

**APPENDIX I:**  
**NUMERICAL PROFILES**

## Appendix I: Numerical Profiles

The tables in Appendix I have the raw numeric apportionment of the mean species mass for each site. The Appendix is arranged in four tables – two for the UNMIX modeling results and two for PMF modeling results. The first table shows the apportionment of the major constituents of the PM<sub>2.5</sub> mass: PM<sub>2.5</sub>, sulfate, S, OC, EC, Na, Al, Ca, Si, Fe, and K. These are followed by the apportionment of the trace constituents: Br, Cu, Mg, Mn, Ni, Pb, Se, Sr, Ti, V, and Zn. Both give the mean species mass from the source in ng/m<sup>3</sup> at the receptor. Values that were negative are truncated to 0. Refer to these tables for explicit numerical values in the apportionment.

As mentioned in Section 4.5.1, not all of the species were used to fit the UNMIX model. The results shown are actually the regression results obtained by fitting the time series output from UNMIX to the concentration data. For the species used in fitting the model this reproduces the UNMIX output, otherwise it augments the UNMIX profile output so that complete profiles are available from both tools.

**I-1. UNMIX Source Apportionment Profiles, Major Constituents**

Site Name	Source No.	PM <sub>2.5</sub>	Sulfate	S	OC	EC	Na	Al	Ca	Si	Fe	K
Acadia National Park	1	559.7	187.8786	71.0224	0.0000	0.0000	161.2054	0.1547	3.9440	0.7589	0.0000	3.6101
Acadia National Park	2	576.5	177.6896	59.3973	133.6234	76.6259	7.7062	0.0000	2.7294	1.5517	2.6429	4.8465
Acadia National Park	3	3491.2	1204.1685	365.3886	646.0309	105.0965	0.8692	0.0000	0.0000	0.0000	0.0000	5.5228
Acadia National Park	4	1385.6	587.3173	175.5305	170.1438	55.7123	0.0000	1.0795	0.2683	3.9917	1.5989	2.5207
Acadia National Park	5	296.2	48.7797	34.9734	84.2373	62.9010	1.1231	0.1323	1.4986	0.3430	2.2377	6.6157
Acadia National Park	6	606.1	195.9905	51.3116	111.5333	8.2648	0.0000	15.6244	8.9989	42.3630	12.0502	6.6859
Arendtsville	1	133.1	44.1822	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Arendtsville	2	4347.6	1794.0373	452.5188	658.2294	320.4270	46.7517	12.5158	6.0658	15.8016	9.4930	11.4931
Arendtsville	3	168.7	0.0000	0.0000	157.3949	25.9389	0.0000	0.0000	0.0619	0.0000	0.0000	4.1986
Arendtsville	4	1.8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.2885
Arendtsville	5	8818.4	3440.9121	941.1019	1152.5983	303.1704	69.4286	17.7389	6.4265	28.6750	11.9857	13.1294
Arendtsville	6	2077.3	476.0692	213.9945	167.7261	46.0942	13.8741	1.5983	1.6525	7.0298	4.3076	2.7694
Boundary Waters Canoe Area	1	360.1	54.3564	18.0147	107.6122	26.4365	0.0000	1.0912	1.7242	8.9306	30.0792	3.5848
Boundary Waters Canoe Area	2	1049.0	239.9451	70.9373	83.6890	30.0857	0.8219	0.4604	1.6288	0.4841	1.3500	2.5607
Boundary Waters Canoe Area	3	392.5	246.5419	86.5701	0.0000	7.1700	55.7813	0.4705	1.3507	2.1343	0.0000	2.5631
Boundary Waters Canoe Area	4	649.3	397.9432	122.3972	39.6976	24.1492	0.0000	0.0000	1.1223	0.4645	0.4759	2.3658
Boundary Waters Canoe Area	5	602.4	114.5690	38.8997	56.9693	15.7335	0.2005	15.5129	15.1347	42.4945	4.7920	8.3835
Boundary Waters Canoe Area	6	2100.7	334.3790	114.7677	788.8347	77.1847	0.7385	0.0000	0.5848	1.6226	0.0000	9.3043

I-1. UNMIX Source Apportionment Profiles, Major Constituents (continued)

Site Name	Source No.	PM <sub>2.5</sub>	Sulfate	S	OC	EC	Na	Al	Ca	Si	Fe	K
Brigantine National Wildlife Refuge	1	1093.1	400.1515	148.8472	0.0000	0.0000	298.4785	0.0000	8.0442	0.0000	0.0000	7.7058
Brigantine National Wildlife Refuge	2	1421.4	218.9796	66.7833	319.3498	89.4985	4.2510	5.2615	2.6059	6.2985	3.9692	8.3454
Brigantine National Wildlife Refuge	3	219.9	0.0000	56.5679	0.0000	37.7372	0.0000	0.0000	2.8723	1.3810	5.9681	2.7979
Brigantine National Wildlife Refuge	4	6514.3	2965.1745	854.1995	993.9222	227.6874	0.0000	0.0000	1.5369	20.4169	6.5789	9.9956
Brigantine National Wildlife Refuge	5	712.7	227.6205	87.7487	86.6616	8.1309	3.9289	24.5269	9.7515	52.1599	13.9494	6.8621
Brigantine National Wildlife Refuge	6	905.1	277.7358	73.4378	350.8343	191.9738	0.0000	1.9847	2.2017	5.0069	6.4511	6.5860
Bondville	1	563.8	197.7796	10.3094	66.1214	110.5148	8.2132	0.9663	0.0000	0.0000	0.3730	2.1846
Bondville	2	586.4	0.0000	83.8782	33.1907	5.1083	5.4245	11.5346	1.7124	27.2402	7.1724	2.2575
Bondville	3	622.5	199.9524	37.1114	4.9095	17.1573	1.0003	0.5368	2.2095	1.1910	0.1765	0.1047
Bondville	4	703.2	333.2045	20.7743	195.6519	16.1376	9.7964	1.7431	21.7421	19.8446	7.1307	10.4376
Bondville	5	1603.9	967.6638	260.6754	86.2187	25.5363	22.7343	3.5670	0.8805	4.8328	5.2799	3.7366
Bondville	6	8470.6	2456.1912	707.9328	1260.5243	267.6618	30.2784	4.1956	1.9328	13.0959	10.9902	18.1882
Connecticut Hill	1	6548.5	396.3883	759.9458	1478.2437	314.3671	42.4513	27.7357	11.4492	46.2868	17.7009	24.2320
Connecticut Hill	2	1947.7	853.5407	238.8804	45.1395	72.6607	22.5201	5.7760	1.1572	6.0378	0.8988	4.3227
Connecticut Hill	3	873.2	798.5579	66.4705	38.1137	26.8371	4.1360	4.8850	0.0000	3.9996	0.0000	0.1999
Connecticut Hill	4	75.4	24.0537	0.0000	0.0000	0.0000	0.0000	0.3996	0.0000	0.0000	0.0000	0.0000
Connecticut Hill	5	1766.0	852.5797	181.7411	405.1652	130.9798	3.4023	0.0000	1.3298	0.0000	4.2241	4.0522
Connecticut Hill	6	2014.1	1312.9192	306.5171	245.3373	94.7233	51.0021	0.8688	1.3954	6.6143	1.9051	3.8321

I-1. UNMIX Source Apportionment Profiles, Major Constituents (continued)

Site Name	Source No.	PM <sub>2.5</sub>	Sulfate	S	OC	EC	Na	Al	Ca	Si	Fe	K
Dolly Sods Wilderness Area	1	1051.5	577.7950	170.4467	84.9949	17.3226	93.5341	3.1319	2.6787	10.4735	1.5023	4.5922
Dolly Sods Wilderness Area	2	448.0	25.8883	4.3112	145.6223	43.9361	0.0000	3.2852	1.6160	5.4537	2.3584	3.8865
Dolly Sods Wilderness Area	3	6436.9	3308.7218	1004.8527	310.1096	36.2111	0.0000	1.0825	0.0000	10.7438	1.5501	0.5697
Dolly Sods Wilderness Area	4	1723.7	46.7780	19.1847	985.2650	171.1595	0.0000	0.0000	3.4634	0.0000	0.3047	12.3997
Dolly Sods Wilderness Area	5	1419.7	526.6217	211.4500	283.7074	110.2117	0.0594	0.0000	2.5072	1.5207	6.1997	4.4777
Dolly Sods Wilderness Area	6	253.7	0.0000	39.8397	25.0249	13.6941	0.0000	24.4859	15.3586	58.1109	14.4561	11.3976
Great Smoky Mountains National Park	1	2369.9	1103.6940	349.0093	274.9623	37.3752	91.2378	2.4177	1.9224	7.6935	1.6791	6.7375
Great Smoky Mountains National Park	2	271.3	0.0000	0.0000	91.5401	64.6842	1.4597	1.9115	3.0141	2.6160	2.8331	6.1103
Great Smoky Mountains National Park	3	2775.9	1273.7525	396.7672	305.1029	26.3230	0.4981	0.0000	0.0000	7.4456	0.9345	1.2578
Great Smoky Mountains National Park	4	1671.1	654.9688	257.6851	302.9142	122.3584	0.9839	0.0000	4.2743	0.0000	1.0176	8.7572
Great Smoky Mountains National Park	5	2218.1	728.1640	203.6353	342.8649	27.4680	0.4447	38.2239	13.5679	85.4511	21.2410	13.3741
Great Smoky Mountains National Park	6	3576.6	1400.3332	405.5390	678.9885	157.8589	0.5668	0.0000	2.2357	3.4609	2.3009	9.6977
Jefferson/James River Face Wilderness Area	1	2848.5	1579.7739	528.7374	149.5367	0.0000	122.5320	1.3631	0.0000	13.7012	2.0785	2.7516
Jefferson/James River Face Wilderness Area	2	509.8	0.0000	0.0000	246.0044	108.7194	0.0000	0.0000	0.0000	0.0000	1.0133	8.3840
Jefferson/James River Face Wilderness Area	3	1321.4	715.0657	229.6291	0.0000	0.0000	0.0000	37.2842	2.8796	49.4159	15.7447	3.4990
Jefferson/James River Face Wilderness Area	4	1613.6	486.5777	166.6158	405.3818	106.2247	0.9375	0.4586	3.4860	7.8390	4.5166	16.4741
Jefferson/James River Face Wilderness Area	5	2629.1	382.5465	146.3924	894.7918	266.3289	0.0000	0.0000	39.5935	31.7267	20.2254	24.1005
Jefferson/James River Face Wilderness Area	6	5846.1	2017.9530	679.8435	1364.8828	319.8130	0.4840	0.1187	5.5630	14.5548	8.5554	28.3775

I-1. UNMIX Source Apportionment Profiles, Major Constituents (continued)

