Table 5.1. Metals Concentration in Settled Dust from Light Fixtures, Sandia Building 807, May 14-18, 2001

					Bulk Dust from Tops of Light Fixtures--Metals Concentration (ppm by weight)																										
Sample #	**Flr/ Quad**	**Room**	**Perimeter or Interior**	**Room History***	**Aluminum**	**Arsenic****	**Beryllium**	**Calcium**	**Cadmium****	**Cobalt**	**Chromium**	**Copper**	**Iron**	**Lithium**	**Magnesium**	**Manganese****	**Molybdenum**	**Nickel**	**Lead****	**Phosphorous**	**Platinum**	**Selenium**	**Silver**	**Sodium**	**Tellurium**	**Thallium****	**Titanium**	**Vanadium**	**Yttrium**	**Zinc**	**Zirconium**
515-1NW-G-LF-1	1NW	G	P	Office	11000	ND	0.35	45000	45.0	12	81	640	22000	15	5600	270	14	55	430	740	ND	ND	13.0	5500	ND	ND	250	12	5.2	1700	1100
518-1SW-D1085-LF	1SW	D1085	I	Office	8300	ND	0.37	43000	25.0	14	110	1200	17000	18	9500	270	17	81	960	1200	ND	ND	13.0	3700	ND	ND	300	13	5.7	1600	450
518-1SW-D1098-LF	1SW	D1098	P	Office	14000	ND	0.53	62000	25.0	8	47	510	22000	29	6400	350	7	41	330	1000	ND	ND	8.2	3200	ND	ND	340	22	8.6	1600	210
518-2NE-2039A-LF	2NE	2039A	I	Machine shop; metal and composite	59000	ND	31.00	17000	320.0	3900	4100	21000	160000	14	3100	950	2600	1200	1600	1500	ND	ND	5.9	1700	8	ND	120	1500	1.6	8300	77
518-2NW-2074-LF	2NW	2074	P	Office	14000	ND	0.58	57000	29.0	9	50	470	33000	29	6200	400	11	41	230	1100	ND	ND	5.3	2600	ND	ND	360	22	9.1	3200	250
518-2SE-2016-LF	2SE	2016	P	Office	12000	ND	0.53	57000	29.0	10	57	520	39000	27	6600	400	16	51	310	1000	ND	ND	11.0	2900	ND	ND	300	21	8.4	2400	190
518-3NE-3046-LF	3NE	3046	P	Office	14000	ND	0.59	62000	31.0	7	36	440	17000	28	6400	300	5	33	230	920	ND	ND	8.5	2100	ND	ND	300	22	9.4	2400	260
518-3SW-3104-LF	3SW	3104	P	Thorium & oxide beads; machine shop, '90s	25000	ND	1.90	41000	140.0	520	1700	7100	76000	32	5600	610	1300	1000	1000	690	ND	ND	ND	3300	39	ND	250	450	9.3	5200	100
518-3SW-3113-LF	3SW	3113	I	Crystal lab, Hi-temp super-conductors	13000	ND	0.90	95000	22.0	93	46	670	7100	15	7300	430	9	29	270	980	ND	ND	11.0	3100	ND	220	380	17	27.0	2000	88
Reporting Limit (micrograms/gram)					10	9	0.03	20	0.2	2	4	1	10	1	7	0.3	1	2	8	10	40	20	5.0	40	7	5	1	0.4	0.1	10	0

