



Appendix B

Fine Particulate Speciation Summary- 2004

New Jersey Department of Environmental Protection

Table 1
Fine Particulate Speciation Data – 2004
Camden Lab, New Jersey

Concentrations in Micrograms Per Cubic Meter ($\mu\text{g}/\text{m}^3$)

Pollutant	Annual Average Concentration	Daily Average Maximum Concentration	Daily Average 2nd Highest Concentration
Aluminum	0.0217	0.1650	0.1429
Ammonium	1.9408	6.0937	6.0451
Antimony	0.0041	0.0653	0.0443
Arsenic	0.0013	0.0069	0.0059
Barium	0.0117	0.0579	0.0556
Bromine	0.0041	0.0610	0.0308
Cadmium	0.0027	0.0226	0.0192
Calcium	0.0493	0.3020	0.2912
Cerium	0.0074	0.0792	0.0669
Cesium	0.0045	0.0428	0.0371
Chlorine	0.0250	0.6202	0.2736
Chromium	0.0031	0.0473	0.0154
Cobalt	0.0002	0.0032	0.0030
Copper	0.0043	0.0329	0.0240
Elemental carbon	0.6806	2.6376	2.0073
Europium	0.0012	0.0163	0.0138
Gallium	0.0002	0.0017	0.0015
Gold	0.0015	0.0108	0.0101
Hafnium	0.0013	0.0204	0.0097
Indium	0.0018	0.0162	0.0136
Iridium	0.0010	0.0093	0.0052
Iron	0.0973	0.7001	0.3340
Lanthanum	0.0068	0.0558	0.0447
Lead	0.0043	0.0193	0.0176
Magnesium	0.0091	0.1092	0.0643
Manganese	0.0017	0.0083	0.0069
Mercury	0.0022	0.0437	0.0184
Molybdenum	0.0010	0.0127	0.0092
Nickel	0.0039	0.0217	0.0192
Niobium	0.0003	0.0046	0.0030
Nitrate	1.9539	7.3566	6.7493

Table 1 (Continued)
Fine Particulate Speciation Data – 2004
Camden Lab, New Jersey

Concentrations in Micrograms Per Cubic Meter ($\mu\text{g}/\text{m}^3$)

Pollutant	Annual Average Concentration	Daily Average Maximum Concentration	Daily Average 2nd Highest Concentration
Organic carbon	3.8585	10.0783	9.7288
Phosphorus	0.0048	0.0635	0.0466
Potassium	0.0521	0.1964	0.1652
Rubidium	0.0002	0.0020	0.0019
Samarium	0.0009	0.0197	0.0077
Scandium	0.0001	0.0013	0.0010
Selenium	0.0013	0.0065	0.0055
Silicon	0.0940	0.5370	0.4107
Silver	0.0018	0.0265	0.0147
Sodium	0.1184	0.8200	0.6173
Strontium	0.0007	0.0047	0.0043
Sulfate	4.4465	16.8402	16.7648
Sulfur	1.4255	5.8917	5.0108
Tantalum	0.0017	0.0172	0.0136
Terbium	0.0006	0.0122	0.0106
Tin	0.0031	0.0357	0.0353
Titanium	0.0042	0.0270	0.0213
Total mass	14.6567	37.9891	36.4745
Vanadium	0.0045	0.0420	0.0205
Wolfram	0.0023	0.0176	0.0168
Yttrium	0.0004	0.0038	0.0027
Zinc	0.0119	0.0840	0.0420
Zirconium	0.0016	0.0283	0.0214

Table 2
Fine Particulate Speciation Data – 2004
Chester, New Jersey

Concentrations in Micrograms Per Cubic Meter ($\mu\text{g}/\text{m}^3$)