Site Name	Source No.	PM <sub>2.5</sub>	Sulfate	S	OC	EC	Na	Al	Ca	Si	Fe	K
Livonia	1	375.4	349.9362	87.2219	19.6205	27.9543	9.1321	2.7031	0.1692	0.5390	0.2333	1.2006
Livonia	2	1926.3	479.6356	119.9405	274.8940	69.1635	12.6002	2.9209	2.8116	7.1303	2.7998	7.2548
Livonia	3	2017.6	836.0304	182.7756	243.3358	115.7114	27.1149	5.1963	3.2269	6.8306	3.6155	11.5298
Livonia	4	4732.8	1115.4770	416.0536	758.6369	221.5188	27.0440	2.1709	5.7451	14.5797	5.4021	9.6079
Livonia	5	825.0	497.9966	83.8303	155.0107	35.1822	1.9503	4.0481	0.0000	1.0634	1.6919	0.0000
Livonia	6	2943.0	1630.6676	319.1644	489.3612	226.3009	19.2477	16.3398	6.9255	21.0217	7.2448	18.8495
Lye Brook Wilderness Area	1	947.6	348.7316	124.8143	179.7884	58.8998	0.0000	0.8039	0.0000	3.0378	1.5155	0.8067
Lye Brook Wilderness Area	2	457.9	279.1864	66.2385	0.0000	0.0000	68.9820	2.2054	1.5788	3.9997	0.4080	0.6430
Lye Brook Wilderness Area	3	271.5	128.3088	42.3266	24.1837	3.2331	0.3860	0.0000	0.0000	0.9948	0.0000	0.3007
Lye Brook Wilderness Area	4	1109.0	36.4628	20.0237	252.5674	34.1902	0.0000	16.7277	13.8927	43.3542	13.2529	10.1859
Lye Brook Wilderness Area	5	646.5	56.4769	33.4712	153.4596	68.5352	0.1830	0.0000	1.4414	0.0000	2.8057	6.5674
Lye Brook Wilderness Area	6	3495.3	1630.8454	510.6194	460.5551	99.1374	0.0000	0.0000	0.0000	6.6754	2.9619	5.0892
Mammoth Cave National Park	1	857.2	334.6745	132.8420	109.6956	35.5644	1.8112	1.2929	1.3348	3.9886	1.9406	3.2054
Mammoth Cave National Park	2	2777.0	1502.3795	409.3226	262.9166	38.4489	119.3126	1.9321	0.0000	9.4475	0.5387	2.1860
Mammoth Cave National Park	3	609.9	0.0000	6.1959	139.1460	94.0551	3.6780	1.1766	5.0524	1.8634	5.6892	8.8237
Mammoth Cave National Park	4	1937.3	698.0097	216.6589	238.8359	38.6377	0.0000	28.1460	15.3093	64.4540	17.1166	12.0865
Mammoth Cave National Park	5	333.8	80.1511	14.4158	121.8993	46.9332	0.0000	1.8519	1.0551	3.2652	2.2409	5.0069
Mammoth Cave National Park	6	6497.9	2498.2984	813.4553	1121.9858	242.1201	0.0000	0.0000	6.0239	15.1083	6.0426	18.6640

I-1. UNMIX Source Apportionment Profiles, Major Constituents (continued)

Site Name	Source No.	PM <sub>2.5</sub>	Sulfate	S	OC	EC	Na	Al	Ca	Si	Fe	K
M.K. Goddard	1	1605.0	472.6669	127.2595	306.0199	170.8049	13.3297	1.5429	0.4329	4.5323	5.2671	3.4191
M.K. Goddard	2	484.5	0.0000	0.0000	214.2272	92.2718	1.5226	1.2595	0.9553	3.3099	1.1215	11.9788
M.K. Goddard	3	1299.6	765.3337	148.6821	163.5082	54.2346	3.9067	1.0766	0.0000	3.7000	1.5388	1.5245
M.K. Goddard	4	1055.6	470.8559	240.6886	283.8502	161.8913	21.7027	6.1688	2.2988	5.7736	1.8275	7.2842
M.K. Goddard	5	3441.4	1378.8317	303.8521	587.7313	204.6965	24.7306	12.1615	15.1271	38.6152	18.4402	15.4468
M.K. Goddard	6	16.3	7.3866	1.2968	1.0588	0.0000	0.0000	0.0000	0.0357	0.0249	0.0697	0.0196
Quaker City	1	4785.6	1135.0712	488.4338	489.8047	60.6336	24.1772	14.5624	5.1882	32.6639	4.7882	6.7577
Quaker City	2	7.5	0.0000	0.0000	0.0000	11.2341	0.0000	1.4472	0.0000	0.3433	4.1158	0.0769
Quaker City	3	2656.3	0.0000	391.3541	212.1145	80.7728	35.1656	0.6370	2.2985	11.2773	2.5446	5.5181
Quaker City	4	3689.8	2060.6558	506.9336	234.1104	92.7664	47.0911	1.9225	2.6776	23.1543	4.2768	6.4280
Quaker City	5	3449.9	1811.6231	348.6198	460.2463	212.6820	53.9934	6.6269	5.6623	24.6507	8.5433	9.4665
Quaker City	6	1544.6	1165.3638	202.2138	330.3413	102.2502	2.1219	16.4027	4.3391	21.7716	6.8101	13.4812
Shenandoah National Park	1	1312.5	712.8940	220.1961	16.1573	0.0000	85.4003	5.0712	1.5459	4.9951	1.5568	1.8704
Shenandoah National Park	2	350.7	168.0339	51.7295	32.4297	20.5590	0.0000	0.0000	0.0000	0.0000	0.1503	0.0000
Shenandoah National Park	3	523.6	5.8872	28.5788	154.5450	61.7750	0.3090	0.2890	2.8435	2.8911	2.8716	5.9562
Shenandoah National Park	4	6459.0	2814.1847	819.7545	1027.8890	138.9554	0.0000	0.0000	0.0000	8.8976	1.3748	9.1563
Shenandoah National Park	5	886.1	258.0092	113.8476	59.7415	23.4780	0.0000	30.9927	15.1959	69.3512	17.1673	10.6526
Shenandoah National Park	6	1794.2	767.8030	243.6781	335.4469	121.0764	0.0000	1.8883	4.9154	7.2076	6.4953	8.2660

**I-1. UNMIX Source Apportionment Profiles, Major Constituents (continued)**

Site Name	Source No.	PM <sub>2.5</sub>	Sulfate	S	OC	EC	Na	Al	Ca	Si	Fe	K
Washington, D.C.	1	1120.8	197.7255	13.6645	265.2793	185.5907	3.2993	0.7130	2.0937	1.1227	4.7900	4.2763
Washington, D.C.	2	3539.8	1580.3354	569.3987	315.5754	75.0517	135.9475	0.0000	4.7529	15.5964	6.3496	2.2428
Washington, D.C.	3	611.7	122.9356	56.7066	155.2958	52.7032	0.8019	2.1956	2.9642	2.5002	5.3981	31.4061
Washington, D.C.	4	1810.9	581.6549	221.6017	316.0870	165.6582	0.0000	0.0000	4.4944	10.5668	13.4963	4.1525
Washington, D.C.	5	4235.0	1545.3510	488.5501	687.5858	326.8316	0.0000	45.4261	16.3280	74.1127	35.5387	12.5375
Washington, D.C.	6	5094.3	1204.9962	420.2949	1056.4590	566.0403	1.7422	0.0000	11.7500	16.1254	40.6570	9.2884

I-2. UNMIX Source Apportionment Profiles, Trace Elements

Site Name	Source No.	Br	Cu	Mg	Mn	Ni	Pb	Se	Sr	Ti	V	Zn
Acadia National Park	1	0.3894	0.0113	4.8691	0.1468	0.0000	0.0000	0.0373	0.0857	0.2120	0.2673	0.0000
Acadia National Park	2	0.4697	0.0377	5.2493	0.0888	0.0000	0.3184	0.1087	0.0000	0.0034	0.1189	1.2807
Acadia National Park	3	0.1698	0.1130	0.0000	0.0792	0.0488	0.1503	0.0883	0.0000	0.6663	0.2627	0.7281
Acadia National Park	4	0.1700	0.3111	0.4784	0.0000	0.9410	0.3785	0.1039	0.0630	0.4686	1.3102	0.9831
Acadia National Park	5	0.3268	0.3929	0.0000	0.2246	0.0000	1.5183	0.0492	0.0858	0.0000	0.1670	2.1302
Acadia National Park	6	0.3533	0.0000	2.2769	0.3443	0.0000	0.1031	0.0000	0.0461	1.6290	0.4568	0.0988
Arendtsville	1	0.0000	0.0000	0.2207	0.4636	0.0777	0.0000	0.0000	0.0000	0.0000	0.4048	0.0000
Arendtsville	2	1.2481	0.5952	0.0000	0.5050	0.2493	1.1157	0.4619	0.1009	2.4146	0.9126	3.7052
Arendtsville	3	0.2747	0.0000	0.4044	0.1603	0.1035	0.0000	0.0617	0.0076	0.0000	0.2399	0.2610
Arendtsville	4	0.0662	0.2431	0.0000	0.0000	0.0893	0.2743	0.0000	0.0076	0.0000	0.2735	0.0000
Arendtsville	5	1.0668	0.9938	3.8717	0.5905	0.1023	1.8231	0.5956	0.0577	7.9769	0.7075	3.8991
Arendtsville	6	0.1615	0.5696	7.6491	0.6654	0.0000	0.7291	0.1256	0.0029	2.1917	0.0511	1.5735
Boundary Waters Canoe Area	1	0.1091	0.0050	1.3166	0.1786	0.0024	0.0381	0.0304	0.0724	0.2955	0.0804	0.3383
Boundary Waters Canoe Area	2	0.1363	0.0185	0.2736	0.0710	0.0020	0.1725	0.0371	0.0279	0.1856	0.0142	0.5717
Boundary Waters Canoe Area	3	0.4279	0.0000	1.9864	0.0805	0.0215	0.2168	0.0191	0.0475	0.5287	0.2761	0.2249
Boundary Waters Canoe Area	4	0.1445	0.4884	2.1512	0.0493	0.0279	0.5733	0.0563	0.0061	0.0269	0.0085	1.2543
Boundary Waters Canoe Area	5	0.2377	0.0000	1.3342	0.4524	0.0044	0.2343	0.0265	0.0601	1.1361	0.1783	0.2533
Boundary Waters Canoe Area	6	0.1800	0.0039	0.8110	0.0497	0.0150	0.1158	0.0631	0.0153	0.3399	0.2063	0.5529

I-2. UNMIX Source Apportionment Profiles, Trace Elements (continued)

