

Supplemental Table 1: DEARS residential neighborhoods and possible source impacts			
Enumeration Monitoring Areas no.	General location ^a	Potential source impact ^b	Neighborhood proximity to freeway ^c
1	Zug Island	Heavy industrial	≥ 300m
3	Ambassador Bridge	Diesel truck traffic	≤ 300m
4	US 3 and 7 Mile Road	Industry and automotive	≤ 300m and ≥ 300m
5	Dearborn	Industrial	≥ 300m
6	Southfield Freeway	Mobile source (freeway)	≤ 300m
7	Belleville	Regional	≥ 300m
Allen Park	Southern Wayne County	Industrial and freeway	≤ 300m

^a Represents the general area of the neighborhood sampled

^b Source impacts defined here are those believed from *a priori* determinations of the National Emissions Inventory (NEI) and other information gathered before the study was initiated.

^c Neighborhoods within 300m of busy roadways were considered as potentially impacted by near-road mobile source emissions.

Supplemental Table 2: DEARS sample collection and analysis methods.

Metric	Type	Field collection	Analysis	Analysis reference
PM2.5 mass	P, I, O, A	2 l/m PEM filter based	Gravimetric	Lawless and Rodes (1999)
PM2.5 elements	P, I, O, A	2–4 l/m PEM Teflon filter	ED-XRF	Dzubay et al. (1988)
PM2.5 EC–OC	I, O, A	2 l/m PEM quartz filter	Thermal–optical reflectance	Birch and Cary (1996)
PM2.5 nitrate	I, O, A	0.8 l/m Coat denuder/quartz filter	IC	Demokritou et al.(2001)
NO2, O3, SO2	I (NO2)P, A	Ogawa passive diffusion	IC	Varns et al. (2001)

x-ray fluorescence, IC = ion chromatography

Component	N Observations	Mean (ng/m ³)	Std Dev	RSD %	Minimum (ng/m ³)	95 th Pctl(ng/m ³)	Max(ng/m ³)
Calcium	100 / 70	120 / 117	54 / 74	45/63	39 / 24	400 / 348	957 / 1916
Iron	100 / 70	177 / 158	74 / 98	42/62	31 / 46	637 / 748	2526 / 7130
Potassium	100 / 70	66 / 55	31 / 32	46/58	18 / 12	155 / 145	390 / 385
Manganese	100 / 70	6 / 6	3 / 4	54/80	1 / 1	20 / 23	56 / 77
Lead	100 / 70	6 / 5	4 / 4	68/87	1 / 0	21 / 21	158 / 665
Zinc	103 / 70	37 / 32	37 / 34	100/107	3 / 4	171 / 132	1262 / 333
Silicon	100/91	203/103	312/79	154/77	0/0	362/236	2732/519
Nitrate	102/95	1228/5097	847/4878	69/96	0/0	2437/13973	5513/27822
Sulfur	100/91	2080/974	1644/799	79/82	241/198	5672/2749	6792/4487
EC	104/95	887/522	299/273	34/52	380/0	1420/942	1723/1667
OC	104/95	7170/5842	2637/2277	37/39	1030/2351	12131/9046	15231/14847
PM _{2.5}	98/91	17850/15808	9806/11397	55/72	3337/2787	40305/37163	43741/66371

*Conversions used in the manuscript to quantify SO₄: SO₄ = S x 4.125,

*Conversions used in the Table OC = OC x 1.4

Supplemental Table 4: Residential Outdoor Concentrations in the Enumeration Monitoring Areas (Summer)								
Enumeration Monitoring Areas	Component	N Observations	Mean (ng/m ³)	Std Dev (ng/m ³)	RSD %	Minimum (ng/m ³)	95 th Pctl (ng/m ³)	Max (ng/m ³)
1	Calcium	122	206	109	53	47	406	641
	Iron	122	370	248	67	81	889	1217

