Appendix B

Fine Particulate Speciation Summary- 2005

New Jersey Department of Environmental Protection

Table 1
Fine Particulate Speciation Data – 2005
Camden Lab, New Jersey

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

Pollutant	Annual Average Concentration	Daily Average Maximum Concentration	Daily Average 2nd Highest Concentration
Aluminum	0.0188	0.1341	0.1120
Ammonium	1.9596	6.4489	4.8040
Antimony	0.0072	0.0548	0.0537
Arsenic	0.0011	0.0060	0.0051
Barium	0.0166	0.2113	0.1202
Bromine	0.0040	0.0451	0.0117
Cadmium	0.0020	0.0160	0.0153
Calcium	0.0620	0.2679	0.2493
Cerium	0.0102	0.0768	0.0670
Cesium	0.0007	0.0217	0.0178
Chlorine	0.0222	0.5371	0.3115
Chromium	0.0032	0.0339	0.0146
Cobalt	0.0001	0.0011	0.0011
Copper	0.0056	0.0218	0.0215
Elemental carbon	0.7027	2.4036	2.3505
Europium	0.0017	0.0267	0.0191
Gallium	0.0007	0.0055	0.0048
Gold	0.0009	0.0061	0.0050
Hafnium	0.0017	0.0111	0.0101
Indium	0.0026	0.0153	0.0152
Iridium	0.0009	0.0086	0.0068
Iron	0.1169	0.4064	0.3724
Lanthanum	0.0074	0.0599	0.0562
Lead	0.0043	0.0175	0.0134
Magnesium	0.0050	0.0927	0.0544
Manganese	0.0028	0.0188	0.0156
Mercury	0.0024	0.0332	0.0117
Molybdenum	0.0002	0.0042	0.0038
Nickel	0.0039	0.0191	0.0126
Niobium	0.0003	0.0051	0.0041
Nitrate	2.1018	8.3617	8.1652

Table 1 (Continued)
Fine Particulate Speciation Data – 2005
Camden Lab, New Jersey

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

Pollutant	Annual Average Concentration	Daily Average Maximum Concentration	Daily Average 2nd Highest Concentration
Organic carbon	4.0894	8.5234	8.4416
Phosphorus	0.0000	0.0032	0.0000
Potassium	0.0651	0.3358	0.2013
Rubidium	0.0003	0.0021	0.0019
Samarium	0.0021	0.0292	0.0153
Scandium	0.0001	0.0016	0.0016
Selenium	0.0015	0.0077	0.0049
Silicon	0.0770	0.5653	0.3563
Silver	0.0019	0.0165	0.0151
Sodium	0.1197	1.2464	0.5471
Strontium	0.0014	0.0059	0.0056
Sulfate	4.2237	17.5730	14.9241
Sulfur	1.4450	5.9500	5.2460
Tantalum	0.0012	0.0125	0.0120
Terbium	0.0055	0.0440	0.0305
Tin	0.0057	0.0420	0.0337
Titanium	0.0076	0.0393	0.0327
Total mass	16.1116	51.5836	49.3190
Vanadium	0.0061	0.0328	0.0221
Wolfram	0.0010	0.0071	0.0070
Yttrium	0.0006	0.0064	0.0035
Zinc	0.0136	0.0749	0.0422
Zirconium	0.0023	0.0476	0.0123