Site Name	Source No.	Br	Cu	Mg	Mn	Ni	Pb	Se	Sr	Ti	V	Zn
Brigantine National Wildlife Refuge	1	0.6416	0.0000	15.4254	0.0372	0.1229	0.0000	0.0546	0.1489	0.0000	0.7599	0.0000
Brigantine National Wildlife Refuge	2	0.6940	0.0633	1.4795	0.2164	0.3112	0.0000	0.2418	0.0213	0.5337	0.9714	0.8680
Brigantine National Wildlife Refuge	3	0.4663	0.0797	0.0000	0.4407	0.0685	2.7277	0.2560	0.0196	0.0000	0.2604	3.7599
Brigantine National Wildlife Refuge	4	0.8398	0.2364	0.0000	0.0743	0.4299	0.5718	0.4592	0.0353	2.9517	0.5683	1.7543
Brigantine National Wildlife Refuge	5	0.1865	0.0265	4.6313	0.3851	0.0000	0.0000	0.0444	0.0689	2.1351	0.3484	0.2109
Brigantine National Wildlife Refuge	6	0.5203	1.1958	1.0478	0.1771	0.7592	1.0906	0.1105	0.0014	0.3383	0.6862	3.5527
Bondville	1	0.1937	0.2522	0.5249	0.4638	0.0191	0.4139	0.0878	0.0000	0.5372	0.5371	1.5006
Bondville	2	0.0000	0.0000	0.0664	0.1473	0.0000	0.0079	0.0455	0.0257	1.1027	0.0000	0.0000
Bondville	3	0.0633	0.0274	0.7124	0.0677	0.0167	0.1601	0.0305	0.0106	0.1705	0.0673	0.7097
Bondville	4	0.3753	0.1157	3.1407	0.2885	0.0447	0.3401	0.0655	0.0819	0.1615	0.1421	1.0145
Bondville	5	0.3894	0.2455	7.0608	0.3547	0.1510	0.7829	0.2967	0.1999	0.9091	0.2485	1.4853
Bondville	6	1.3159	0.6449	2.8788	0.6882	0.0636	2.3796	0.7780	0.0323	1.4682	0.2250	5.1887
Connecticut Hill	1	2.1534	0.8700	13.0182	2.6751	0.2333	2.2155	1.0117	0.1475	6.1865	2.7282	4.4850
Connecticut Hill	2	0.1271	0.0960	0.3721	0.2986	0.1142	0.5658	0.0755	0.0207	1.7656	0.2993	0.7165
Connecticut Hill	3	0.0000	0.0135	0.0000	0.3129	0.0108	0.1783	0.0000	0.0152	0.3892	0.6127	0.0000
Connecticut Hill	4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0008	0.0000	0.1599	0.0000
Connecticut Hill	5	0.6225	0.3254	3.9299	0.0000	0.0159	0.4018	0.3979	0.0000	0.3473	0.0000	2.2591
Connecticut Hill	6	0.3941	0.1301	0.0000	0.0044	0.1075	0.5755	0.2236	0.0125	0.1713	0.2614	1.1145
Dolly Sods Wilderness Area	1	0.2473	0.0409	0.8429	0.0000	0.0265	0.0000	0.0000	0.0230	0.4111	0.0381	0.0376
Dolly Sods Wilderness Area	2	0.4111	0.1546	1.3021	0.3434	0.0518	0.2694	0.1369	0.0205	0.2315	0.1050	0.8791
Dolly Sods Wilderness Area	3	0.0000	0.1379	0.0000	0.3968	0.0169	0.4043	0.4451	0.0051	3.7621	0.1251	0.6416
Dolly Sods Wilderness Area	4	0.8290	0.0917	0.6346	0.0952	0.0154	0.0892	0.2477	0.0170	0.0000	0.2856	0.9140
Dolly Sods Wilderness Area	5	0.6951	0.3374	1.3252	0.6281	0.0452	1.7538	0.6626	0.0325	0.1197	0.4423	3.5948
Dolly Sods Wilderness Area	6	0.4211	0.0499	3.3285	0.3275	0.0000	0.1898	0.0490	0.0974	1.8248	0.1678	0.4648

I-2. UNMIX Source Apportionment Profiles, Trace Elements (continued)

Site Name	Source No.	Br	Cu	Mg	Mn	Ni	Pb	Se	Sr	Ti	V	Zn
Great Smoky Mountains National Park	1	0.4773	0.0178	0.7268	0.1341	0.0163	0.1332	0.1512	0.0287	0.9445	0.2968	0.4578
Great Smoky Mountains National Park	2	0.3547	0.1845	0.7986	0.1206	0.0223	0.3751	0.1046	0.0263	0.0000	0.0821	0.9073
Great Smoky Mountains National Park	3	0.0536	0.0000	0.0000	0.0571	0.0068	0.0486	0.0820	0.0075	1.2009	0.0306	0.0000
Great Smoky Mountains National Park	4	0.5208	0.1470	1.0655	0.3068	0.0332	1.6280	0.2711	0.0378	0.2935	0.2177	3.5223
Great Smoky Mountains National Park	5	0.2753	0.0353	2.1775	0.3207	0.0037	0.0562	0.0496	0.1153	3.0592	0.1730	0.1362
Great Smoky Mountains National Park	6	0.5057	0.9470	1.6241	0.2001	0.0447	0.3829	0.2531	0.0245	1.3114	0.1002	1.8090
Jefferson/James River Face Wilderness Area	1	0.5621	0.0000	0.0000	0.0415	0.0548	0.1236	0.2540	0.0348	0.4777	0.4021	1.2619
Jefferson/James River Face Wilderness Area	2	0.4956	0.3499	0.5131	0.2264	0.1476	0.1691	0.1428	0.0000	0.0000	0.3483	1.7134
Jefferson/James River Face Wilderness Area	3	0.0982	0.1111	0.0000	0.3272	0.0097	0.1314	0.0515	0.0951	2.8473	0.0000	0.2767
Jefferson/James River Face Wilderness Area	4	0.5930	0.4113	0.7701	0.2882	0.0251	2.2980	0.2557	0.0634	0.5702	0.1995	1.4656
Jefferson/James River Face Wilderness Area	5	0.5763	0.2260	20.3758	0.5716	0.0000	0.3801	0.1962	0.0644	0.4970	0.4773	1.0154
Jefferson/James River Face Wilderness Area	6	0.8387	0.2738	0.9967	0.2860	0.0668	0.3656	0.4940	0.0604	2.1897	0.5449	3.5216
Livonia	1	0.3201	0.0000	0.3530	0.0000	0.0158	0.0000	0.2193	0.0000	0.5556	0.0000	0.0000
Livonia	2	0.2495	0.3072	1.5735	0.1461	0.0167	0.5697	0.2187	0.0181	0.7284	0.2282	1.1942
Livonia	3	0.3275	0.2565	0.7747	0.3978	0.0311	0.6802	0.1780	0.0337	0.8048	0.1717	1.7179
Livonia	4	1.1301	0.5205	6.8711	0.8108	0.1020	0.8871	0.5597	0.0349	1.4511	0.3855	3.1288
Livonia	5	0.1152	0.0229	0.3276	0.2796	0.0086	0.2493	0.0000	0.0219	0.7012	0.4359	0.5836
Livonia	6	0.5063	0.3763	2.7226	0.5336	0.0373	0.6928	0.5461	0.0606	1.5756	0.6335	2.1362

I-2. UNMIX Source Apportionment Profiles, Trace Elements (continued)

Site Name	Source No.	Br	Cu	Mg	Mn	Ni	Pb	Se	Sr	Ti	V	Zn
Lye Brook Wilderness Area	1	0.2554	0.1157	0.0000	0.0559	0.5325	0.1553	0.0802	0.0154	0.3372	0.5668	0.3763
Lye Brook Wilderness Area	2	0.1401	0.0168	0.5826	0.0000	0.0028	0.0000	0.0000	0.0127	0.2331	0.1137	0.1448
Lye Brook Wilderness Area	3	0.0390	0.0124	6.8337	0.0281	0.0010	0.0491	0.0072	0.0084	0.0881	0.1334	0.0065
Lye Brook Wilderness Area	4	0.4634	0.0286	0.5797	0.4810	0.0000	0.3121	0.0308	0.0580	1.5875	0.3380	0.6254
Lye Brook Wilderness Area	5	0.5656	0.2969	0.4416	0.2967	0.0000	1.0035	0.2487	0.0202	0.1840	0.1776	2.2829
Lye Brook Wilderness Area	6	0.2921	0.2380	0.0716	0.2324	0.0057	0.7482	0.2122	0.0316	1.4457	0.1053	1.5232
Mammoth Cave National Park	1	0.2994	0.0527	1.6198	0.1957	0.1048	0.2513	0.1869	0.0201	0.2287	0.1438	0.8102
Mammoth Cave National Park	2	0.3980	0.0327	0.0000	0.0000	0.0059	0.0000	0.0000	0.0175	0.4073	0.0814	0.0000
Mammoth Cave National Park	3	0.6120	0.0000	1.0659	0.3588	0.0054	1.0101	0.3214	0.0368	0.0320	0.2262	2.6440
Mammoth Cave National Park	4	0.3195	0.0322	2.9296	0.4287	0.0046	0.2815	0.1153	0.1155	2.7847	0.3194	0.6262
Mammoth Cave National Park	5	0.1060	1.1602	0.4137	0.1045	0.0007	0.3184	0.1056	0.0156	0.2606	0.0000	1.7400
Mammoth Cave National Park	6	1.0243	0.1177	2.1035	0.6212	0.0118	1.7108	0.6783	0.0382	2.7471	0.4472	4.0375
M.K. Goddard	1	0.5613	0.4245	1.4630	0.7717	0.1540	0.8213	0.3322	0.0000	0.5420	0.6192	2.8546
M.K. Goddard	2	0.0993	0.0584	0.0608	0.0950	0.0038	0.8264	0.0000	0.0000	0.0977	0.0495	1.1076
M.K. Goddard	3	0.2306	0.1015	0.8070	0.1678	0.0166	0.3981	0.0908	0.0004	0.4084	0.1828	0.8501
M.K. Goddard	4	0.5447	0.3824	8.0184	0.4237	0.0921	0.3715	0.2978	0.1141	0.5450	0.4595	1.4445
M.K. Goddard	5	0.8990	0.5495	4.1217	1.0491	0.0950	1.6413	0.3803	0.0833	2.2810	0.4923	4.3206
M.K. Goddard	6	0.0032	0.0000	0.0084	0.0005	0.0011	0.0080	0.0077	0.0012	0.0000	0.0000	0.0142

I-2. UNMIX Source Apportionment Profiles, Trace Elements (continued)