	Potassium	122	90	58	65	25	207	390
	Manganese	122	11	6	58	2	25	31
	Lead	122	14	18	136	1	29	158
	Zinc	122	85	100	118	10	266	712
	Si	122	290	338	117	<MQL	575	3599
	NO ₃	121	1500	1200	80	200	3600	5300
	S	122	1997	1640	82	184	5501	6779
	EC	126	900	300	33	300	1400	1700
	OC	126	7600	2600	34	2000	13000	16000
	PM _{2.5}	121	18554	9800	53	4332	37428	55581
3	Calcium	167	176	109	62	24	375	957
	Iron	167	215	158	73	47	447	1546
	Potassium	167	69	33	48	22	138	231
	Manganese	167	7	4	61	<MQL	13	32
	Lead	167	9	6	73	0.0	20	49
	Zinc	167	60	101	167	6	204	825
	Si	167	227	151	67	18.6	493	1168
	NO ₃	152	1400	900	64	40	1900	3100
	S	167	1883	1471	78	191	5183	7449
	EC	168	900	400	44	300	1600	2100
4	OC	168	7400	2400	32	1800	11600	15000
	PM _{2.5}	167	17026	8677	51	4686	34004	43445
	Calcium	107	104	201	192	12	192	1757
	Iron	107	97	101	105	13	219	797
	Potassium	67	71	76	106	<MQL	166	556
	Manganese	108	4	4	119	<MQL	10	31
	Lead	67	4	5	124	<MQL	11	23
	Zinc	109	48	155	323	<MQL	100	1173
	Si	127	203	270	133	<MQL	2100	499
	NO ₃	124	1400	1000	71	200	3400	5100
5	S	127	1948	1535	79	65.5	5249	6875
	EC	129	600	200	33	150	900	1700
	OC	129	7400	2500	34	1500	12000	13600
	PM _{2.5}	124	16922	9693	57	751	37179	45652
	Calcium	83	311	152	49	81	606	763
	Iron	83	444	330	74	74	925	2526
	Potassium	83	97	42	43	28	167	233
	Manganese	83	15	8	55	3	28	54
	Lead	83	15	14	91	1	43	76
	Zinc	83	110	172	156	15	415	1263
6	Si	83	345	206	60	67.6	816	1139
	NO ₃	85	1400	900	64	100	2800	5400
	S	83	2086	1671	80	276	6175	6872
	EC	85	800	300	38	<MQL	1300	1500
	OC	85	8700	2800	32	3800	14600	17500
	PM _{2.5}	83	19725	9150	46	5393	38990	46741
	Calcium	142	108	67	62	<MQL	221	479
	Iron	142	153	67	44	5	264	463
	Potassium	142	60	32	53	<MQL	103	288
	Manganese	142	4	3	57	<MQL	9	15
7	Lead	142	6	4	71	<MQL	12	23
	Zinc	144	28	29	105	1	79	262
	Si	142	194	192	99	<MQL	478	1714
	NO ₃	143	1400	1000	71	140	3600	6600
	S	142	1845	1605	87	7.8	5319	6883
	EC	147	700	300	43	100	1300	1900
	OC	147	7100	2500	35	2100	11800	16400
	PM _{2.5}	140	16344	9040	55	4463	36067	43140
	Calcium	94	85	65	77	22	252	412
	Iron	94	118	136	115	22	253	1283
1	Potassium	94	59	37	62	22	108	296
	Manganese	94	4	6	134	1	10	56
	Lead	94	5	3	69	<MQL	10	17
	Zinc	94	22	18	83	2	52	147
	Si	94	183	251	137	<MQL	330	2158
	NO ₃	87	1000	800	80	200	2500	5700
	S	94	2047	1639	80	175	5522	6860
	EC	99	600	200	33	<MQL	900	1400
	OC	99	6200	2200	35	1100	10300	12500
	PM _{2.5}	92	16052	9404	59	0	42467	39300