*History as reported by Sandia personnel

** Identified as metals that can cause neurotoxic effects

Table 5.2. Wipe Sampling for ICP Metals, Sandia Building 807, May 14-18, 2001

							Metal Surface Contamination (ug/cm2)																											
Sample #	**Flr/ Quad**	**Room**	**Surface**	**Type**	**Wipe Area (cm2)**	**Conc. Unit**	**Aluminum**	**Arsenic****	**Beryllium**	**Calcium**	**Cadmium****	**Cobalt**	**Chromium**	**Copper**	**Iron**	**Lithium**	**Magnesium**	**Manganese****	**Molybdenum**	**Nickel**	**Lead****	**Phosphorous**	**Platinum**	**Selenium**	**Silver**	**Sodium**	**Tellurium**	**Thallium****	**Titanium**	**Vanadium**	**Yttrium**	**Zinc**	**Zirconium**
514-1NW-N-IU-S	1NW	N	Induction unit, vertical	HVAC-Supply	---	**ug/sample:**	300	ND	ND	1500	0.63	0.37	3.60	9.0	390	0.8	240	7.5	ND	1.0	21.0	64.0	ND	ND	ND	300	ND	ND	12.0	0.6	0.2	1600	ND
			surface; supply side		100	**ug/cm2:**	3	---	---	15	0.01	0.00	0.04	0.1	4	0.0	2	0.1	---	0.0	0.2	0.6	---	---	---	3	---	---	0.1	0.0	0.0	16	---
514-1NW-O-DW	1NW	O	Horizontal surface,	HVAC-Supply	---	**ug/sample:**	1500	ND	ND	2200	0.92	0.85	9.00	34.0	13000	1.2	290	45.0	0.4	3.2	37.0	68.0	ND	ND	ND	480	ND	ND	17.0	1.7	0.3	1600	0.5
			lined air supply duct		150	**ug/cm2:**	10	---	---	15	0.01	0.01	0.06	0.2	87	0.0	2	0.3	0.0	0.0	0.2	0.5	---	---	---	3	---	---	0.1	0.0	0.0	11	0.0
514-1NW-TU-MB	1NW	T,U	Mixing box, bottom	HVAC-Supply	---	**ug/sample:**	2800	ND	0.11	7400	3.60	1.60	7.60	87.0	4500	4.9	1300	58.0	2.2	5.8	58.0	230.0	ND	ND	ND	1900	ND	ND	65.0	6.1	2.0	4000	1.4
			surface, lined		100	**ug/cm2:**	28	---	0.00	74	0.04	0.02	0.08	0.9	45	0.0	13	0.6	0.0	0.1	0.6	2.3	---	---	---	19	---	---	0.7	0.1	0.0	40	0.0
515-1NW-BC-MB-F	1NW	B,C	Mixing box, bottom	HVAC-Supply	---	**ug/sample:**	1000	ND	0.03	2900	2.10	0.55	3.80	27.0	1500	1.9	480	23.0	0.6	3.0	36.0	100.0	ND	ND	ND	1100	ND	ND	28.0	2.0	0.6	2200	ND
			surface, lined		100	**ug/cm2:**	10	---	0.00	29	0.02	0.01	0.04	0.3	15	0.0	5	0.2	0.0	0.0	0.4	1.0	---	---	---	11	---	---	0.3	0.0	0.0	22	---
515-1NW-BC-MB-S1	1NW	B,C	Square air supply	HVAC-Supply	---	**ug/sample:**	15000	ND	0.52	47000	8.00	5.60	40.00	250.0	13000	23.0	5300	220.0	1.7	14.0	350.0	520.0	ND	ND	ND	790	ND	ND	28.0	2.0	0.6	7200	5.7
			duct, bottom surface		100	**ug/cm2:**	150	---	0.01	470	0.08	0.06	0.40	2.5	130	0.2	53	2.2	0.0	0.1	3.5	5.2	---	---	---	8	---	---	0.3	0.0	0.0	72	0.1
515-1NW-H-D	1NW	H	Duct to supply register	HVAC-Supply	---	**ug/sample:**	1300	ND	0.03	4100	1.00	0.88	31.00	55.0	2300	2.2	550	27.0	1.0	2.7	22.0	100.0	ND	ND	0.4	410	ND	ND	44.0	2.3	0.7	1000	2.1
			bottom, metal, no lining		100	**ug/cm2:**	13	---	0.00	41	0.01	0.01	0.31	0.6	23	0.0	6	0.3	0.0	0.0	0.2	1.0	---	---	0.0	4	---	---	0.4	0.0	0.0	10	0.0
515-1NW-P-D-Cold	1NW	P	Terminal end 10" round	HVAC-Supply	---	**ug/sample:**	1600	ND	0.03	5400	1.90	1.00	7.10	72.0	15000	2.6	630	77.0	1.0	6.9	55.0	110.0	ND	ND	ND	340	ND	ND	55.0	3.2	1.0	4300	2.2
			cold duct		200	**ug/cm2:**	8	---	0.00	27	0.01	0.01	0.04	0.4	75	0.0	3	0.4	0.0	0.0	0.3	0.6	---	---	---	2	---	---	0.3	0.0	0.0	22	0.0
515-1SE-1019-MB	1SE	1019	VAV box, floor of unit	HVAC-Supply	---	**ug/sample:**	1700	ND	0.06	5600	3.50	0.72	4.50	40.0	2200	2.2	850	36.0	0.7	3.2	110.0	110.0	ND	ND	0.5	1000	ND	ND	40.0	3.0	0.9	1100	6.8