Site Name	Source No.	Br	Cu	Mg	Mn	Ni	Pb	Se	Sr	Ti	V	Zn
Quaker City	1	0.4460	0.0431	2.6940	1.0199	0.0181	0.2339	0.4538	0.0350	3.2933	0.1611	0.4144
Quaker City	2	0.0000	0.2108	0.0000	0.0000	0.0681	0.1716	0.0000	0.0000	0.0000	0.2117	0.8439
Quaker City	3	0.3737	0.3049	5.4709	0.2694	0.0862	0.9194	0.3885	0.0361	1.8079	0.5935	2.4144
Quaker City	4	0.4265	0.3284	3.7291	0.9467	0.0450	0.8479	0.4098	0.0354	2.6822	0.3479	2.1843
Quaker City	5	0.6412	0.4704	0.1582	1.5401	0.0289	1.9778	0.4417	0.0315	1.7947	0.5571	4.4973
Quaker City	6	1.1831	0.4623	4.8647	1.7609	0.1899	0.9049	0.6173	0.0556	1.2163	0.7249	2.7502
Shenandoah National Park	1	0.3037	0.0489	1.8848	0.1297	0.0020	0.0390	0.1334	0.0214	1.0013	0.2297	0.2082
Shenandoah National Park	2	0.0708	0.0604	0.4486	0.0000	0.2200	0.1304	0.0010	0.0024	0.1894	0.1497	0.1548
Shenandoah National Park	3	0.5249	0.0536	1.6331	0.2346	0.0046	0.4566	0.1913	0.0360	0.0000	0.2181	1.3301
Shenandoah National Park	4	0.4035	0.1984	0.0000	0.1514	0.0055	0.3739	0.3063	0.0304	1.6838	0.0000	1.1303
Shenandoah National Park	5	0.3266	0.0000	1.5912	0.4240	0.0026	0.2433	0.0639	0.0914	2.5096	0.2619	0.6068
Shenandoah National Park	6	0.6557	0.6580	0.8880	0.3374	0.0135	1.3664	0.3156	0.0502	0.3166	0.1124	2.9462
Washington, D.C.	1	0.6718	0.2886	0.7455	0.1354	1.9405	0.5350	0.1533	0.0000	0.0000	2.3724	2.7214
Washington, D.C.	2	0.8446	0.2103	1.4564	0.0665	0.0000	0.1128	0.3999	0.0000	1.2201	0.1452	1.0083
Washington, D.C.	3	0.1723	0.4261	1.9838	0.0507	0.0000	0.2976	0.0764	0.7213	0.5207	0.3186	0.6701
Washington, D.C.	4	0.4992	0.4008	0.7533	0.2350	0.0000	4.3502	0.2322	0.0512	0.5830	0.1822	2.7778
Washington, D.C.	5	0.7318	0.7807	2.1148	0.7369	0.0000	0.7701	0.4263	0.3166	4.3866	0.2235	2.6847
Washington, D.C.	6	1.7011	1.7087	1.9186	0.7677	0.0000	0.7412	0.7467	0.2806	1.9684	0.9287	6.1991

### I-3. PMF Source Apportionment Profiles, Major Constituents

Site Name	Source No.	PM <sub>2.5</sub>	Sulfate	S	OC	EC	Na	Al	Ca	Si	Fe	K
Acadia National Park	1	63.1	0.1801	30.1050	0.0492	0.0930	0.0125	0.0012	3.5174	0.0009	0.6079	0.0101
Acadia National Park	2	9.5	0.4646	0.4491	0.1444	6.3400	0.0114	0.0010	0.0006	0.0008	0.0010	0.0021
Acadia National Park	3	392.5	0.1468	0.1968	0.0279	0.0246	163.1300	0.0012	3.0533	0.0017	0.0003	0.0029
Acadia National Park	4	72.7	19.3160	0.0527	0.0970	0.0372	0.0106	14.2500	3.5687	25.3380	7.6738	0.0045
Acadia National Park	5	2262.5	1903.2000	563.2300	0.0869	30.4570	6.3348	0.0005	0.0002	4.4850	0.3445	1.9122
Acadia National Park	6	3936.4	0.2038	26.0790	898.6500	82.0030	0.0339	0.0005	0.0003	0.0029	0.2003	0.0092
Acadia National Park	7	341.4	101.8300	48.3640	166.2800	43.0750	0.0142	0.7334	1.3455	0.0016	0.0002	26.5770
Acadia National Park	8	399.3	219.8300	55.6960	56.5000	110.8900	0.0475	0.8417	0.0004	0.0004	2.6427	2.9895
Acadia National Park	9	37.8	1.3421	3.6453	0.1090	6.2270	0.0099	0.0002	4.2804	17.0280	6.1562	0.0037
Arendtsville	1	13940.0	1.4957	0.9819	0.4519	98.5430	0.0163	0.0055	0.0051	0.0070	0.0308	1.8990
Arendtsville	2	58.3	1.5546	0.3621	0.3007	46.7810	0.0158	0.0019	2.5216	0.0032	0.4985	1.4942
Arendtsville	3	40.6	2.0309	60.9086	0.4901	0.0901	20.9670	0.0044	0.3419	9.1923	0.0019	0.0066
Arendtsville	4	111.0	1.2625	0.2539	0.3600	8.1424	0.0300	13.0860	16.8610	43.9780	13.9270	11.4820
Arendtsville	5	13.4	0.9716	0.3436	0.3244	0.1046	0.0111	0.0019	1.3772	0.0056	6.1076	0.0043
Arendtsville	6	60.0	1.3990	0.3053	0.3633	28.0240	8.7404	0.8946	0.0030	0.0042	0.0517	14.4120
Arendtsville	7	36.5	1.3810	0.3789	0.3486	18.9840	0.0836	0.4727	0.0449	0.0024	8.3806	0.0059
Arendtsville	8	6215.7	6210.7000	0.4121	0.4588	0.1474	0.0110	0.0042	0.0023	2.5576	1.1603	0.0035
Arendtsville	9	2019.3	1.3978	0.3431	1966.1000	47.1280	0.0132	0.0036	0.2219	0.0036	0.4050	3.7613

I-3. PMF Source Apportionment Profiles, Major Constituents (continued)

Site Name	Source No.	PM <sub>2.5</sub>	Sulfate	S	OC	EC	Na	Al	Ca	Si	Fe	K
Boundary Waters Canoe Area	1	183.6	0.4494	4.5622	140.6300	11.9360	0.0151	0.0015	0.0017	0.8243	0.0039	29.5270
Boundary Waters Canoe Area	2	54.2	0.1032	0.8908	0.1523	0.0575	0.0033	16.7980	0.0023	24.3610	0.0054	0.0037
Boundary Waters Canoe Area	3	10.3	5.9234	0.0773	0.8844	0.0388	0.8846	0.6471	0.3694	0.0017	0.0055	0.0022
Boundary Waters Canoe Area	4	2188.4	0.1244	5.4910	896.5900	87.9100	0.0033	0.0020	0.0022	0.0092	0.0039	0.0033
Boundary Waters Canoe Area	5	199.7	0.3527	0.0397	0.0644	11.0670	0.0020	0.0011	0.0015	4.8255	35.6100	0.0031
Boundary Waters Canoe Area	6	53.2	0.1101	6.1298	0.1103	0.1232	37.6320	0.7681	2.8989	0.0020	0.0050	0.0041
Boundary Waters Canoe Area	7	2354.0	1419.3000	442.4700	0.1099	15.2470	6.8705	0.0017	0.0019	3.5153	0.0050	0.0043
Boundary Waters Canoe Area	8	231.1	0.1050	0.3881	0.0824	43.1380	4.1872	0.0049	0.0218	0.0019	0.0049	0.0034
Boundary Waters Canoe Area	9	148.9	0.0926	1.5390	0.0730	0.4037	0.0037	0.0012	17.9030	22.1330	0.0031	0.0033
Brigantine National Wildlife Refuge	1	330.4	10.3580	63.3160	0.0695	0.2146	0.0097	0.0007	0.0829	0.0046	0.2993	0.0041
Brigantine National Wildlife Refuge	2	651.2	353.0500	45.1650	99.2240	175.2500	0.0119	0.0014	1.8625	0.0016	10.5990	1.3750
Brigantine National Wildlife Refuge	3	2713.0	0.3027	63.1430	735.8100	129.1400	0.0055	0.0004	8.5061	17.2740	4.0955	18.5080
Brigantine National Wildlife Refuge	4	618.7	13.4180	6.6553	183.9100	88.7280	0.0116	0.7788	0.0012	0.0009	0.0651	3.5989
Brigantine National Wildlife Refuge	5	662.6	167.2100	74.6060	0.0127	0.0180	265.1400	0.0005	7.4523	0.9601	0.0603	7.1239
Brigantine National Wildlife Refuge	6	769.4	0.6094	33.6990	231.8900	50.0580	0.0139	1.7685	0.0008	0.0017	4.6432	7.3977
Brigantine National Wildlife Refuge	7	5704.1	3427.5000	987.9000	464.4200	83.7200	20.4440	0.0023	0.0006	15.7580	2.3316	0.0019
Brigantine National Wildlife Refuge	8	7.5	2.0116	11.2212	0.0928	0.0833	0.0081	0.0014	0.6766	0.0015	0.0089	0.2163
Brigantine National Wildlife Refuge	9	112.4	1.0207	1.8957	0.0466	0.0458	0.0091	27.4470	8.2906	49.0960	13.5210	4.4806

I-3. PMF Source Apportionment Profiles, Major Constituents (continued)

Site Name	Source No.	PM <sub>2.5</sub>	Sulfate	S	OC	EC	Na	Al	Ca	Si	Fe	K
Bondville	1	829.0	0.6924	0.1748	736.3400	63.0030	3.5997	0.0008	0.0043	4.4860	0.9137	18.7220
Bondville	2	6980.8	0.8987	0.2747	6.2212	0.1228	0.2210	0.0011	0.0048	0.0353	0.0039	0.0025
Bondville	3	5228.2	4723.9000	0.2615	499.0800	0.5538	0.0210	0.0015	0.0053	3.3877	0.8772	0.0059
Bondville	4	970.7	0.5584	0.1041	68.3130	0.5040	0.0607	0.0010	26.9960	7.8628	0.0183	0.7714
Bondville	5	272.3	0.7909	0.6124	195.0400	73.9480	0.0595	0.0012	0.0049	0.2833	0.0144	0.0023
Bondville	6	4077.0	1.3520	1063.8000	5.9818	48.3140	17.6260	0.0015	0.0056	0.1527	2.0474	5.3254
Bondville	7	133.5	101.0800	0.2529	0.1158	27.3060	0.0625	0.0016	0.0082	0.0035	0.0098	0.0088
Bondville	8	102.3	0.6828	0.1297	1.3229	4.4979	0.4078	17.9370	0.0041	48.2090	14.7160	4.5632
Bondville	9	133.0	103.4400	0.2456	0.0971	0.3809	3.0167	0.0012	0.0113	0.0027	13.3840	3.9763
Connecticut Hill	1	11722.0	5.1588	0.6303	0.3493	103.8000	0.0247	0.0110	0.0053	0.0082	0.0046	2.6694
Connecticut Hill	2	86.4	2.2610	0.1879	0.2954	52.5040	9.4593	0.0040	0.0083	0.0078	9.5388	2.3575
Connecticut Hill	3	1513.0	3.4505	0.1903	1505.3000	0.4605	0.0214	0.0068	0.0100	0.0036	0.3469	3.3188
Connecticut Hill	4	9.9	1.4782	0.1574	0.1911	0.3800	0.0398	0.0220	0.0016	0.0057	0.5877	4.7003
Connecticut Hill	5	34.6	3.5550	51.9395	0.4188	0.0935	15.1950	4.0746	2.8260	0.0053	2.5233	0.0026
Connecticut Hill	6	4.5	0.7650	6.7465	0.1963	0.0978	0.0108	0.0046	0.0010	0.6234	0.0064	0.8400
Connecticut Hill	7	5534.3	5516.8000	0.4850	0.5408	0.0890	0.0139	0.0162	0.0025	13.9570	1.7520	0.0015
Connecticut Hill	8	12.5	0.9271	0.1394	0.1948	0.2774	0.0370	0.0074	2.7681	0.0098	0.0016	4.9504
Connecticut Hill	9	84.3	1.2806	0.3485	0.2281	10.9750	0.0161	6.8187	12.0650	33.9210	9.0717	7.8007

