



Appendix B

Fine Particulate Speciation Summary- 2008

New Jersey Department of Environmental Protection

Table 1
Fine Particulate Speciation Data – 2008
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	0.0286	0.1702	0.1317
Ammonium	1.4983	5.1382	3.7069
Antimony	0.0034	0.0539	0.0292
Arsenic	0.0008	0.0040	0.0036
Barium	0.0005	0.0092	0.0048
Bromine	0.0033	0.0187	0.0113
Cadmium	0.0007	0.0233	0.0093
Calcium	0.0316	0.1636	0.1087
Cerium	0.0000	0.0000	0.0000
Cesium	0.0006	0.0063	0.0048
Chlorine	0.0367	0.9785	0.2023
Chromium	0.0027	0.0287	0.0225
Cobalt	0.0004	0.0015	0.0014
Copper	0.0055	0.0367	0.0342
Elemental carbon	0.2912	0.9542	0.8272
Europium	0.0003	0.0064	0.0056
Gallium	0.0001	0.0018	0.0015
Gold	0.0001	0.0022	0.0017
Hafnium	0.0001	0.0044	0.0030
Indium	0.0011	0.0186	0.0140
Iridium	0.0001	0.0057	0.0023
Iron	0.0806	0.3929	0.3378
Lanthanum	0.0001	0.0054	0.0018
Lead	0.0020	0.0199	0.0110
Magnesium	0.0034	0.0453	0.0432
Manganese	0.0010	0.0050	0.0042
Mercury	0.0006	0.0110	0.0071
Molybdenum	0.0002	0.0067	0.0035
Nickel	0.0021	0.0122	0.0092
Niobium	0.0000	0.0022	0.0000
Nitrate	1.4424	6.8189	6.0624

Table 1 (continued)
Fine Particulate Speciation Data – 2008
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	2.4223	10.6054	10.5108
Phosphorus	0.0000	0.0000	0.0000
Potassium	0.0558	0.3538	0.3141
Rubidium	0.0003	0.0020	0.0017
Samarium	0.0002	0.0034	0.0029
Scandium	0.0000	0.0013	0.0002
Selenium	0.0007	0.0104	0.0054
Silicon	0.0682	0.2801	0.2211
Silver	0.0009	0.0093	0.0082
Sodium	0.1274	0.8285	0.5972
Strontium	0.0004	0.0063	0.0021
Sulfate	3.3538	9.5031	8.3167
Sulfur	1.1354	2.7670	2.6149
Tantalum	0.0005	0.0137	0.0093
Terbium	0.0002	0.0030	0.0027
Tin	0.0026	0.0280	0.0280
Titanium	0.0016	0.0111	0.0088
Total mass	12.4393	31.7313	31.4725
Vanadium	0.0036	0.0235	0.0196
Wolfram	0.0002	0.0060	0.0035
Yttrium	0.0001	0.0017	0.0016
Zinc	0.0084	0.0377	0.0336
Zirconium	0.0009	0.0140	0.0117

* The Camden Lab station was shutdown on September 29, 2008 because the NJDEP lost access to the station.