			near edge; no area		---	**ug/cm2:**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
515-1SE-1020-MB	1SE	1020	VAV air supply box,	HVAC-Supply	---	**ug/sample:**	1400	ND	0.03	3200	0.90	0.54	2.10	54.0	1100	1.3	430	18.0	0.2	1.6	16.0	81.0	ND	ND	0.7	480	ND	ND	30.0	1.8	0.5	290	1.2
			bottom surface, line		100	**ug/cm2:**	14	---	0.00	32	0.01	0.01	0.02	0.5	11	0.0	4	0.2	0.0	0.0	0.2	0.8	---	---	0.0	5	---	---	0.3	0.0	0.0	3	0.0
517-1NW-N-W2	1NW	N	Supply air diffuser;	HVAC-Supply	---	**ug/sample:**	990	ND	ND	3800	2.00	1.00	4.90	46.0	1800	1.6	510	22.0	0.9	4.3	39.0	92.0	ND	ND	0.5	500	ND	ND	40.0	1.6	0.6	210	15.0
			not too dirty		200	**ug/cm2:**	5	---	---	19	0.01	0.01	0.02	0.2	9	0.0	3	0.1	0.0	0.0	0.2	0.5	---	---	0.0	3	---	---	0.2	0.0	0.0	1	0.1
517-1NW-P-D-Hot	1NW	P	Terminal end of old Hot	HVAC-Supply	---	**ug/sample:**	410	ND	ND	1200	0.47	0.32	4.20	16.0	16000	1.0	200	60.0	0.3	2.9	72.0	ND	ND	ND	ND	350	ND	ND	11.0	0.7	0.1	1500	0.6
			duct, above room		100	**ug/cm2:**	4	---	---	12	0.00	0.00	0.04	0.2	160	0.0	2	0.6	0.0	0.0	0.7	---	---	---	---	4	---	---	0.1	0.0	0.0	15	0.0
517-Base-IFan-F	Bsmnt	Ind-Fan	Flr of induction discharge	HVAC-Supply	---	**ug/sample:**	3900	ND	0.12	9900	24.00	2.40	13.00	190.0	7300	6.9	1400	100.0	2.5	9.3	210.0	300.0	ND	ND	0.8	990	ND	2.80	110.0	7.0	2.0	13000	4.0
			housing, at metal vanes		100	**ug/cm2:**	39	---	0.00	99	0.24	0.02	0.13	1.9	73	0.1	14	1.0	0.0	0.1	2.1	3.0	---	---	0.0	10	---	0.03	1.1	0.1	0.0	130	0.0
517-Base-WE-DR	Bsmnt.	West-Fan	Rt hand 48' supply duct	HVAC-Supply	---	**ug/sample:**	1900	ND	0.05	4600	3.50	1.00	13.00	120.0	2700	2.7	680	39.0	0.8	3.5	170.0	130.0	ND	ND	0.4	450	ND	ND	58.0	3.3	1.1	6100	1.8
			bottom, metal mesh		100	**ug/cm2:**	19	---	0.00	46	0.04	0.01	0.13	1.2	27	0.0	7	0.4	0.0	0.0	1.7	1.3	---	---	0.0	5	---	---	0.6	0.0	0.0	61	0.0
517-1NE-L-W1	1NE	L	Old PZT lab; top of	HVAC-Return	---	**ug/sample:**	1200	ND	ND	3000	2.30	2.40	6.90	150.0	1700	1.2	570	21.0	0.5	3.4	680.0	73.0	ND	ND	1.7	490	ND	ND	63.0	1.2	0.5	590	180
			round metal duct in plenum		100	**ug/cm2:**	12	---	---	30	0.02	0.02	0.07	1.5	17	0.0	6	0.2	0.0	0.0	6.8	0.7	---	---	0.0	5	---	---	0.6	0.0	0.0	6	1.8
517-1NE-L-W2	1NE	L	Top side of metal plate	HVAC-Return	---	**ug/sample:**	410	ND	ND	2200	1.10	0.77	2.00	51.0	1400	0.7	330	12.0	0.3	1.6	870.0	ND	ND	ND	0.6	480	ND	ND	56.0	0.5	0.2	110	250
			on supply register; plenum		100	**ug/cm2:**	4	---	---	22	0.01	0.01	0.02	0.5	14	0.0	3	0.1	0.0	0.0	8.7	---	---	---	0.0	5	---	---	0.6	0.0	0.0	1	2.5
517-1NW-N-W1	1NW	N	Wipe on top of air duct	HVAC-Return	---	**ug/sample:**	640	ND	ND	3000	1.20	0.42	2.50	20.0	800	1.1	340	13.0	0.4	1.7	30.0	74.0	ND	ND	0.4	440	ND	ND	27.0	0.9	0.3	74	7.8
			in plenum, settled dust		100	**ug/cm2:**	6	---	---	30	0.01	0.00	0.03	0.2	8	0.0	3	0.1	0.0	0.0	0.3	0.7	---	---	0.0	4	---	---	0.3	0.0	0.0	1	0.1
514-1NW-N-LF	1NW	N	Top of light fixture	Occ. Area	---	**ug/sample:**	260	ND	ND	1400	1.10	0.42	1.80	10.0	270	0.9	210	5.9	0.7	1.6	9.4	64.0	ND	ND	0.3	420	ND	ND	8.8	0.4	0.2	52	1.1
					100	**ug/cm2:**	3	---	---	14	0.01	0.00	0.02	0.1	3	0.0	2	0.1	0.0	0.0	0.1	0.6	---	---	0.0	4	---	---	0.1	0.0	0.0	1	0.0
Reporting Limit (micrograms/gram)							3.0	30.0	0.02	10.0	0.1	0.2	0.5	1.0	8.0	0.6	50.0	0.1	0.2	0.2	1.0	60.0	0.9	4.0	0.1	200.0	1.0	0.6	0.1	0.1	0.0	9.0	0.5