I-3. PMF Source Apportionment Profiles, Major Constituents (continued)

Site Name	Source No.	PM <sub>2.5</sub>	Sulfate	S	OC	EC	Na	Al	Ca	Si	Fe	K
Dolly Sods Wilderness Area	1	638.0	0.0605	54.5470	0.1349	0.0960	2.9015	3.0215	13.9140	55.8170	11.2830	4.7324
Dolly Sods Wilderness Area	2	4141.7	111.0200	0.0402	1221.9000	133.9900	0.0088	0.0010	0.0012	0.0045	0.5275	0.0148
Dolly Sods Wilderness Area	3	379.8	132.2600	20.1780	154.0600	75.4490	0.0119	0.0590	0.9933	0.0026	8.6922	0.0035
Dolly Sods Wilderness Area	4	5041.9	3275.2000	1036.8000	0.1822	0.2755	0.0065	0.0005	0.0014	4.9307	0.0015	0.0046
Dolly Sods Wilderness Area	5	225.9	0.1652	69.1820	0.1690	52.8730	0.0131	0.0071	6.1563	0.0044	0.0012	0.0092
Dolly Sods Wilderness Area	6	1162.7	709.1400	149.5700	0.1190	3.9859	95.6300	0.0008	0.0005	9.9851	1.1350	0.0044
Dolly Sods Wilderness Area	7	157.7	116.3900	0.0100	0.1089	0.0301	0.0071	24.6670	0.0059	6.7218	4.1650	2.3750
Dolly Sods Wilderness Area	8	729.3	195.4900	131.2400	418.1500	83.3290	0.0092	0.0062	1.5176	0.1708	0.0006	29.3360
Dolly Sods Wilderness Area	9	192.5	0.1768	3.1336	0.1095	28.5270	0.0097	0.0011	0.0006	4.8450	0.0796	0.0092
Great Smoky Mountains National Park	1	155.5	0.3627	81.0390	0.3092	38.3950	0.0090	0.0031	3.0014	0.0026	2.4467	0.0010
Great Smoky Mountains National Park	2	73.8	0.1827	1.3296	27.9710	0.0240	0.0061	34.3670	0.0004	2.2212	2.4868	3.8086
Great Smoky Mountains National Park	3	4416.4	4146.8000	1185.9000	0.5570	0.0963	0.0187	0.0019	0.0003	15.3550	0.0013	5.7025
Great Smoky Mountains National Park	4	391.9	344.5500	9.4961	3.1524	40.3790	0.0077	0.3641	0.0011	0.0017	2.0513	0.0080
Great Smoky Mountains National Park	5	556.5	0.6778	0.0509	16.6100	0.0252	0.0112	0.0025	11.4140	74.8240	17.1610	2.3622
Great Smoky Mountains National Park	6	6628.5	0.7110	93.2180	1465.5000	137.2200	0.0107	0.0028	0.0003	9.0942	3.3784	0.0263
Great Smoky Mountains National Park	7	177.5	24.1490	0.1132	0.1975	0.0281	95.5250	0.0032	0.0011	0.0038	0.0016	0.0006
Great Smoky Mountains National Park	8	328.0	219.0700	91.0050	0.1637	74.1610	0.0080	0.9551	1.3296	0.0019	1.3611	0.0066
Great Smoky Mountains National Park	9	707.8	62.4200	74.6880	463.0700	132.7100	0.0105	0.3242	8.7762	0.0026	0.0822	35.2950

I-3. PMF Source Apportionment Profiles, Major Constituents (continued)

Site Name	Source No.	PM <sub>2.5</sub>	Sulfate	S	OC	EC	Na	Al	Ca	Si	Fe	K
Jefferson/James River Face Wilderness Area	1	287.4	169.9600	46.5080	0.3890	51.8950	0.0018	0.0007	34.1950	6.3123	4.5954	0.0099
Jefferson/James River Face Wilderness Area	2	6909.8	3945.8000	1301.4000	512.3000	22.5530	32.2980	0.0015	0.2448	20.3160	0.0016	0.0050
Jefferson/James River Face Wilderness Area	3	405.0	263.9000	80.8860	0.0905	114.7400	0.0803	0.0009	0.0015	2.7249	6.8689	12.8300
Jefferson/James River Face Wilderness Area	4	509.7	152.3600	56.0250	0.0617	31.8120	3.2898	35.7380	9.2416	64.1550	22.0020	12.7830
Jefferson/James River Face Wilderness Area	5	2163.9	0.3820	19.2490	1265.2000	280.8500	0.0045	0.0015	0.0041	5.9868	0.0008	55.8250
Jefferson/James River Face Wilderness Area	6	267.5	30.4590	0.4733	0.1184	0.2537	5.5376	0.0075	0.7058	0.0026	0.0017	1.8631
Jefferson/James River Face Wilderness Area	7	474.1	118.5200	45.3350	0.2242	0.1908	62.6150	2.8472	0.0033	0.0020	0.0036	0.0287
Jefferson/James River Face Wilderness Area	8	3563.1	0.7070	45.2090	1145.2000	228.5100	0.0141	0.0008	0.0645	3.9395	16.1640	0.0056
Jefferson/James River Face Wilderness Area	9	138.2	30.7930	0.1373	74.1780	27.1310	0.0081	1.2947	0.0008	0.0038	2.0364	0.0043
Livonia	1	1867.4	3.5114	0.0947	0.3893	0.1620	0.0773	0.0022	0.0071	0.0150	7.0659	0.0047
Livonia	2	228.4	1.7118	0.1303	0.3066	8.1165	0.0147	0.0025	0.0063	0.0159	5.3736	0.0027
Livonia	3	6259.6	6253.7000	366.6100	1.4540	0.2994	0.0154	0.0028	0.0071	3.8038	0.0093	0.0018
Livonia	4	463.2	3.2806	0.0745	0.2018	0.1423	0.1409	15.4870	0.0056	44.1250	13.1380	6.7565
Livonia	5	7330.5	1.4216	714.5300	0.2587	9.6361	17.8200	0.0018	0.0065	2.8305	0.0068	1.5064
Livonia	6	29.4	0.7773	38.1100	0.3745	0.3343	8.7576	0.0012	0.0045	2.5141	0.2534	14.5670
Livonia	7	3776.5	2.8943	0.1354	1647.7000	147.4100	0.0198	0.0016	0.0066	7.9356	2.2917	6.5246
Livonia	8	47.8	0.9196	71.6940	0.5258	37.6090	0.0426	0.0034	0.0047	0.0364	0.0021	5.0964
Livonia	9	141.8	0.6922	29.4590	105.5700	0.1082	0.0408	0.0028	33.0850	0.0073	0.2762	1.9857

I-3. PMF Source Apportionment Profiles, Major Constituents (continued)

Site Name	Source No.	PM <sub>2.5</sub>	Sulfate	S	OC	EC	Na	Al	Ca	Si	Fe	K
Lye Brook Wilderness Area	1	359.9	63.9000	36.6430	0.0950	40.8680	0.0018	0.0015	0.0008	0.0034	2.9810	2.3892
Lye Brook Wilderness Area	2	457.0	318.5400	47.9380	72.3980	56.1300	0.0221	0.3046	0.6507	0.0013	3.2202	2.7943
Lye Brook Wilderness Area	3	134.3	45.2150	27.2120	26.6970	7.5692	0.0016	0.0044	10.3140	29.1790	7.6931	5.5259
Lye Brook Wilderness Area	4	190.0	0.2626	37.6210	0.0608	3.6839	0.0062	0.0028	0.0013	0.0046	0.0009	0.3892
Lye Brook Wilderness Area	5	2421.6	0.2247	31.5260	593.9800	51.7420	0.0029	0.0076	1.8830	2.3398	0.0004	6.0724
Lye Brook Wilderness Area	6	3197.1	1811.0000	553.5600	236.9700	46.1170	18.4300	0.0012	0.0005	8.5490	1.0545	0.0014
Lye Brook Wilderness Area	7	367.3	86.5570	0.0174	6.7071	0.2785	3.1210	15.1500	0.0011	10.3810	4.1778	0.0010
Lye Brook Wilderness Area	8	376.4	0.1477	14.4940	126.7100	36.7170	0.0166	0.0012	0.0005	1.6278	0.5191	0.0007
Lye Brook Wilderness Area	9	70.8	0.4522	15.1700	0.1250	5.4010	42.4710	2.4915	3.5694	1.5330	0.0003	7.3068
Mammoth Cave National Park	1	525.3	0.5548	0.0644	28.8170	0.0906	0.0139	28.7740	0.0024	44.7940	12.1440	3.7753
Mammoth Cave National Park	2	62.8	1.0848	0.0411	16.9900	26.4440	6.8674	0.0024	0.0029	0.1209	0.5115	2.0712
Mammoth Cave National Park	3	2997.5	325.9000	0.0458	1160.6000	227.9600	0.0017	0.0015	0.0030	3.8286	0.0052	30.7700
Mammoth Cave National Park	4	227.2	154.9000	45.3490	0.1384	4.2027	0.0024	0.0009	23.6690	24.2600	6.2175	7.8051
Mammoth Cave National Park	5	4931.7	4308.5000	367.9400	513.1100	77.4340	28.6350	0.0020	0.0744	0.0027	0.5393	0.0225
Mammoth Cave National Park	6	330.9	0.4884	128.0500	0.0727	8.1817	69.1880	0.3729	4.9078	0.0015	0.0560	0.1796
Mammoth Cave National Park	7	141.9	56.4740	7.5899	0.1468	64.2100	0.0022	0.0015	0.0017	0.6542	7.4463	3.7303
Mammoth Cave National Park	8	6099.6	0.5431	882.4400	268.3200	33.5110	7.0921	0.0009	0.0022	23.0300	2.1237	0.2537
Mammoth Cave National Park	9	685.7	111.6500	173.7600	0.0912	38.2930	0.0019	4.5927	0.9335	0.0016	4.0415	1.0219