*Conversions used in the manuscript to quantify SO₄: SO₄ = S x 4.125, *Conversions used in the Table OC = OC x 1.4

Supplemental Table 5: Residential Outdoor Concentrations in the Enumeration Monitoring Areas (Winter)								
Enumeration Monitoring Areas	Component	N Observations	Mean (ng/m ³)	Std Dev	RSD %	Minimum (ng/m ³)	95 th Petl (ng/m ³)	Max (ng/m ³)
1	Calcium	73	161	112	70	13	347	769
	Iron	73	325	260	80	26	893	1248
	Potassium	73	68	51	75	14	169	268
	Manganese	73	10	8	79	<MQL	22	39
	Lead	73	9	8	85	1	20	58
	Zinc	73	47	35	75	7	123	139
	Si	73	133	107	80	<MQL	272	692

	NO ₃	114	4500	3700	82	200	11000	16000
	S	73	876	552	63	180	2050	2433
	EC	113	600	300	50	<MQL	1100	2000
	OC	113	6500	2100	32	2700	9900	14000
	PM _{2.5}	105	15041	8689	58	3231	32437	39340
3	Calcium	79	164	109	67	10	392	523
	Iron	79	236	186	79	28	674	952
	Potassium	79	66	52	79	10	187	276
	Manganese	79	9	9	92	<MQL	29	44
	Lead	79	8	7	85	<MQL	23	27
	Zinc	79	51	46	90	4	170	203
	Si	79	119	81	68	<MQL	277	431
	NO ₃	152	5500	5900	107	100	14300	47000
	S	79	1245	1204	97	223	4941	6414
	EC	153	600	300	50	<MQL	1200	1800
	OC	153	7300	3000	41	2000	13000	18000
	PM _{2.5}	146	16920	11881	70	2431	34228	85611
	Calcium	62	78	48	62	8	181	227
4	Iron	62	110	69	63	23	268	325
	Potassium	62	51	37	73	14	100	273
	Manganese	62	4	3	68	<MQL	12	14
	Lead	62	5	4	80	<MQL	14	17
	Zinc	62	32	32	102	4	90	200
	Si	62	86	60	70	<MQL	180	520
	NO ₃	102	4400	3300	75	300	11000	14000
	S	62	888	488	55	145	1734	2371
	EC	105	300	200	67	<MQL	700	900
	OC	105	5900	2100	36	1600	9100	11300
	PM _{2.5}	99	13292	7378	55	2016	29861	32364
	Calcium	38	348	363	104	11	1176	1917
	Iron	38	921	1469	160	25	5530	7130
5	Potassium	38	85	44	52	9	162	258
	Manganese	38	19	15	78	1	50	77
	Lead	38	42	113	273	1	240	665
	Zinc	38	92	77	84	12	319	333
	Si	38	230	178	77	<MQL	596	1003
	NO ₃	64	4000	3400	85	100	10000	17000
	S	38	915	424	46	212	1659	1785
	EC	65	500	700	140	<MQL	1100	2300
	OC	65	6000	2000	33	1700	9700	11000
	PM _{2.5}	62	16573	6792	41	3176	29295	40687
	Calcium	82	116	85	73	10	269	432
	Iron	82	186	138	75	23	501	714
	Potassium	82	61	52	86	4	161	385
6	Manganese	82	6	5	88	0.0	17	25
	Lead	82	5	6	128	<MQL	16	34
	Zinc	82	35	37	105	2	101	192
	Si	82	105	83	79	168	224	483
	NO ₃	117	4800	4100	85	20	14000	25000
	S	82	1088	921	85	168	3364	4980
	EC	119	500	300	60	<MQL	900	1600
	OC	119	6300	2700	43	2000	11700	18000
	PM _{2.5}	116	15313	11511	75	3176	40990	73865
	Calcium	69	67	42	62	6	155	217
	Iron	69	87	84	97	10	229	612
	Potassium	69	50	38	75	14	116	275
	Manganese	69	4	4	97	<MQL	11	23
7	Lead	69	4	5	117	<MQL	13	31
	Zinc	69	22	25	115	1	66	170
	Si	69	71	51	72	<MQL	170	193
	NO ₃	91	4500	4000	89	200	11000	22000
	S	69	957	775	81	216	2560	4189
	EC	95	300	300	100	<MQL	900	1200
	OC	95	5700	2700	47	50	13000	14000
	PM _{2.5}	92	12410	9162	73	1667	33163	56815