Pollutant	Annual Average Concentration	Daily Average Maximum Concentration	Daily Average 2nd Highest Concentration
Aluminum	0.0131	0.1086	0.0629
Ammonium	1.3892	5.3308	5.1878
Antimony	0.0065	0.0571	0.0537
Arsenic	0.0012	0.0080	0.0055
Barium	0.0091	0.0608	0.0571
Bromine	0.0022	0.0112	0.0084
Cadmium	0.0024	0.0227	0.0206
Calcium	0.0166	0.0519	0.0512
Cerium	0.0075	0.0786	0.0766
Cesium	0.0040	0.0471	0.0273
Chlorine	0.0071	0.0924	0.0558
Chromium	0.0022	0.0135	0.0121
Cobalt	0.0003	0.0022	0.0019
Copper	0.0014	0.0132	0.0069
Elemental carbon	0.3601	1.3684	1.1299
Europium	0.0004	0.0051	0.0037
Gallium	0.0002	0.0035	0.0031
Gold	0.0019	0.0117	0.0102
Hafnium	0.0020	0.0333	0.0239
Indium	0.0022	0.0174	0.0168
Iridium	0.0017	0.0152	0.0115
Iron	0.0349	0.1148	0.1058
Lanthanum	0.0075	0.0731	0.0627
Lead	0.0023	0.0139	0.0109
Magnesium	0.0055	0.0517	0.0448
Manganese	0.0014	0.0052	0.0047
Mercury	0.0014	0.0090	0.0080
Molybdenum	0.0006	0.0069	0.0068
Nickel	0.0021	0.0151	0.0133
Niobium	0.0003	0.0047	0.0036
Nitrate	1.1976	6.4024	4.6470
Organic carbon	2.6933	6.8627	6.0160
Phosphorus	0.0028	0.0543	0.0492
Potassium	0.0343	0.2742	0.1387
Rubidium	0.0003	0.0036	0.0023
Samarium	0.0008	0.0069	0.0067
Scandium	0.0001	0.0023	0.0011
Selenium	0.0013	0.0062	0.0057

Table 2 (Continued)
Fine Particulate Speciation Data – 2004
Chester, New Jersey

Concentrations in Micrograms Per Cubic Meter ($\mu\text{g}/\text{m}^3$)

Pollutant	Annual Average Concentration	Daily Average Maximum Concentration	Daily Average 2nd Highest Concentration
Silicon	0.0402	0.2537	0.2120
Silver	0.0023	0.0188	0.0160
Sodium	0.0751	0.6008	0.4411
Strontium	0.0006	0.0043	0.0034
Sulfate	3.7631	17.1732	16.8490
Sulfur	1.1986	5.4171	4.8540
Tantalum	0.0031	0.0245	0.0232
Terbium	0.0004	0.0077	0.0040
Tin	0.0031	0.0301	0.0246
Titanium	0.0020	0.0090	0.0089
Total mass	10.8313	34.9137	31.6462
Vanadium	0.0018	0.0098	0.0095
Wolfram	0.0028	0.0220	0.0149
Yttrium	0.0004	0.0037	0.0024
Zinc	0.0062	0.0770	0.0288
Zirconium	0.0004	0.0061	0.0047

Table 3
Fine Particulate Speciation Data – 2004
Elizabeth Lab, New Jersey

Concentrations in Micrograms Per Cubic Meter ($\mu\text{g}/\text{m}^3$)

Pollutant	Annual Average Concentration	Daily Average Maximum Concentration	Daily Average 2nd Highest Concentration
Aluminum	0.0155	0.1137	0.0729
Ammonium	1.8950	7.4937	7.4037
Antimony	0.0058	0.0513	0.0501
Arsenic	0.0012	0.0075	0.0052
Barium	0.0154	0.0835	0.0698
Bromine	0.0034	0.0163	0.0132
Cadmium	0.0027	0.0319	0.0306
Calcium	0.0367	0.3024	0.0944
Cerium	0.0090	0.0772	0.0725
Cesium	0.0038	0.0402	0.0375
Chlorine	0.0447	1.0502	0.4389
Chromium	0.0042	0.0566	0.0384
Cobalt	0.0002	0.0016	0.0015
Copper	0.0049	0.0237	0.0174
Elemental carbon	1.5842	5.0086	4.6243
Europium	0.0010	0.0156	0.0145
Gallium	0.0002	0.0018	0.0013
Gold	0.0013	0.0097	0.0072
Hafnium	0.0018	0.0307	0.0220
Indium	0.0024	0.0319	0.0244
Iridium	0.0010	0.0111	0.0063
Iron	0.1128	0.4380	0.3843
Lanthanum	0.0068	0.0967	0.0463
Lead	0.0036	0.0161	0.0152
Magnesium	0.0081	0.0905	0.0605
Manganese	0.0021	0.0174	0.0078
Mercury	0.0017	0.0091	0.0086
Molybdenum	0.0009	0.0141	0.0083
Nickel	0.0049	0.0260	0.0145
Niobium	0.0004	0.0050	0.0043
Nitrate	1.9781	10.2563	5.9103
Organic carbon	4.5862	11.4540	10.3458
Phosphorus	0.0045	0.0745	0.0587
Potassium	0.0385	0.1469	0.1068
Rubidium	0.0004	0.0033	0.0024
Samarium	0.0009	0.0189	0.0084
Scandium	0.0001	0.0018	0.0014
Selenium	0.0013	0.0078	0.0057