I-3. PMF Source Apportionment Profiles, Major Constituents (continued)

Site Name	Source No.	PM <sub>2.5</sub>	Sulfate	S	OC	EC	Na	Al	Ca	Si	Fe	K
M.K. Goddard	1	6.6	1.0632	9.8886	0.8985	0.0694	1.3669	0.0022	0.0024	0.0041	0.0500	0.0483
M.K. Goddard	2	368.5	69.5270	0.0451	0.1818	0.1512	1.1070	0.0016	3.7607	0.0034	17.6720	0.0090
M.K. Goddard	3	437.1	147.9300	0.1030	59.5670	182.7100	1.4305	1.3588	1.6366	3.8821	0.0008	35.4410
M.K. Goddard	4	5785.6	5698.5000	146.5900	0.5258	68.9000	0.0122	0.0012	0.0011	12.6350	4.5543	0.0199
M.K. Goddard	5	13.9	2.7165	0.1255	0.4441	0.0652	2.6265	0.0024	0.0046	0.0056	0.3810	2.6319
M.K. Goddard	6	4213.4	2.2969	0.0606	1917.8000	0.2600	0.0392	0.0016	0.0016	0.0090	5.3691	0.0455
M.K. Goddard	7	8123.6	5.9937	913.3300	0.6335	0.3299	17.0110	0.0030	2.5648	0.0080	0.0026	0.0109
M.K. Goddard	8	207.6	0.9760	5.7841	81.9250	10.6840	0.8972	12.8700	19.2970	52.9950	17.7760	6.6274
M.K. Goddard	9	317.7	2.1382	0.0406	0.2329	56.2340	0.0954	0.0029	0.0015	0.0126	0.0356	0.0564
Quaker City	1	55.3	1.7629	82.9996	0.4899	33.3450	0.3264	0.3517	0.0026	0.0254	9.6570	0.1612
Quaker City	2	881.9	1.3148	0.1329	0.3873	0.2846	0.0942	2.4862	0.0033	62.5590	0.0082	2.7237
Quaker City	3	7890.6	2.0859	1010.7000	0.4624	15.2210	12.3230	0.4750	0.0028	0.0893	0.3598	0.0960
Quaker City	4	1956.4	1.9257	0.2688	1781.7000	160.8700	3.1355	0.0031	2.7234	0.0224	0.0046	4.3920
Quaker City	5	1224.0	1.6030	0.1082	0.3756	0.3492	9.3007	1.3830	0.1286	0.0299	0.0025	9.4270
Quaker City	6	2105.6	1.1295	0.1748	0.4189	0.0870	0.0849	0.0048	0.0022	0.0120	0.7304	5.3454
Quaker City	7	25.1	1.1355	37.6581	0.4639	14.7750	0.0180	0.0066	0.0023	0.0183	0.6312	2.9942
Quaker City	8	36.5	1.2573	45.5180	0.3441	0.1727	1.6494	5.7415	12.0500	0.0464	10.6850	3.1391
Quaker City	9	6290.9	6288.7000	2.0253	0.9559	0.1215	0.0554	0.0102	0.0039	0.0293	0.0155	0.0086

I-3. PMF Source Apportionment Profiles, Major Constituents (continued)

Site Name	Source No.	PM <sub>2.5</sub>	Sulfate	S	OC	EC	Na	Al	Ca	Si	Fe	K
Shenandoah National Park	1	176.5	0.0997	18.4180	0.0463	0.8916	0.0343	0.0040	9.6805	68.5720	11.8880	3.0289
Shenandoah National Park	2	328.2	0.2176	0.8861	0.2160	0.0445	86.7400	0.0025	0.0002	2.9667	0.2205	0.0005
Shenandoah National Park	3	64.0	24.0920	0.1092	0.0793	0.0386	0.0079	31.1990	0.0008	0.1206	4.4070	2.2018
Shenandoah National Park	4	4470.6	4113.4000	1173.9000	0.7424	8.8576	0.0110	0.0077	0.0002	0.0437	0.0033	0.0004
Shenandoah National Park	5	613.6	388.3500	119.6100	94.1450	89.8210	0.0116	0.0032	12.5150	0.0023	3.5412	18.8080
Shenandoah National Park	6	60.5	0.1336	90.7290	0.0521	23.8440	0.0067	0.0037	0.0003	6.2874	0.0012	0.0014
Shenandoah National Park	7	2866.1	0.2201	50.3720	956.3400	111.9300	0.0065	0.0030	0.0002	14.1160	0.3946	11.8220
Shenandoah National Park	8	2142.7	0.1242	11.9920	323.7100	13.7140	0.0093	0.0033	0.5910	0.0025	0.2863	0.0003
Shenandoah National Park	9	1079.0	95.9010	0.0466	224.5100	104.4100	0.0093	0.0073	0.0016	0.0019	8.3890	0.0005
Washington D.C.	1	289.1	196.2300	50.3040	0.0750	75.8160	7.5291	0.4463	0.0505	0.0027	2.1892	1.9997
Washington D.C.	2	935.0	721.1900	201.1300	0.1158	193.0800	0.0015	0.5090	1.5965	0.0070	0.0157	0.2134
Washington D.C.	3	278.3	184.9800	73.1990	49.0030	0.0523	0.0059	0.5099	1.2015	0.0005	0.0021	39.1040
Washington D.C.	4	7543.2	4181.3000	1410.5000	529.6000	139.1200	43.4140	0.0015	0.0016	25.3200	2.4646	0.0035
Washington D.C.	5	588.4	9.9674	19.7070	157.5800	330.4700	0.0044	0.0028	7.1180	0.0036	70.8290	0.0030
Washington D.C.	6	311.4	0.0593	32.2500	120.7100	0.0190	57.1100	0.0017	3.3318	0.0042	0.0069	1.6795
Washington D.C.	7	6593.3	2.7570	0.4138	1660.5000	440.8100	0.0025	0.0114	1.9494	0.0045	0.0089	11.1830
Washington D.C.	8	1171.3	0.1274	50.0880	266.3600	126.7500	3.0055	0.0014	27.0480	72.6900	30.1240	1.1134
Washington D.C.	9	198.6	111.0600	0.0972	0.5262	0.2298	9.7562	41.1120	0.0034	22.3170	0.6562	8.5547

**I-4. PMF Source Apportionment Profiles, Trace Elements**

Site Name	Source No.	Br	Cu	Mg	Mn	Ni	Pb	Se	Sr	Ti	V	Zn
Acadia National Park	1	1.2726	0.1034	12.2680	0.2265	0.0001	0.0000	0.0951	0.0001	0.1730	0.0002	0.0193
Acadia National Park	2	0.0003	0.0025	0.0007	0.0002	0.7330	0.0008	0.0485	0.0001	0.0003	1.7608	0.0002
Acadia National Park	3	0.0001	0.0000	0.1023	0.0200	0.0000	0.0230	0.0081	0.0551	0.0335	0.0532	0.0108
Acadia National Park	4	0.0001	0.0013	1.0077	0.1898	0.0001	0.0000	0.0000	0.0075	1.0680	0.0003	0.1488
Acadia National Park	5	0.0779	0.0369	0.0014	0.0004	0.0414	0.0002	0.1267	0.0043	0.8410	0.0001	0.0003
Acadia National Park	6	0.1393	0.0616	0.0010	0.0756	0.0002	0.0001	0.0000	0.0001	0.3382	0.0002	0.0009
Acadia National Park	7	0.0441	0.0001	0.0010	0.1274	0.0001	0.0006	0.0000	0.1177	0.0002	0.8222	0.4104
Acadia National Park	8	0.0189	0.4984	0.0007	0.0824	0.1740	1.0494	0.1283	0.0000	0.0339	0.0001	3.5437
Acadia National Park	9	0.4136	0.0000	0.0003	0.1616	0.0001	1.2920	0.0000	0.0340	0.0001	0.0016	0.7359
Arendtsville	1	0.0013	0.0001	0.0131	0.0024	0.0002	0.0010	0.0004	0.0002	0.9302	0.0539	0.0031
Arendtsville	2	0.0004	0.0599	0.0234	0.2715	0.0001	4.0898	0.0002	0.0005	0.0021	0.0024	0.6754
Arendtsville	3	0.0006	0.1321	6.8952	0.2438	0.0002	0.0010	0.1736	0.0219	0.0030	0.0069	0.0023
Arendtsville	4	0.0007	0.0001	0.1801	0.2646	0.0001	0.0007	0.0002	0.0787	1.1842	0.0215	0.1873
Arendtsville	5	0.0795	0.0001	0.0085	0.0714	0.0000	0.0006	1.3082	0.0005	0.0041	0.0026	3.0186
Arendtsville	6	2.7760	0.3519	1.7492	0.0015	0.0000	0.0009	0.0003	0.0752	0.0032	0.0053	1.0968
Arendtsville	7	0.0006	0.4295	0.6692	0.4664	0.4975	0.0007	0.0002	0.0007	0.2832	0.6331	3.8329
Arendtsville	8	0.6080	0.0001	0.0091	0.0016	0.0381	0.0013	0.0008	0.0010	0.0022	0.0172	0.0008
Arendtsville	9	0.0005	0.0485	0.0236	0.0009	0.0003	0.0008	0.1286	0.0741	0.0017	0.0119	0.0005

I-4. PMF Source Apportionment Profiles, Trace Elements (continued)