*Conversions used in the manuscript to quantify SO₄: SO₄ = S x 4.125,

*Conversions used in the Table OC = OC x 1.4

Supplemental Table 6: Residential Indoor Concentrations in the Enumeration Monitoring Areas (Summer)								
Enumeration Monitoring Areas	Component	Observations	Mean (ng/m ³)	Std Dev	RSD %	Minimum (ng/m ³)	95 th Pctl (ng/m ³)	Max (ng/m ³)
1	Calcium	105	145	74	51	44	328	366
	Iron	105	254	179	70	49	643	954
	Potassium	105	51	55	108	21	218	382
	Manganese	105	8	4.5	56	0.6	15	25
	Lead	105	12	15	125	1.3	31	121
	Zinc	118	71	87	123	5	260	638
	Si	105	253	357	141	27	433	3603
	NO ₃	115	907	631	68	113	2108	4147
	S	105	1683	1409	84	188	4439	6474
	EC	122	859	274	32	355	1347	1548
	OC	126	18313	5701	31	7802	27869	40516
	PM _{2.5}	105	19063	9010	47	6270	38148	44113

3	Calcium	62	99	44	44	33	180	200
	Iron	62	145	103	71	20	345	513
	Potassium	62	66	35	53	8	124	175
	Manganese	62	5	3	60	1	11	13
	Lead	62	8	10	125	< MQL	21	73
	Zinc	63	38	37	97	4	131	180
	Si	62	213	215	101	30	518	1498
	NO ₃	64	548	442	81	37	1293	1867
	S	62	1425	1256	88	128	3903	5442
	EC	65	890	484	54	194	1860	2733
	OC	65	15934	4321	27	4284	23279	29536
4	PM _{2.5}	63	14949	8660	58	3607	32681	46422
	Calcium	125	67	31	46	22	133	184
	Iron	125	70	38	54	16	157	179
	Potassium	125	74	82	111	9	193	579
	Manganese	125	3	2	67	< MQL	7	10
	Lead	125	4	3	75	< MQL	9	22
	Zinc	125	42	106	252	3	107	858
	Si	125	203	362	178	< MQL	516	3838
	NO ₃	121	789	537	68	90	1672	2728
	S	125	543	1114	205	135	3587	4819
	EC	125	577	299	52	161	1154	2267
5	OC	125	25521	15982	63	10213	53354	143411
	PM _{2.5}	125	26884	26368	98	5593	79733	210724
	Calcium	80	199	121	61	43	460	774
	Iron	80	286	216	75	46	795	946
	Potassium	80	95	79	83	26	198	596
	Manganese	80	9	7	78	0.6	22	46
	Lead	80	12	10	83	< MQL	35	49
	Zinc	80	123	231	188	5	452	1774
	Si	80	247	144	58	43	553	881
	NO ₃	85	724	593	82	76	1843	3183
	S	80	1668	1433	86	262	5331	6496
6	EC	85	820	501	61	279	1464	3482
	OC	85	20521	5009	24	10891	28442	39084
	PM _{2.5}	80	20217	10030	50	8780	40120	55193
	Calcium	139	79	43	54	19	185	273
	Iron	139	92	50	54	10	159	294
	Potassium	139	33	60	182	8	170	411
	Manganese	139	3	2	67	< MQL	6	10
	Lead	139	4	3	75	< MQL	10	17
	Zinc	143	20	22	110	2	56	201
	Si	139	310	1254	405	< MQL	484	12553
	NO ₃	143	586	532	91	38	1712	2657
7	S	139	1434	1289	90	149	3807	5630
	EC	136	675	561	83	< MQL	1180	6365
	OC	136	20144	5494	27	4992	31096	44898
	PM _{2.5}	139	18362	14597	79	3087	38876	140632
	Calcium	27	54	19	35	19	88	93
	Iron	27	43	40	93	9	85	219
	Potassium	27	44	26	59	11	88	117
	Manganese	27	3	4	142	< MQL	7	13
	Lead	27	2	3	113	< MQL	6	9
	Zinc	30	11	7	66	2	23	34
	Si	27	133	121	91	18	350	612
3	NO ₃	30	426	480	113	< MQL	1392	1826
	S	27	896	974	109	67	3395	3621
	EC	30	395	219	55	< MQL	789	911
	OC	30	16392	5465	33	5768	29467	30226
	PM _{2.5}	27	11510	9615	84	1086	33482	35626

