



# Appendix B

## Fine Particulate Speciation Summary- 2010

New Jersey Department of Environmental Protection

**Table 1**  
**Fine Particulate Speciation Data – 2010**  
**Chester, New Jersey**

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

<b>Pollutant</b>	<b>Annual Average Concentration</b>	<b>Daily Average Maximum Concentration</b>	<b>Daily Average 2nd Highest Concentration</b>
Aluminum	0.0167	0.1239	0.1219
Ammonium	0.7546	2.8553	2.7442
Antimony	0.0052	0.0617	0.0431
Arsenic	0.0003	0.0036	0.0024
Barium	0.0005	0.0065	0.0050
Bromine	0.0021	0.0075	0.0061
Cadmium	0.0027	0.0197	0.0181
Calcium	0.0140	0.0703	0.0683
Cerium	0.0002	0.0045	0.0036
Cesium	0.0006	0.0079	0.0061
Chlorine	0.0038	0.0453	0.0281
Chromium	0.0020	0.0110	0.0106
Cobalt	0.0002	0.0018	0.0015
Copper	0.0013	0.0102	0.0072
Elemental carbon	0.1665	0.4682	0.3727
Indium	0.0027	0.0234	0.0223
Iron	0.0313	0.1194	0.0823
Lead	0.0012	0.0091	0.0057
Magnesium	0.0012	0.0165	0.0148
Manganese	0.0007	0.0041	0.0029
Nickel	0.0009	0.0047	0.0044
Nitrate	0.7608	4.1260	3.9992
Organic carbon	1.8039	4.8656	4.8275
Phosphorus	0.0000	0.0000	0.0000
Potassium	0.0361	0.4180	0.1031
Rubidium	0.0003	0.0021	0.0016
Selenium	0.0004	0.0023	0.0022
Silicon	0.0373	0.2492	0.2489
Silver	0.0022	0.0338	0.0222
Sodium	0.0383	0.1898	0.1203
Strontium	0.0004	0.0024	0.0023
Sulfate	2.0118	8.4574	6.8414

**Table 1 (Continued)**  
**Fine Particulate Speciation Data – 2010**  
**Chester, New Jersey**

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

<b>Pollutant</b>	<b>Annual Average Concentration</b>	<b>Daily Average Maximum Concentration</b>	<b>Daily Average 2nd Highest Concentration</b>
Sulfur	0.7051	3.0954	2.7794
Tin	0.0053	0.0361	0.0338
Titanium	0.0009	0.0097	0.0093
Total mass	8.5265	36.5099	26.7286
Vanadium	0.0006	0.0071	0.0042
Zinc	0.0045	0.0177	0.0177
Zirconium	0.0010	0.0128	0.0105

**Table 2**  
**Fine Particulate Speciation Data – 2010**  
**Elizabeth Lab, New Jersey**

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

<b>Pollutant</b>	<b>Annual Average Concentration</b>	<b>Daily Average Maximum Concentration</b>	<b>Daily Average 2nd Highest Concentration</b>
Aluminum	0.0427	0.2736	0.2693
Ammonium	0.9678	3.9678	3.1512
Antimony	0.0069	0.0837	0.0732
Arsenic	0.0003	0.0034	0.0024
Barium	0.0067	0.0375	0.0338
Bromine	0.0028	0.0135	0.0096
Cadmium	0.0023	0.0233	0.0221
Calcium	0.0441	0.1954	0.1613
Cerium	0.0002	0.0036	0.0034
Cesium	0.0005	0.0056	0.0051
Chlorine	0.0207	0.3981	0.1401
Chromium	0.0033	0.0359	0.0330
Cobalt	0.0007	0.0046	0.0033
Copper	0.0067	0.0291	0.0207
Elemental carbon	1.0941	3.3277	3.2695
Indium	0.0032	0.0221	0.0198
Iron	0.1596	0.6520	0.4775
Lead	0.0020	0.0128	0.0108
Magnesium	0.0070	0.0751	0.0507
Manganese	0.0022	0.0101	0.0072
Nickel	0.0025	0.0125	0.0107
Nitrate	1.3183	7.1813	5.7393
Organic carbon	2.6235	5.9068	5.6497
Phosphorus	0.0000	0.0013	0.0007
Potassium	0.0518	0.8045	0.1399
Rubidium	0.0003	0.0024	0.0022
Selenium	0.0004	0.0023	0.0021
Silicon	0.0980	0.5717	0.5108
Silver	0.0014	0.0131	0.0128
Sodium	0.1738	6.4068	0.5244
Strontium	0.0008	0.0133	0.0071
Sulfate	2.2260	8.1866	6.9421

**Table 2 (Continued)**  
**Fine Particulate Speciation Data – 2010**  
**Elizabeth Lab, New Jersey**

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

<b>Pollutant</b>	<b>Annual Average Concentration</b>	<b>Daily Average Maximum Concentration</b>	<b>Daily Average 2nd Highest Concentration</b>
Sulfur	0.7630	3.0742	2.6173
Tin	0.0044	0.0431	0.0337
Titanium	0.0039	0.0250	0.0206
Total mass	12.2777	31.9127	29.2362
Vanadium	0.0037	0.0290	0.0222
Zinc	0.0114	0.0434	0.0341
Zirconium	0.0012	0.0175	0.0119