Site Name	Source No.	Br	Cu	Mg	Mn	Ni	Pb	Se	Sr	Ti	V	Zn
Boundary Waters Canoe Area	1	0.0001	0.0000	0.0087	0.0025	0.0319	0.0001	0.0001	0.0002	0.0007	0.0055	0.1433
Boundary Waters Canoe Area	2	0.0406	0.0001	0.8992	0.2700	0.0001	0.1283	0.0046	0.0000	0.9884	0.0925	0.0001
Boundary Waters Canoe Area	3	0.0001	0.4778	0.6303	0.0002	0.0002	0.0001	0.0001	0.0000	0.0004	0.0023	0.4737
Boundary Waters Canoe Area	4	0.0836	0.0001	0.0902	0.0762	0.0003	0.0001	0.0394	0.0064	0.2308	0.1929	0.3972
Boundary Waters Canoe Area	5	0.1061	0.0000	1.1484	0.1754	0.0000	0.0001	0.0267	0.0691	0.1505	0.0461	0.1563
Boundary Waters Canoe Area	6	1.1651	0.0001	9.0548	0.2568	0.0359	0.0039	0.0028	0.0592	0.3689	0.5535	0.0002
Boundary Waters Canoe Area	7	0.0001	0.0001	0.0047	0.0010	0.0315	0.0001	0.1239	0.0003	0.5849	0.0191	0.0492
Boundary Waters Canoe Area	8	0.0001	0.0000	0.0064	0.0924	0.0001	1.1662	0.0446	0.0222	0.0051	0.0030	1.8518
Boundary Waters Canoe Area	9	0.0003	0.0000	0.0196	0.1391	0.0000	0.0001	0.0031	0.0630	0.0708	0.0005	0.0763
Brigantine National Wildlife Refuge	1	0.0003	0.0587	0.0010	0.0074	0.0003	4.1196	0.0006	0.0086	0.0002	0.0002	0.0006
Brigantine National Wildlife Refuge	2	0.0004	1.1990	0.0019	0.3097	0.0003	0.0005	0.0002	0.0001	0.0004	0.0001	8.2939
Brigantine National Wildlife Refuge	3	0.0005	0.0038	0.0127	0.0002	0.0001	0.0004	0.0001	0.0876	0.0022	0.4875	0.0008
Brigantine National Wildlife Refuge	4	0.0005	0.1676	2.0491	0.0001	1.4868	0.0003	0.0001	0.0007	0.0004	1.6637	0.0006
Brigantine National Wildlife Refuge	5	0.0003	0.0119	11.0430	0.0005	0.0014	0.0003	0.0716	0.1297	0.0003	0.5652	0.0491
Brigantine National Wildlife Refuge	6	0.0003	0.0001	0.0008	0.0485	0.0001	0.0004	0.9137	0.0009	0.0054	0.6618	1.3787
Brigantine National Wildlife Refuge	7	0.0006	0.0815	0.0007	0.0004	0.1288	0.0005	0.1660	0.0174	2.4977	0.0001	0.0013
Brigantine National Wildlife Refuge	8	3.4002	0.0057	0.0063	0.5778	0.0001	0.0004	0.0001	0.0009	0.3866	0.0014	0.0008
Brigantine National Wildlife Refuge	9	0.0003	0.0003	5.7858	0.3582	0.0001	0.0004	0.0001	0.0481	2.0855	0.1835	0.0021

I-4. PMF Source Apportionment Profiles, Trace Elements (continued)

Site Name	Source No.	Br	Cu	Mg	Mn	Ni	Pb	Se	Sr	Ti	V	Zn
Bondville	1	1.0541	0.0185	0.0577	0.0056	0.0076	0.0006	0.0002	0.0006	0.0663	0.0416	0.0010
Bondville	2	0.6505	0.2354	0.0208	0.0045	0.0002	0.0007	0.0002	0.1070	0.0856	0.0986	2.6521
Bondville	3	0.0002	0.0471	0.0128	0.0967	0.1138	0.0009	0.0005	0.0002	0.1016	0.0102	0.0016
Bondville	4	0.0001	0.0011	0.6358	0.0034	0.0001	0.0006	0.0003	0.0727	0.0029	0.0214	0.0011
Bondville	5	0.5076	0.1281	0.0346	0.0223	0.0005	0.0007	1.3499	0.0039	0.0708	0.0269	0.0020
Bondville	6	0.0001	0.0811	6.9050	0.0269	0.0001	0.0012	0.0010	0.0149	0.2314	0.0276	0.0022
Bondville	7	0.1813	0.3305	0.0595	0.0011	0.0001	4.3351	0.0002	0.0077	0.0028	0.0117	0.0022
Bondville	8	0.0002	0.0215	0.6619	0.2400	0.0172	0.0007	0.0003	0.0748	1.4672	0.0685	0.0011
Bondville	9	0.0711	0.0519	0.7906	0.8429	0.0927	0.0007	0.0003	0.0015	0.0021	0.0303	6.7902
Connecticut Hill	1	0.0002	0.2085	0.0189	0.0035	0.0001	0.0007	0.0013	0.1055	1.0029	0.0066	0.0024
Connecticut Hill	2	0.0002	0.2286	2.0512	0.8872	0.0004	0.0007	0.3273	0.0002	0.0048	0.0067	6.4692
Connecticut Hill	3	0.0003	0.0002	0.0887	0.0038	0.0001	0.0004	0.0002	0.0060	0.0030	0.0060	0.0010
Connecticut Hill	4	1.2721	0.2454	0.1108	0.0007	0.2653	0.0005	0.0001	0.0042	0.0040	0.5420	0.0010
Connecticut Hill	5	0.0002	0.0003	5.7648	0.0060	0.1304	0.0011	0.0173	0.0002	0.0023	0.0080	0.0016
Connecticut Hill	6	0.9358	0.0001	0.0094	0.0010	0.0000	0.0012	1.0002	0.0001	0.0015	0.0013	0.0018
Connecticut Hill	7	0.0002	0.0002	0.0089	0.0073	0.0003	0.9697	0.0975	0.0001	0.0034	0.0500	0.0028
Connecticut Hill	8	0.0002	0.1437	0.2997	0.0008	0.0002	2.8076	0.0005	0.0896	0.0012	0.0019	0.0036
Connecticut Hill	9	0.5941	0.0003	0.2640	0.1716	0.0000	0.0005	0.0001	0.0279	1.0709	0.0016	0.0018

I-4. PMF Source Apportionment Profiles, Trace Elements (continued)

Site Name	Source No.	Br	Cu	Mg	Mn	Ni	Pb	Se	Sr	Ti	V	Zn
Dolly Sods Wilderness Area	1	0.0002	0.0000	3.6492	0.2158	0.0001	0.2013	0.0001	0.0918	0.0001	0.0383	0.0006
Dolly Sods Wilderness Area	2	0.0004	0.0004	0.0072	0.0004	0.0001	0.0004	0.0002	0.0003	0.0003	0.0008	0.0002
Dolly Sods Wilderness Area	3	0.0002	0.5321	0.5645	0.6222	0.0735	1.7785	0.0002	0.0335	0.0001	0.0008	4.6292
Dolly Sods Wilderness Area	4	0.0003	0.0004	0.0091	0.1319	0.0001	0.0001	0.0003	0.0004	3.1665	0.1320	0.1843
Dolly Sods Wilderness Area	5	2.3076	0.0001	5.5079	0.3582	0.0604	0.0003	0.0002	0.0020	0.0002	1.0460	0.0007
Dolly Sods Wilderness Area	6	0.1129	0.1376	0.1408	0.0001	0.0428	0.0001	0.0003	0.0208	0.0001	0.0004	0.0643
Dolly Sods Wilderness Area	7	0.0006	0.0878	0.0033	0.0968	0.0001	0.0000	0.0259	0.0000	2.7552	0.0004	0.2655
Dolly Sods Wilderness Area	8	0.0003	0.0705	0.0046	0.0011	0.0000	0.0001	0.0003	0.0397	0.0001	0.0006	1.2061
Dolly Sods Wilderness Area	9	0.0013	0.0000	0.0032	0.0808	0.0000	0.5185	1.4611	0.0143	0.0002	0.0007	0.0033
Great Smoky Mountains National Park	1	0.6327	0.0001	4.7066	0.5651	0.0026	0.2378	0.7244	0.0004	1.8294	0.4924	0.0004
Great Smoky Mountains National Park	2	0.0120	0.0002	0.8160	0.0300	0.0000	0.0001	0.0000	0.0000	1.7090	0.0034	0.1143
Great Smoky Mountains National Park	3	0.0000	0.0002	0.0028	0.1149	0.0277	0.2963	0.0003	0.0455	2.6722	0.0314	0.0006
Great Smoky Mountains National Park	4	0.0001	1.2441	0.0118	0.0004	0.0404	0.0002	0.1053	0.0001	0.0001	0.0004	0.0006
Great Smoky Mountains National Park	5	0.0000	0.0002	0.4856	0.1882	0.0000	0.0423	0.0000	0.0879	0.0005	0.0700	0.0002
Great Smoky Mountains National Park	6	0.0002	0.0002	0.0032	0.0026	0.0001	0.0002	0.0001	0.0001	0.0003	0.0009	1.2330
Great Smoky Mountains National Park	7	0.1599	0.0001	0.0145	0.0004	0.0008	0.0001	0.0000	0.0031	0.0004	0.0821	0.2106
Great Smoky Mountains National Park	8	0.0001	0.0001	0.0029	0.0823	0.0001	1.7318	0.0920	0.0285	0.0001	0.0005	5.0865
Great Smoky Mountains National Park	9	1.4168	0.0002	2.7868	0.2579	0.0835	0.1361	0.0000	0.0721	0.0001	0.3672	0.0006

I-4. PMF Source Apportionment Profiles, Trace Elements (continued)

Site Name	Source No.	Br	Cu	Mg	Mn	Ni	Pb	Se	Sr	Ti	V	Zn
Jefferson/James River Face Wilderness Area	1	0.0002	0.0002	18.3940	0.2377	0.0000	0.0009	0.1261	0.0001	0.0007	0.0004	1.2966
Jefferson/James River Face Wilderness Area	2	0.0025	0.0004	0.0013	0.1099	0.0000	0.0005	0.2680	0.0479	3.0302	0.2146	0.0019
Jefferson/James River Face Wilderness Area	3	1.0313	0.0002	0.0017	0.5984	0.1430	0.0004	1.0355	0.0211	0.3740	0.5202	0.0011
Jefferson/James River Face Wilderness Area	4	0.1280	0.0002	0.0010	0.5782	0.0009	0.0004	0.0000	0.1260	2.7311	0.1397	0.0008
Jefferson/James River Face Wilderness Area	5	0.1231	0.0003	0.0019	0.0015	0.0004	0.0004	0.0001	0.0925	0.2398	0.1825	0.0014
Jefferson/James River Face Wilderness Area	6	0.4710	0.0002	0.0012	0.2381	0.0000	3.4072	0.0002	0.0269	0.0013	0.0029	0.0006
Jefferson/James River Face Wilderness Area	7	0.3648	0.0002	0.0014	0.0293	0.0315	0.0004	0.0001	0.0002	0.0014	0.0006	7.5303
Jefferson/James River Face Wilderness Area	8	0.9767	0.0003	0.0016	0.1551	0.0834	0.0005	0.0001	0.0002	0.0007	1.1122	0.0008
Jefferson/James River Face Wilderness Area	9	0.0000	1.3653	0.6326	0.0006	0.0263	0.1313	0.0177	0.0003	0.1295	0.0009	0.4601
Livonia	1	0.0009	0.3327	2.4719	0.9218	0.0963	0.0011	0.0003	0.0731	0.0041	0.0243	8.1601
Livonia	2	0.8944	0.0923	0.0184	0.0015	0.0784	0.0009	1.6190	0.0002	0.0885	0.0105	0.0011
Livonia	3	0.1519	0.0083	0.0099	0.0129	0.0006	0.0011	0.0003	0.0411	0.0077	0.0602	0.0015
Livonia	4	0.0002	0.0720	0.5133	0.2093	0.0122	0.0006	0.0004	0.1034	1.4152	0.0235	0.0009
Livonia	5	0.0002	0.0006	5.8316	0.0299	0.0161	0.0006	0.0052	0.0003	0.1151	0.0157	0.0015
Livonia	6	1.3842	0.1209	0.0452	0.0009	0.0049	0.0004	0.0002	0.0572	0.0024	0.1835	0.0013
Livonia	7	0.0003	0.1320	0.0294	0.0028	0.0262	0.0007	0.0005	0.0003	0.7397	0.0164	0.0013
Livonia	8	0.0002	0.1153	0.0336	0.0008	0.0001	3.3739	0.0022	0.0005	0.0022	0.0220	0.0052
Livonia	9	0.0002	0.0003	0.0342	0.0011	0.0001	0.0004	0.0004	0.0178	0.0009	0.0065	0.0014

