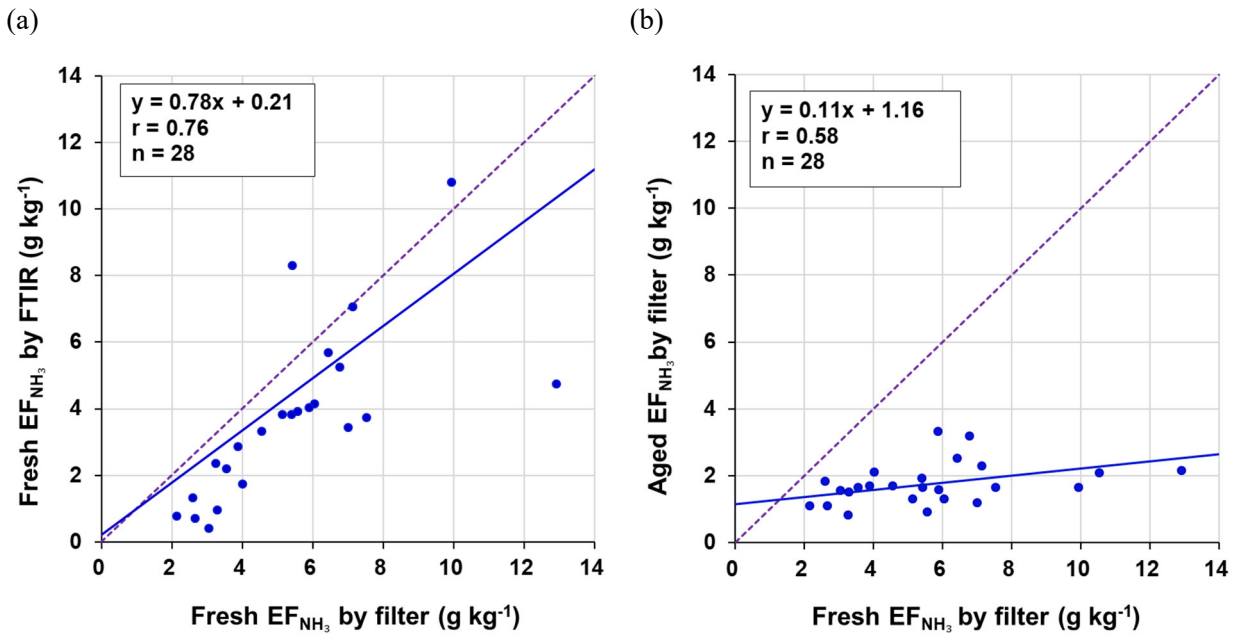
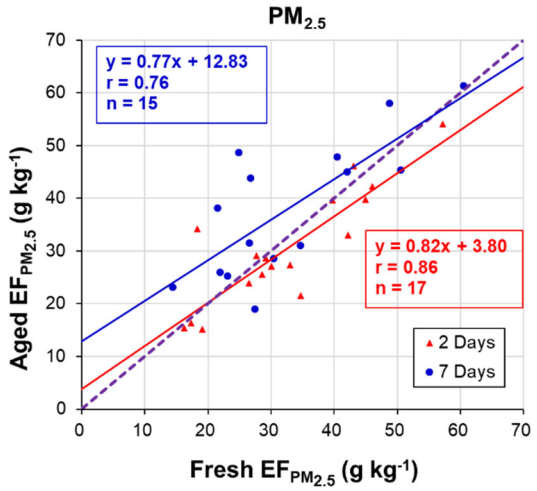
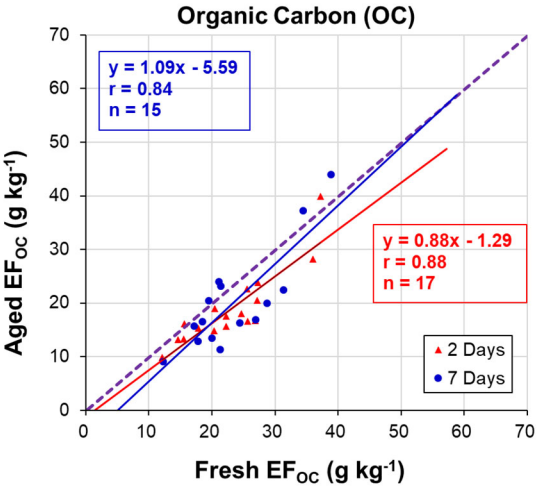


Figure S5. Comparison of: (a) fresh EF_{NH_3} by FTIR and citric-acid impregnated filter measurements; and (b) aged vs. fresh EF_{NH_3} by impregnated filter measurements. Fresh and aged measurements represent EF_{NH_3} upstream and downstream of the Oxidation Flow Reactor (OFR). Aged EF_{NH_3} includes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

(a)



(b)



(c)

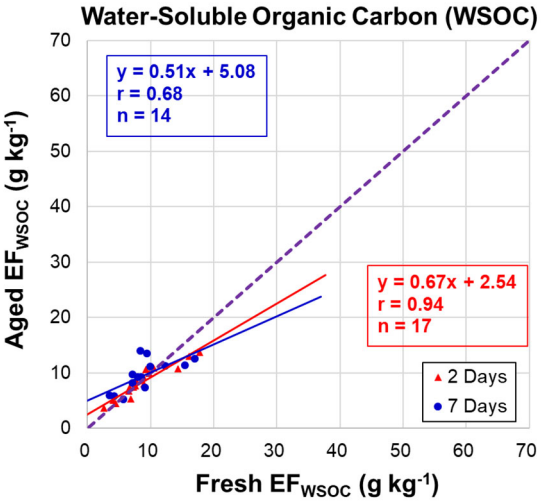


Figure S6. Comparison between aged and fresh emission factors (EFs) for: (a) $PM_{2.5}$ mass; (b) organic carbon (OC); and (c) water-soluble organic carbon (WSOC). Aged EFs are acquired downstream of the oxidation flow reactor (OFR). The 2- and 7-days denotes the oxidative aging of 2 and 7 days.