*Conversions used in the manuscript to quantify SO₄: SO₄ = S x 4.125, Conversions used in the Table OC = OC x 1.4

Supplemental Table 7: Residential Indoor Concentrations in the Enumeration Monitoring Areas (Winter)								
Enumeration Monitoring Areas	Component	Observations	Mean (ng/m ³)	Std Dev	RSD %	Minimum (ng/m ³)	95 th Pctl (ng/m ³)	Max (ng/m ³)
1	Calcium	69	269	784	291	23	755	4824
	Iron	69	173	143	83	31	449	772
	Potassium	69	89	81	91	14	304	399
	Manganese	69	5	4	80	< MQL	12	24
	Lead	69	6	5	83	1	10	40
	Zinc	69	41	48	117	2	94	312
	Si	69	289	594	206	19	1061	3314
	NO ₃	99	1156	1199	104	95	3788	5992
	S	69	666	500	75	126	1428	3392
	EC	99	628	1445	230	< MQL	1159	13595
	OC	99	24701	8588	35	13631	42276	69504
3	PM _{2.5}	99	16004	14007	87	0	39585	95517
	Calcium	72	74	41	55	15	157	227
	Iron	72	118	113	96	14	458	512
	Potassium	72	55	47	85	6	173	236
	Manganese	72	5	6	120	< MQL	22	26
	Lead	72	5	5	100	< MQL	16	23
	Zinc	72	33	32	97	2	117	135
3	Si	72	112	111	99	< MQL	277	670