I-4. PMF Source Apportionment Profiles, Trace Elements (continued)

Site Name	Source No.	Br	Cu	Mg	Mn	Ni	Pb	Se	Sr	Ti	V	Zn
Lye Brook Wilderness Area	1	0.6957	0.0000	0.0024	0.0691	0.0001	0.0002	0.4325	0.0000	0.0551	0.0006	0.9028
Lye Brook Wilderness Area	2	0.0001	0.5328	0.0043	0.0005	0.0001	0.0002	0.0006	0.0000	0.0002	0.0002	2.4437
Lye Brook Wilderness Area	3	0.1831	0.0000	1.3992	0.2011	0.0001	0.0002	0.0000	0.0385	0.0002	0.0006	0.3136
Lye Brook Wilderness Area	4	0.0001	0.0001	0.0093	0.1009	0.0001	2.2946	0.0003	0.0192	0.0006	0.0955	1.1494
Lye Brook Wilderness Area	5	0.0002	0.0005	1.6240	0.4063	0.0001	0.0003	0.0002	0.0233	0.5253	0.5458	0.0005
Lye Brook Wilderness Area	6	0.0001	0.0001	0.8639	0.0221	0.0001	0.0003	0.0558	0.0287	1.1371	0.0003	0.0473
Lye Brook Wilderness Area	7	0.0001	0.0133	0.1349	0.0644	0.0000	0.0005	0.0061	0.0000	1.2180	0.0002	0.0002
Lye Brook Wilderness Area	8	0.0487	0.0804	0.4229	0.0003	0.5429	0.0002	0.0000	0.0008	0.0003	0.4153	0.0004
Lye Brook Wilderness Area	9	0.8672	0.0999	5.2473	0.2825	0.0001	0.0003	0.0001	0.0480	0.4634	0.4510	0.0011
Mammoth Cave National Park	1	0.0001	0.0001	0.8974	0.0336	0.0001	0.0001	0.0061	0.0429	2.1606	0.0003	0.1155
Mammoth Cave National Park	2	0.0000	1.2723	0.0044	0.0002	0.0105	0.0002	0.0409	0.0003	0.0001	0.0002	0.8207
Mammoth Cave National Park	3	0.8800	0.0002	0.6420	0.0002	0.0019	0.0002	0.0002	0.0133	0.2921	0.0030	0.8056
Mammoth Cave National Park	4	0.0708	0.0002	4.4082	0.6149	0.0031	0.2305	0.0001	0.1032	0.0011	0.5233	0.0005
Mammoth Cave National Park	5	0.0000	0.0002	1.1423	0.0021	0.0002	0.0005	0.0773	0.0002	2.1488	0.0005	0.0021
Mammoth Cave National Park	6	1.1823	0.0001	1.6033	0.0817	0.0519	0.0001	0.0001	0.0112	0.3831	0.1289	0.4700
Mammoth Cave National Park	7	0.0309	0.0002	0.0033	0.2268	0.0002	1.9458	0.0001	0.0003	0.0004	0.0006	7.0733
Mammoth Cave National Park	8	0.0000	0.0002	0.0055	0.1454	0.0198	0.3119	0.2240	0.0343	0.2578	0.2230	0.0009
Mammoth Cave National Park	9	0.5704	0.0003	2.4221	0.5553	0.0674	0.8296	1.0466	0.0412	0.7521	0.3977	0.0008

I-4. PMF Source Apportionment Profiles, Trace Elements (continued)

Site Name	Source No.	Br	Cu	Mg	Mn	Ni	Pb	Se	Sr	Ti	V	Zn
M.K. Goddard	1	0.0003	0.1139	0.0362	0.0451	0.0601	0.0008	2.7719	0.0005	0.0487	0.0091	0.0008
M.K. Goddard	2	0.0004	0.3837	0.6323	1.3928	0.1066	0.0009	0.0004	0.0266	0.0030	0.0282	9.6810
M.K. Goddard	3	0.1573	0.0078	0.4711	0.0489	0.0000	0.0013	0.0006	0.0003	0.0017	0.0035	2.4719
M.K. Goddard	4	0.0005	0.0146	0.0094	0.0018	0.0123	0.0011	0.0005	0.0001	0.4301	0.0029	0.0023
M.K. Goddard	5	3.0539	0.3281	0.5438	0.0050	0.2463	0.0012	0.0004	0.0749	0.2830	0.4462	0.0012
M.K. Goddard	6	0.0013	0.0243	0.0277	0.0155	0.0000	0.0012	0.0006	0.0687	0.0054	0.0027	0.0009
M.K. Goddard	7	0.0029	0.1486	5.8197	0.3704	0.0001	0.0017	0.0007	0.0566	0.0066	0.0037	2.5459
M.K. Goddard	8	0.0004	0.1193	0.8641	0.4880	0.0167	0.0013	0.0005	0.0849	1.9941	0.0059	0.0005
M.K. Goddard	9	0.0004	0.1049	0.1302	0.0021	0.0487	6.5743	0.0004	0.0002	0.1385	0.0079	0.0007
Quaker City	1	0.0007	0.2427	1.9191	0.0005	0.1147	3.4121	0.1040	0.0056	0.0038	0.0804	3.3274
Quaker City	2	0.0010	0.0002	0.5138	0.6686	0.0001	0.5777	0.0002	0.0100	0.0076	0.0017	0.0018
Quaker City	3	0.0007	0.0190	3.6732	0.0003	0.0365	0.0008	0.5433	0.0025	0.0038	0.1267	0.0052
Quaker City	4	0.0008	0.1094	1.2608	0.0016	0.0202	0.0044	0.0002	0.1110	0.0035	0.1126	0.0024
Quaker City	5	2.4376	0.2381	1.2078	0.0003	0.1024	0.4325	0.2510	0.0799	0.0055	0.1832	0.0043
Quaker City	6	0.0006	0.1052	0.0264	0.3470	0.0001	0.0009	0.0002	0.0009	0.2488	0.0022	4.6606
Quaker City	7	0.0390	0.0178	0.0701	2.1514	0.0000	0.0009	1.5437	0.0002	0.0048	0.0015	1.2310
Quaker City	8	0.0015	0.0683	0.3591	0.0004	0.0220	0.0004	0.0001	0.0389	0.7909	0.0234	0.0975
Quaker City	9	0.2546	0.0002	0.0237	0.0005	0.0002	0.0014	0.0003	0.0005	0.6253	0.0032	0.1170

I-4. PMF Source Apportionment Profiles, Trace Elements (continued)

Site Name	Source No.	Br	Cu	Mg	Mn	Ni	Pb	Se	Sr	Ti	V	Zn
Shenandoah National Park	1	0.0000	0.0000	0.0159	0.0993	0.0000	0.2232	0.0002	0.0815	0.0006	0.0051	0.0438
Shenandoah National Park	2	0.1774	0.0431	1.3477	0.0008	0.0415	0.0001	0.0001	0.0063	0.0003	0.1470	0.0016
Shenandoah National Park	3	0.0001	0.0935	0.0073	0.1060	0.0000	0.0000	0.0240	0.0000	1.1974	0.0293	0.3485
Shenandoah National Park	4	0.0001	0.0001	0.0017	0.0002	0.0001	0.0002	0.1234	0.0146	0.0005	0.0004	0.0022
Shenandoah National Park	5	1.3842	0.0001	3.2429	0.3221	0.0096	0.0002	0.0001	0.0708	0.1266	0.3599	0.9309
Shenandoah National Park	6	0.6821	0.0001	2.9992	0.3469	0.0001	0.5092	0.8362	0.0246	0.0006	0.4662	0.8085
Shenandoah National Park	7	0.0767	0.0913	0.0015	0.0001	0.0144	0.0001	0.0003	0.0239	0.0003	0.0009	0.0052
Shenandoah National Park	8	0.0000	0.0000	0.4798	0.1489	0.0034	0.0001	0.0699	0.0000	4.6090	0.0013	0.0095
Shenandoah National Park	9	0.0293	0.7187	0.0017	0.2354	0.1751	1.6993	0.0002	0.0092	0.0003	0.0005	4.1346
Washington D.C.	1	0.1268	0.1673	0.0031	0.0001	1.5995	0.0001	0.0000	0.0000	0.0001	2.0716	0.8179
Washington D.C.	2	1.0885	0.5774	0.0020	0.6235	0.0001	4.4353	0.3991	0.0000	0.0001	0.0006	11.1780
Washington D.C.	3	0.0001	0.3818	1.4428	0.0000	0.0000	0.4475	0.0164	0.3818	0.3220	0.2313	0.1839
Washington D.C.	4	0.0002	0.0001	1.1338	0.0005	0.0626	0.2002	0.3529	0.0217	2.4105	0.0000	0.0005
Washington D.C.	5	0.1568	2.2976	3.8887	0.8613	0.0001	0.0002	0.0001	0.2579	1.8960	0.2887	2.7700
Washington D.C.	6	2.4803	0.2155	1.8136	0.0495	0.0001	0.0002	1.3143	0.0000	0.6166	0.3933	0.2074
Washington D.C.	7	0.8718	0.1799	0.0016	0.0001	0.0001	0.0005	0.0003	0.0000	0.0002	1.1212	0.2795
Washington D.C.	8	0.0008	0.0000	1.2861	0.0901	0.0199	0.8182	0.0001	0.0971	0.0980	0.0001	0.0001
Washington D.C.	9	0.0010	0.0001	0.8102	0.3703	0.0001	0.0000	0.0001	0.0001	2.4550	0.0001	0.7307