Table 2
Fine Particulate Speciation Data – 2008
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	0.0157	0.1237	0.0993
Ammonium	1.1390	3.3311	3.0027
Antimony	0.0035	0.0876	0.0618
Arsenic	0.0003	0.0029	0.0021
Barium	0.0003	0.0084	0.0066
Bromine	0.0024	0.0093	0.0074
Cadmium	0.0011	0.0186	0.0175
Calcium	0.0132	0.0500	0.0497
Cerium	0.0000	0.0024	0.0000
Cesium	0.0004	0.0063	0.0035
Chlorine	0.0114	0.2344	0.1419
Chromium	0.0017	0.0211	0.0129
Cobalt	0.0003	0.0015	0.0014
Copper	0.0017	0.0127	0.0098
Elemental carbon	0.3681	0.9847	0.9720
Europium	0.0001	0.0052	0.0016
Gallium	0.0001	0.0026	0.0017
Gold	0.0001	0.0029	0.0020
Hafnium	0.0002	0.0061	0.0046
Indium	0.0023	0.0338	0.0187
Iridium	0.0001	0.0060	0.0026
Iron	0.0356	0.0967	0.0914
Lanthanum	0.0002	0.0055	0.0048
Lead	0.0013	0.0077	0.0068
Magnesium	0.0019	0.0343	0.0258
Manganese	0.0006	0.0030	0.0024
Mercury	0.0008	0.0133	0.0098
Molybdenum	0.0001	0.0043	0.0020
Nickel	0.0012	0.0091	0.0077
Niobium	0.0001	0.0036	0.0020
Nitrate	0.9129	3.6642	3.5131
Organic carbon	3.2103	10.0131	8.8161
Phosphorus	0.0001	0.0115	0.0014
Potassium	0.0383	0.4169	0.1126
Rubidium	0.0002	0.0023	0.0016
Samarium	0.0001	0.0031	0.0024
Scandium	0.0000	0.0012	0.0002
Selenium	0.0003	0.0028	0.0026

Table 2 (Continued)
Fine Particulate Speciation Data – 2008
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	0.0344	0.2023	0.1482
Silver	0.0011	0.0152	0.0117
Sodium	0.0861	0.7691	0.4854
Strontium	0.0003	0.0086	0.0070
Sulfate	2.8729	9.3285	9.0504
Sulfur	0.9664	3.2566	3.0718
Tantalum	0.0002	0.0124	0.0033
Terbium	0.0001	0.0020	0.0019
Tin	0.0035	0.0723	0.0316
Titanium	0.0004	0.0060	0.0042
Total mass	9.8813	32.9477	24.1835
Vanadium	0.0007	0.0071	0.0056
Wolfram	0.0002	0.0045	0.0035
Yttrium	0.0001	0.0019	0.0016
Zinc	0.0055	0.0168	0.0148
Zirconium	0.0005	0.0128	0.0105

Table 3
Fine Particulate Speciation Data – 2008
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	0.0325	0.1454	0.1438
Ammonium	1.6996	4.8313	4.2493
Antimony	0.0029	0.0499	0.0453
Arsenic	0.0008	0.0047	0.0047
Barium	0.0016	0.0193	0.0157
Bromine	0.0034	0.0122	0.0113
Cadmium	0.0017	0.0221	0.0198
Calcium	0.0310	0.0934	0.0926
Cerium	0.0000	0.0019	0.0000
Cesium	0.0004	0.0053	0.0051
Chlorine	0.0365	0.3777	0.3399
Chromium	0.0043	0.0739	0.0367
Cobalt	0.0006	0.0057	0.0032
Copper	0.0075	0.0517	0.0345
Elemental carbon	1.6676	4.4488	3.9851
Europium	0.0003	0.0084	0.0063
Gallium	0.0002	0.0033	0.0030
Gold	0.0002	0.0035	0.0033
Hafnium	0.0004	0.0102	0.0095
Indium	0.0015	0.0244	0.0209
Iridium	0.0002	0.0069	0.0019
Iron	0.1346	0.5894	0.3435
Lanthanum	0.0004	0.0084	0.0055
Lead	0.0017	0.0091	0.0091
Magnesium	0.0038	0.0521	0.0390
Manganese	0.0018	0.0088	0.0059
Mercury	0.0007	0.0102	0.0072
Molybdenum	0.0001	0.0024	0.0023
Nickel	0.0041	0.0257	0.0172
Niobium	0.0001	0.0031	0.0024
Nitrate	1.7462	6.8309	5.8523
Organic carbon	5.2581	13.9623	11.6732
Phosphorus	0.0001	0.0074	0.0005
Potassium	0.0499	0.3540	0.3075
Rubidium	0.0002	0.0026	0.0021
Samarium	0.0002	0.0054	0.0039
Scandium	0.0001	0.0023	0.0021
Selenium	0.0004	0.0033	0.0030