	NO ₂	36	1089	1335	122	< MQL	3750	7029
	S	72	885	890	100	112	3354	3644
	EC	77	500	374	75	< MQL	1157	1823
	OC	77	18948	4520	24	2402	25325	30547
	PM _{2.5}	70	10462	7471	71	0	26938	33404
4	Calcium	55	61	49	80	14	168	284
	Iron	55	59	40	68	11	148	179
	Potassium	55	103	170	165	11	588	814
	Manganese	55	3	2	67	0	7	7.6
	Lead	55	3	3	100	< MQL	10	16
	Zinc	55	22	23	104	3	70	138
	Si	55	100	121	121	< MQL	350	604
	NO ₃	66	907	892	98	18	2817	4162
	S	55	598	332	56	69	1320	1436
	EC	74	494	1680	340	< MQL	963	14587
	OC	74	32714	21052	64	13229	72750	139060
	PM _{2.5}	74	26577	34411	129	1932	96342	200786
5	Calcium	29	153	125	82	14	378	774
	Iron	29	252	232	92	39	439	617
	Potassium	29	80	50	63	25	182	230
	Manganese	29	8	5	63	0.5	21	22
	Lead	29	14	37	264	01	22	665
	Zinc	29	60	56	93	7	148	286
	Si	29	219	182	83	42	552	821
	NO ₃	52	1593	2333	146	< MQL	6750	12339
	S	29	667	285	43	219	1114	1234
	EC	55	503	778	155	< MQL	2983	3803
	OC	55	27475	9263	34	15213	47537	67292
	PM _{2.5}	54	21042	16974	81	2713	60251	85782
6	Calcium	81	60	43	72	15	127	284
	Iron	81	69	49	71	6	146	344
	Potassium	81	46	35	76	7	118	192
	Manganese	81	2	2	100	< MQL	6	12
	Lead	81	2.9	3.4	117	< MQL	10	17
	Zinc	81	18	17	94	1	50	97
	Si	81	86	83	97	< MQL	274	413
	NO ₃	97	789	769	97	45	2256	5105
	S	81	581	392	67	125	1322	2136
	EC	103	377	328	87	< MQL	969	1867
	OC	103	26504	19622	74	1985	45266	17827
	PM _{2.5}	102	16599	31433	189	1101	44146	297980
7	Calcium	35	52	27	52	15	114	149
	Iron	35	53	47	59	8	167	221
	Potassium	35	40	25	63	12	91	131
	Manganese	35	3	2	67	0	7	9
	Lead	35	3	4	133	< MQL	12	14
	Zinc	35	16	15	94	2	54	69
	Si	35	68	61	90	< MQL	159	313
	NO ₃	32	527	600	114	< MQL	2125	2143
	S	35	647	552	85	113	1920	2012
	EC	35	455	231	51	116	1021	1036
	OC	35	20759	6008	29	7016	33675	36555
	PM _{2.5}	35	9652	8937	93	1050	29448	40748

*Conversions used in the manuscript to quantify SO₄: SO₄ = S x 4.125,
*Conversions used in the Table OC = OC x 1.4

Supplemental Table 8: Personal Exposures in the Enumeration Monitoring Areas (Summer)								
Enumeration Monitoring Areas	Component	Observations	Mean (ng/m ³)	Std Dev	RSD %	Minimum (ng/m ³)	95 th Pctl (ng/m ³)	Max (ng/m ³)
1	Calcium	107	158	117	74	0	278	1131
	Iron	107	239	169	71	<MQL	560	821
	Potassium	71	105	74	71	4	227	391
	Manganese	107	8	5	65	1	20	22
	Lead	71	11	16	144	<MQL	45	93
	Zinc	112	67	80	119	1	235	509
	Si	107	283	266	94	<MQL	832	1507
	S	122	1997	1422	82	<MQL	5501	6986
3	PM _{2.5}	106	19535	9805	50	4769	42082	49313
	Calcium	61	138	93	68	26	304	521
	Iron	61	171	142	83	19	379	952
	Potassium	61	85	56	67	<MQL	198	266
	Manganese	61	7	5	83	< MQL	18	28
	Lead	61	8	11	129	<MQL	18	60
	Zinc	64	44	66	149	2	123	507
	Si	61	285	278	98	< MQL	833	1556
	S	61	1390	1222	88	33	3978	5524