Table 3 (Continued)
Fine Particulate Speciation Data – 2004
Elizabeth Lab, New Jersey

Concentrations in Micrograms Per Cubic Meter ($\mu\text{g}/\text{m}^3$)

Pollutant	Annual Average Concentration	Daily Average Maximum Concentration	Daily Average 2nd Highest Concentration
Silicon	0.0615	0.3254	0.2325
Silver	0.0023	0.0241	0.0155
Sodium	0.1301	1.5432	0.6742
Strontium	0.0008	0.0033	0.0032
Sulfate	4.0757	18.9489	17.5276
Sulfur	1.2657	5.6887	5.4056
Tantalum	0.0022	0.0172	0.0142
Terbium	0.0006	0.0256	0.0158
Tin	0.0036	0.0484	0.0382
Titanium	0.0035	0.0121	0.0097
Total mass	15.6685	48.4354	46.2571
Vanadium	0.0057	0.0326	0.0256
Wolfram	0.0021	0.0132	0.0129
Yttrium	0.0005	0.0038	0.0025
Zinc	0.0140	0.0644	0.0605
Zirconium	0.0008	0.0090	0.0070

Table 4
Fine Particulate Speciation Data – 2004
New Brunswick, New Jersey

Concentrations in Micrograms Per Cubic Meter ($\mu\text{g}/\text{m}^3$)

Pollutant	Annual Average Concentration	Daily Average Maximum Concentration	Daily Average 2nd Highest Concentration
Aluminum	0.0181	0.1337	0.1015
Ammonium	1.5497	7.0541	5.4807
Antimony	0.0057	0.0630	0.0619
Arsenic	0.0012	0.0054	0.0047
Barium	0.0111	0.0524	0.0514
Bromine	0.0026	0.0086	0.0084
Cadmium	0.0024	0.0253	0.0218
Calcium	0.0234	0.0954	0.0649
Cerium	0.0061	0.0880	0.0557
Cesium	0.0036	0.0383	0.0347
Chlorine	0.0161	0.1939	0.1166
Chromium	0.0021	0.0159	0.0155
Cobalt	0.0002	0.0015	0.0013
Copper	0.0036	0.0125	0.0105
Elemental carbon	0.6115	1.9977	1.6064
Europium	0.0007	0.0096	0.0093
Gallium	0.0002	0.0016	0.0016
Gold	0.0017	0.0115	0.0107
Hafnium	0.0018	0.0257	0.0190
Indium	0.0016	0.0215	0.0210
Iridium	0.0011	0.0100	0.0063
Iron	0.0682	0.1825	0.1694
Lanthanum	0.0054	0.0567	0.0472
Lead	0.0037	0.0200	0.0194
Magnesium	0.0071	0.0913	0.0793
Manganese	0.0026	0.0203	0.0161
Mercury	0.0015	0.0073	0.0061
Molybdenum	0.0005	0.0075	0.0053
Nickel	0.0026	0.0228	0.0110
Niobium	0.0004	0.0072	0.0068
Nitrate	1.5009	7.5874	5.1400
Organic carbon	3.2441	6.3656	6.2458
Phosphorus	0.0027	0.0482	0.0385
Potassium	0.0401	0.1459	0.1382
Rubidium	0.0002	0.0022	0.0017
Samarium	0.0010	0.0092	0.0068
Scandium	0.0002	0.0028	0.0022
Selenium	0.0011	0.0063	0.0049

Table 4 (Continued)
Fine Particulate Speciation Data – 2004
New Brunswick, New Jersey

Concentrations in Micrograms Per Cubic Meter ($\mu\text{g}/\text{m}^3$)

Pollutant	Annual Average Concentration	Daily Average Maximum Concentration	Daily Average 2nd Highest Concentration
Silicon	0.0504	0.2952	0.1971
Silver	0.0029	0.0362	0.0171
Sodium	0.0904	0.6506	0.3399
Strontium	0.0009	0.0043	0.0043
Sulfate	3.8279	18.0431	16.9728
Sulfur	1.1937	5.1220	5.0887
Tantalum	0.0030	0.0316	0.0209
Terbium	0.0003	0.0093	0.0071
Tin	0.0032	0.0286	0.0240
Titanium	0.0033	0.0476	0.0154
Total mass	12.5153	41.4128	37.2741
Vanadium	0.0026	0.0127	0.0107
Wolfram	0.0032	0.0197	0.0175
Yttrium	0.0004	0.0029	0.0028
Zinc	0.0119	0.0714	0.0613
Zirconium	0.0005	0.0056	0.0056