Table 3 (Continued)
Fine Particulate Speciation Data – 2008
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	0.0643	0.3047	0.2002
Silver	0.0006	0.0070	0.0066
Sodium	0.1336	0.7247	0.5149
Strontium	0.0015	0.0682	0.0237
Sulfate	3.4253	9.8946	9.3706
Sulfur	1.1563	3.5420	3.3844
Tantalum	0.0003	0.0079	0.0055
Terbium	0.0003	0.0067	0.0055
Tin	0.0032	0.0349	0.0291
Titanium	0.0016	0.0129	0.0109
Total mass	15.1326	36.0851	35.1599
Vanadium	0.0075	0.0519	0.0402
Wolfram	0.0003	0.0065	0.0043
Yttrium	0.0001	0.0023	0.0012
Zinc	0.0134	0.0706	0.0410
Zirconium	0.0007	0.0151	0.0070

Table 4
Fine Particulate Speciation Data – 2008
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	0.0475	0.6851	0.2506
Ammonium	1.3451	3.7222	3.5484
Antimony	0.0031	0.0490	0.0385
Arsenic	0.0006	0.0043	0.0029
Barium	0.0009	0.0146	0.0106
Bromine	0.0031	0.0099	0.0085
Cadmium	0.0011	0.0175	0.0163
Calcium	0.0355	0.2016	0.1457
Cerium	0.0000	0.0021	0.0008
Cesium	0.0005	0.0089	0.0048
Chlorine	0.0347	0.5352	0.4741
Chromium	0.0099	0.5242	0.0837
Cobalt	0.0006	0.0063	0.0056
Copper	0.0058	0.0556	0.0243
Elemental carbon	0.6809	2.9716	1.8343
Europium	0.0005	0.0384	0.0050
Gallium	0.0002	0.0023	0.0020
Gold	0.0002	0.0033	0.0027
Hafnium	0.0003	0.0056	0.0054
Indium	0.0017	0.0210	0.0209
Iridium	0.0001	0.0031	0.0027
Iron	0.1247	1.6835	0.3749
Lanthanum	0.0002	0.0085	0.0055
Lead	0.0016	0.0126	0.0070
Magnesium	0.0055	0.0705	0.0389
Manganese	0.0031	0.0412	0.0361
Mercury	0.0005	0.0086	0.0045
Molybdenum	0.0001	0.0055	0.0027
Nickel	0.0035	0.1223	0.0260
Niobium	0.0002	0.0028	0.0023
Nitrate	1.3698	6.2501	4.0855
Organic carbon	4.0465	11.7562	10.0743
Phosphorus	0.0000	0.0044	0.0000
Potassium	0.0572	0.5666	0.1325
Rubidium	0.0002	0.0017	0.0016
Samarium	0.0002	0.0036	0.0034
Scandium	0.0000	0.0023	0.0013
Selenium	0.0003	0.0040	0.0033

Table 4 (Continued)
Fine Particulate Speciation Data – 2008
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	0.0970	0.6553	0.5955
Silver	0.0008	0.0117	0.0070
Sodium	0.1400	1.0939	0.8869
Strontium	0.0006	0.0134	0.0099
Sulfate	3.1188	9.8132	9.4984
Sulfur	1.0490	3.4645	3.4025
Tantalum	0.0001	0.0036	0.0022
Terbium	0.0005	0.0315	0.0036
Tin	0.0023	0.0303	0.0291
Titanium	0.0037	0.0705	0.0231
Total mass	13.1574	42.1823	34.2869
Vanadium	0.0017	0.0157	0.0099
Wolfram	0.0002	0.0043	0.0033
Yttrium	0.0001	0.0019	0.0013
Zinc	0.0101	0.0367	0.0359
Zirconium	0.0008	0.0210	0.0198