	PM _{2.5}	59	17761	8755	49	7014	31611	51858
4	Calcium	107	104	201	192	12	192	1757
	Iron	107	97	101	105	13	219	797
	Potassium	67	71	75	106	<MQL	166	556
	Manganese	108	4	4	100	<MQL	10	31
	Lead	67	4	5	124	<MQL	11	23
	Zinc	109	48	155	323	<MQL	100	1173
	Si	107	250	465	186	< MQL	718	4126
	S	107	1389	1068	77	113	3668	4779
	PM _{2.5}	108	26238	24588	94	1030	64684	179013
5	Calcium	75	203	119	59	39	525	721
	Iron	75	263	186	71	28	736	843
	Potassium	36	109	104	96	<MQL	315	611
	Manganese	75	8	5	61	<MQL	19	24
	Lead	36	11	7	66	<MQL	22	39
	Zinc	75	101	168	166	3	356	1199
	Si	75	296	200	68	< MQL	678	1010
	S	75	1591	1479	93	134	5355	6504
	PM _{2.5}	76	23820	16335	69	3241	53781	111383
6	Calcium	125	92	67	72	26	244	409
	Iron	125	130	223	172	18	236	2289
	Potassium	78	70	57	83	1	191	289
	Manganese	125	5	9	196	<MQL	10	90
	Lead	78	5	5	100	<MQL	15	27
	Zinc	129	30	55	186	2	89	566
	Si	125	213	206	97	< MQL	661	1232
	S	125	1426	1283	90	126	3938	5574
	PM _{2.5}	124	18779	10843	58	3497	38820	81436
7	Calcium	29	98	82	84	15	340	346
	Iron	29	69	56	81	17	206	250
	Potassium	29	56	40	72	<MQL	139	141
	Manganese	29	3	3	100	<MQL	8	8
	Lead	29	4	7	186	<MQL	11	35
	Zinc	30	28	64	228	1	64	357
	Si	29	359	443	123	< MQL	1052	2248
	S	29	955	963	101	96	3240	3556
	PM _{2.5}	29	13853	9837	71	1850	34427	39305

^aConversions used in the manuscript to quantify SO₄: SO₄ = S x 4.125

^{*}EC/ OC not taken for personal

Supplemental Table 9: Personal Exposures in the Enumeration Monitoring Areas (Winter)								
Enumeration Monitoring Areas	Component	Observations	Mean (ng/m ³)	Std Dev	RSD %	Minimum (ng/m ³)	95 th Pctl (ng/m ³)	Max (ng/m ³)
1	Calcium	60	206	477	232	28	1035	2585
	Iron	60	186	218	117	18	541	1520
	Potassium	60	83	79	95	2	222	445
	Manganese	60	7	9	132	<MQL	15	62
	Lead	60	6	6	100	<MQL	13	32
	Zinc	60	50	91	181	4	151	651
	Si	60	238	383	161	< MQL	1052	1993
	S	60	603	404	67	40	1474	1941
	PM _{2.5}	67	16192	11942	74	1566	37955	68659
3	Calcium	72	101	90	90	24	211	640
	Iron	72	126	122	97	14	466	556
	Potassium	72	63	53	83	<MQL	170	265
	Manganese	72	5	6	108	<MQL	18	28
	Lead	72	6	7	119	<MQL	22	28
	Zinc	72	33	33	100	2	124	150
	Si	72	151	138	91	< MQL	473	608
	S	72	823	887	108	76	3322	4021
	PM _{2.5}	72	12946	10563	82	803	32017	65618
4	Calcium	49	67	53	80	17	156	357
	Iron	49	65	41	63	9	138	179
	Potassium	49	126	220	175	<MQL	642	1049

	Manganese	49	3	2	75	<MQL	8	10
	Lead	49	3	4	135	<MQL	10	14
	Zinc	49	24	23	93	2	73	112
	Si	49	134	151	113	< MQL	568	679
	S	49	586	315	54	84	1235	1310
5	PM _{2.5}	69	33348	41970	126	2184	113585	225361
	Calcium	28	134	99	74	42	290	522
	Iron	28	232	192	83	24	426	1011
	Potassium	28	76	48	63	8	175	191
	Manganese	28	8	5	67	<MQL	18	24
	Lead	28	13	35	270	<MQL	23	186
	Zinc	28	49	36	73	7	117	170
	Si	28	204	152	75	< MQL	501	670
	S	28	659	300	46	194	1149	1186
6	PM _{2.5}	46	23514	21852	93	1339	50479	129312
	Calcium	69	75	56	74	3	189	353
	Iron	69	77	76	98	5	206	509
	Potassium	69	49	39	80	<MQL	126	252
	Manganese	69	3	3	100	<MQL	8	12
	Lead	69	3	5	167	<MQL	11	15
	Zinc	69	25	31	124	1	74	202
	Si	69	113	121	107	< MQL	351	601
	S	69	541	419	77	7.2	1402	1990
7	PM _{2.5}	89	17887	29819	167	< MQL	54600	255837
	Calcium	29	119	152	127	22	284	815
	Iron	29	67	72	107	11	187	347
	Potassium	29	52	27	52	12	107	121
	Manganese	29	4	3	75	<MQL	10	14
	Lead	29	3	6	200	<MQL	15	20
	Zinc	29	27	31	114	1	88	154
	Si	29	209	259	124	< MQL	834	1057
	S	29	670	628	94	112	2063	2539
	PM _{2.5}	29	10351	6769	65	2137	24082	24581