Table 2
Fine Particulate Speciation Data – 2005
Chester, New Jersey

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

Pollutant	Annual Average Concentration	Daily Average Maximum Concentration	Daily Average 2nd Highest Concentration
Aluminum	0.0101	0.0502	0.0489
Ammonium	1.4786	5.5199	5.5104
Antimony	0.0059	0.0724	0.0685
Arsenic	0.0007	0.0040	0.0034
Barium	0.0112	0.2077	0.1050
Bromine	0.0028	0.0068	0.0067
Cadmium	0.0020	0.0186	0.0176
Calcium	0.0206	0.0725	0.0699
Cerium	0.0062	0.0572	0.0477
Cesium	0.0025	0.0263	0.0262
Chlorine	0.0031	0.0302	0.0249
Chromium	0.0035	0.1140	0.0300
Cobalt	0.0002	0.0015	0.0013
Copper	0.0018	0.0112	0.0057
Elemental carbon	0.3899	2.6056	1.0928
Europium	0.0012	0.0109	0.0085
Gallium	0.0007	0.0056	0.0055
Gold	0.0010	0.0126	0.0093
Hafnium	0.0012	0.0110	0.0099
Indium	0.0027	0.0238	0.0179
Iridium	0.0008	0.0070	0.0057
Iron	0.0451	0.3979	0.1235
Lanthanum	0.0039	0.0561	0.0351
Lead	0.0032	0.0134	0.0129
Magnesium	0.0044	0.1151	0.0652
Manganese	0.0011	0.0140	0.0060
Mercury	0.0017	0.0086	0.0077
Molybdenum	0.0003	0.0049	0.0044
Nickel	0.0025	0.0347	0.0182
Niobium	0.0006	0.0063	0.0052
Nitrate	1.1909	7.3583	5.1231
Organic carbon	3.0902	10.6298	7.4595
Phosphorus	0.0001	0.0054	0.0037
Potassium	0.0370	0.1695	0.0963
Rubidium	0.0003	0.0036	0.0016
Samarium	0.0015	0.0231	0.0121
Scandium	0.0002	0.0029	0.0019
Selenium	0.0011	0.0046	0.0044

Table 2 (Continued)
Fine Particulate Speciation Data – 2005
Chester, New Jersey

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

Pollutant	Annual Average Concentration	Daily Average Maximum Concentration	Daily Average 2nd Highest Concentration
Silicon	0.0307	0.2078	0.1775
Silver	0.0026	0.0244	0.0181
Sodium	0.0591	0.2836	0.2002
Strontium	0.0008	0.0038	0.0031
Sulfate	3.9331	19.0725	18.2442
Sulfur	1.2423	6.4550	6.0356
Tantalum	0.0012	0.0182	0.0109
Terbium	0.0022	0.0380	0.0124
Tin	0.0050	0.0405	0.0299
Titanium	0.0024	0.0097	0.0088
Total mass	11.9954	44.1374	41.7140
Vanadium	0.0022	0.0100	0.0086
Wolfram	0.0014	0.0193	0.0118
Yttrium	0.0007	0.0034	0.0032
Zinc	0.0072	0.0196	0.0194
Zirconium	0.0025	0.0706	0.0462

Table 3
Fine Particulate Speciation Data – 2005
Elizabeth Lab, New Jersey

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

Pollutant	Annual Average Concentration	Daily Average Maximum Concentration	Daily Average 2nd Highest Concentration
Aluminum	0.0307	0.8281	0.1561
Ammonium	2.0579	6.7192	6.4150
Antimony	0.0077	0.0734	0.0698
Arsenic	0.0010	0.0059	0.0042
Barium	0.0157	0.1360	0.1140
Bromine	0.0042	0.0292	0.0110
Cadmium	0.0022	0.0217	0.0191
Calcium	0.0600	0.2689	0.1936
Cerium	0.0096	0.0739	0.0512
Cesium	0.0008	0.0180	0.0162
Chlorine	0.0460	0.8680	0.5327
Chromium	0.0095	0.2794	0.1004
Cobalt	0.0002	0.0023	0.0020
Copper	0.0084	0.0651	0.0643
Elemental carbon	1.7846	5.7169	5.1478
Europium	0.0018	0.0227	0.0177
Gallium	0.0005	0.0058	0.0031
Gold	0.0010	0.0159	0.0097
Hafnium	0.0016	0.0122	0.0120
Indium	0.0021	0.0213	0.0143
Iridium	0.0007	0.0085	0.0057
Iron	0.1773	1.0332	0.5029
Lanthanum	0.0069	0.0671	0.0549
Lead	0.0051	0.0146	0.0142
Magnesium	0.0079	0.0834	0.0748
Manganese	0.0035	0.0144	0.0127
Mercury	0.0017	0.0204	0.0093
Molybdenum	0.0004	0.0123	0.0056
Nickel	0.0082	0.0912	0.0525
Niobium	0.0004	0.0048	0.0041
Nitrate	2.1636	9.3276	8.9357
Organic carbon	5.2929	12.6196	12.0494
Phosphorus	0.0001	0.0120	0.0000
Potassium	0.0598	0.7841	0.2384
Rubidium	0.0003	0.0026	0.0020
Samarium	0.0019	0.0236	0.0140
Scandium	0.0001	0.0020	0.0019
Selenium	0.0014	0.0054	0.0051