**Table 3**  
**Fine Particulate Speciation Data – 2010**  
**New Brunswick, New Jersey**

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

<b>Pollutant</b>	<b>Annual Average Concentration</b>	<b>Daily Average Maximum Concentration</b>	<b>Daily Average 2nd Highest Concentration</b>
Aluminum	0.0214	0.1662	0.0948
Ammonium	0.6474	3.4864	2.5549
Antimony	0.0070	0.0688	0.0606
Arsenic	0.0003	0.0022	0.0018
Barium	0.0010	0.0198	0.0069
Bromine	0.0020	0.0078	0.0072
Cadmium	0.0031	0.0249	0.0198
Calcium	0.0199	0.0721	0.0613
Cerium	0.0001	0.0015	0.0014
Cesium	0.0005	0.0068	0.0051
Chlorine	0.0072	0.1034	0.0794
Chromium	0.0023	0.0235	0.0114
Cobalt	0.0004	0.0026	0.0022
Copper	0.0026	0.0184	0.0121
Elemental carbon	0.2935	1.1808	1.0062
Indium	0.0028	0.0292	0.0257
Iron	0.0548	0.1725	0.1515
Lead	0.0012	0.0069	0.0066
Magnesium	0.0036	0.0444	0.0427
Manganese	0.0010	0.0067	0.0060
Nickel	0.0011	0.0070	0.0060
Nitrate	0.7701	5.4580	3.8941
Organic carbon	1.9458	5.2757	4.5313
Phosphorus	0.0000	0.0011	0.0007
Potassium	0.0400	0.5743	0.1163
Rubidium	0.0003	0.0020	0.0020
Selenium	0.0005	0.0045	0.0026
Silicon	0.0566	0.3482	0.2275
Silver	0.0021	0.0199	0.0147
Sodium	0.0464	0.1865	0.1860
Strontium	0.0006	0.0148	0.0098
Sulfate	1.6946	6.1750	5.1959

**Table 3 (Continued)**  
**Fine Particulate Speciation Data – 2010**  
**New Brunswick, New Jersey**

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

<b>Pollutant</b>	<b>Annual Average Concentration</b>	<b>Daily Average Maximum Concentration</b>	<b>Daily Average 2nd Highest Concentration</b>
Sulfur	0.6500	2.8815	2.5673
Tin	0.0041	0.0332	0.0268
Titanium	0.0014	0.0105	0.0072
Total mass	8.9387	25.1443	22.2979
Vanadium	0.0010	0.0098	0.0083
Zinc	0.0057	0.0213	0.0200
Zirconium	0.0015	0.0173	0.0150

**Table 4**  
**Fine Particulate Speciation Data – 2010**  
**Newark, New Jersey**

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

<b>Pollutant</b>	<b>Annual Average Concentration</b>	<b>Daily Average Maximum Concentration</b>	<b>Daily Average 2nd Highest Concentration</b>
Aluminum	0.0338	0.2906	0.2544
Ammonium	0.8483	3.0490	2.8267
Antimony	0.0067	0.0572	0.0526
Arsenic	0.0003	0.0020	0.0020
Barium	0.0016	0.0448	0.0086
Bromine	0.0022	0.0079	0.0061
Cadmium	0.0020	0.0212	0.0203
Calcium	0.0240	0.0930	0.0743
Cerium	0.0001	0.0034	0.0027
Cesium	0.0006	0.0077	0.0052
Chlorine	0.0106	0.2231	0.0532
Chromium	0.0044	0.0924	0.0482
Cobalt	0.0004	0.0029	0.0024
Copper	0.0049	0.0207	0.0203
Elemental carbon	1.0252	2.3601	2.2675
Indium	0.0029	0.0233	0.0205
Iron	0.0785	0.4486	0.2822
Lead	0.0017	0.0098	0.0091
Magnesium	0.0043	0.0820	0.0346
Manganese	0.0012	0.0050	0.0045
Nickel	0.0024	0.0272	0.0164
Nitrate	1.0378	5.1404	4.7123
Organic carbon	3.8235	11.8297	8.1849
Phosphorus	0.0000	0.0000	0.0000
Potassium	0.0478	1.0392	0.2071
Rubidium	0.0003	0.0019	0.0015
Selenium	0.0003	0.0043	0.0020
Silicon	0.0526	0.2655	0.2562
Silver	0.0017	0.0254	0.0192
Sodium	0.0855	1.8422	0.3513
Strontium	0.0008	0.0215	0.0088
Sulfate	1.9612	8.3512	7.1085

**Table 4 (Continued)**  
**Fine Particulate Speciation Data – 2010**  
**Newark, New Jersey**

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

<b>Pollutant</b>	<b>Annual Average Concentration</b>	<b>Daily Average Maximum Concentration</b>	<b>Daily Average 2nd Highest Concentration</b>
Sulfur	0.6760	3.1555	2.6459
Tin	0.0038	0.0432	0.0372
Titanium	0.0017	0.0079	0.0078
Total mass	9.7680	28.8283	23.6717
Vanadium	0.0024	0.0217	0.0153
Zinc	0.0091	0.0352	0.0310
Zirconium	0.0012	0.0110	0.0087