^a Conversions used in the manuscript to quantify SO₄: SO₄ = S x 4.125

^{*} EC/ OC not taken for personal

Supplemental Table 10: Indoor vs. Outdoor Ratios			
Component	Season	Observations	Factor
Calcium	Summer	521	0.7
	Winter	332	1.4
Iron	Summer	521	0.7
	Winter	332	0.5
Potassium	Summer	521	1.2
	Winter	332	1.4
Manganese	Summer	521	0.8
	Winter	332	0.5
Lead	Summer	521	0.7
	Winter	332	0.2
Zinc	Summer	546	1.6
	Winter	332	0.8

Silicon	Summer	521	1.4
	Winter	332	1.3
Nitrates	Summer	557	0.6
	Winter	322	0.3
Sulfur	Summer	521	1.0
	Winter	332	0.7
PM _{2.5}	Summer	560	1.0
	Winter	344	1.0

Supplemental table 11: Personal vs. Indoor Ratios			
Component	Season	Observations	Factor
Calcium	Summer	479	1.4
	Winter	302	1.0
Iron	Summer	479	1.4
	Winter	302	1.0
Potassium	Summer	321	1.2
	Winter	302	1.0
Manganese	Summer	521	1.4
	Winter	332	1.9
Lead	Summer	321	1.1
	Winter	302	0.9
Zinc	Summer	509	1.6
	Winter	302	1.0
Silicon	Summer	479	1.2
	Winter	302	1.1
Sulfur	Summer	479	1.0
	Winter	302	1.0
PM _{2.5}	Summer	477	1.2
	Winter	299	1.1

Supplemental Table 12: MIXED Model Results – Examining the effect of spatial variability using average mean concentrations (ng/m ³) of personal measures adjusting for ambient air by season.								
Component	Season	Enumeration Monitoring Areas (EMA)						p-Value
		1	3	4	5	6	7	
Calcium	Summer	159	141	111	200	97	103	< 0.01
	Winter	199	103	66	128	74	119	0.178
Iron	Summer	246	167	99	262	134	73	< 0.01
	Winter	192	120	68	233	77	61	< 0.01
Potassium	Summer	104	87	75	120	71	56	0.040
	Winter	88	60	153	76	48	50	0.123
Manganese	Summer	8	7	4	8	5	3	< 0.01
	Winter	7	5	3	8	3	3	< 0.01
Lead	Summer	11	8	4	11	5	4	< 0.01
	Winter	6	6	3	13	4	3	< 0.01
Zinc	Summer	66	47	55	94	29	33	0.12
	Winter	51	31	26	51	25	24	0.02
Silicon	Summer	289	289	209	304	222	361	0.08
	Winter	240	151	132	205	111	208	0.03
Sulfur	Summer	1596	1435	1197	1586	1396	899	< 0.01
	Winter	742	707	638	743	535	523	0.02
PM _{2.5}	Summer	20,400	17,800	24,900	24,100	19,000	13,600	0.031
	Winter	16,200	12,400	34,300	26,900	16,000	9,700	0.014