Table 3 (Continued)
Fine Particulate Speciation Data – 2005
Elizabeth Lab, New Jersey

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

Pollutant	Annual Average Concentration	Daily Average Maximum Concentration	Daily Average 2nd Highest Concentration
Silicon	0.0642	0.5105	0.2238
Silver	0.0029	0.0177	0.0152
Sodium	0.1077	0.8023	0.5424
Strontium	0.0016	0.0131	0.0119
Sulfate	4.1368	16.8884	16.5916
Sulfur	1.3578	5.9537	5.3301
Tantalum	0.0012	0.0119	0.0116
Terbium	0.0071	0.0541	0.0343
Tin	0.0045	0.0385	0.0268
Titanium	0.0067	0.0248	0.0215
Total mass	0.0091	0.0378	0.0355
Vanadium	0.0016	0.0249	0.0164
Wolfram	0.0004	0.0044	0.0040
Yttrium	0.0207	0.1143	0.0913
Zinc	0.0013	0.0055	0.0055
Zirconium	0.0016	0.0131	0.0119

Table 4
Fine Particulate Speciation Data – 2005
New Brunswick, New Jersey

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

Pollutant	Annual Average Concentration	Daily Average Maximum Concentration	Daily Average 2nd Highest Concentration
Aluminum	0.0167	0.2994	0.0934
Ammonium	1.6947	4.9548	4.6052
Antimony	0.0062	0.0629	0.0571
Arsenic	0.0012	0.0047	0.0046
Barium	0.0109	0.1635	0.1110
Bromine	0.0033	0.0151	0.0085
Cadmium	0.0025	0.0197	0.0186
Calcium	0.0285	0.1361	0.1163
Cerium	0.0084	0.0634	0.0505
Cesium	0.0014	0.0330	0.0313
Chlorine	0.0199	0.4803	0.4450
Chromium	0.0053	0.2358	0.0345
Cobalt	0.0002	0.0021	0.0018
Copper	0.0071	0.2485	0.0507
Elemental carbon	0.6836	2.7916	2.3039
Europium	0.0014	0.0134	0.0103
Gallium	0.0005	0.0034	0.0027
Gold	0.0007	0.0062	0.0062
Hafnium	0.0019	0.0130	0.0118
Indium	0.0025	0.0210	0.0201
Iridium	0.0003	0.0061	0.0038
Iron	0.0891	0.8622	0.2629
Lanthanum	0.0031	0.0565	0.0443
Lead	0.0052	0.0217	0.0216
Magnesium	0.0052	0.0734	0.0582
Manganese	0.0031	0.0257	0.0249
Mercury	0.0017	0.0103	0.0099
Molybdenum	0.0002	0.0051	0.0043
Nickel	0.0042	0.0776	0.0336
Niobium	0.0004	0.0049	0.0048
Nitrate	1.6697	7.8079	6.7919
Organic carbon	3.8247	8.2941	8.2222
Phosphorus	0.0001	0.0048	0.0046
Potassium	0.0548	0.6283	0.3315
Rubidium	0.0004	0.0026	0.0019
Samarium	0.0012	0.0169	0.0105
Scandium	0.0001	0.0022	0.0021
Selenium	0.0012	0.0052	0.0050

Table 4 (Continued)
Fine Particulate Speciation Data – 2005
New Brunswick, New Jersey

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

Pollutant	Annual Average Concentration	Daily Average Maximum Concentration	Daily Average 2nd Highest Concentration
Silicon	0.0330	0.2820	0.1638
Silver	0.0023	0.0182	0.0122
Sodium	0.1028	0.7692	0.7667
Strontium	0.0010	0.0112	0.0067
Sulfate	3.9550	15.5291	14.8919
Sulfur	1.3471	6.1222	5.2079
Tantalum	0.0008	0.0097	0.0089
Terbium	0.0047	0.0785	0.0183
Tin	0.0045	0.0331	0.0315
Titanium	0.0044	0.0176	0.0155
Total mass	13.8028	39.6203	36.0239
Vanadium	0.0035	0.0204	0.0144
Wolfram	0.0009	0.0090	0.0084
Yttrium	0.0006	0.0043	0.0036
Zinc	0.0149	0.1820	0.0663
Zirconium	0.0013	0.0068	0.0062