Note: 1 ug/cm2 = 929 ug/ft2

** Identified as metals that can cause neurotoxic effects

Table 5.3. Vacuum Dust Metals Results, Sandia Building 807, May 14-18, 2001

				Vacuum Dust Metal Concentration (ppm by weight)																										
Sample #	**Flr/ Quad**	**Room**	**Surface**	**Aluminum**	**Arsenic****	**Beryllium**	**Calcium**	**Cadmium****	**Cobalt**	**Chromium**	**Copper**	**Iron**	**Lithium**	**Magnesium**	**Manganese****	**Molybdenum**	**Nickel**	**Lead****	**Phosphorous**	**Platinum**	**Selenium**	**Silver**	**Sodium**	**Tellurium**	**Thallium****	**Titanium**	**Vanadium**	**Yttrium**	**Zinc**	**Zirconium**
514-1NW-N-F	1NW	N	Carpet	2500	ND	0.07	29000	32	11	42	250	3200	45	1500	69	41	17	180	480	ND	ND	ND	1300	ND	ND	160	4	2	680	32
514-1NW-N-IU	1NW	N	Heater	12000	ND	0.30	49000	32	14	83	510	13000	15	4600	270	900	42	410	1000	27	ND	7	10000	ND	ND	240	10	4	8800	140
515-1SE-1018-IU	1SE	1018	Heater	7200	ND	0.29	39000	12	6	40	540	8400	21	3800	230	8	36	250	1300	26	ND	9	77000	ND	ND	160	16	5	3900	64
517-1NW-N-V-IU	1NW	N	Heater	6700	ND	0.21	36000	49	10	77	580	12000	14	3700	200	290	45	450	1000	23	ND	13	6400	ND	ND	87	10	3	3100	180
J-2000-N-IU*	1NW	N	Heater, bulk dust	7800	ND	0.22	30000	31	6	78	340	8200	16	3100	180	240	53	180	1000	23	ND	12	8800	ND	ND	160	14	4	1700	270
517-BASE-I-FAN	BASE	I-FAN	Fan housing	9600	ND	0.38	39000	36	6	26	470	16000	23	4200	270	4	17	510	820	24	ND	ND	1200	ND	ND	110	19	7	7700	13
Reporting Limit (micrograms/gram)				10	9	0.03	20	0.2	2	4	1	10	0.9	7	0.3	1	2	8	10	20	20	5	40	7	5	1	0.4	0.1	10	0.2

* Sample collected by Sandia Personnel

** Identified as metals that can cause neurotoxic effects

Table 5.4. Air Filters and Wall Insulation, Metals Content, Sandia Building 807, May 14-18, 2001

				Concentration in mg/g (ppm by weight)																										
Sample #	**Flr/ Quad**	**Room**	**Surface/Material**	**Aluminum**	**Arsenic****	**Beryllium**	**Calcium**	**Cadmium****	**Cobalt**	**Chromium**	**Copper**	**Iron**	**Lithium**	**Magnesium**	**Manganese****	**Molybdenum**	**Nickel**	**Lead****	**Phosphorous**	**Platinum**	**Selenium**	**Silver**	**Sodium**	**Tellurium**	**Thallium****	**Titanium**	**Vanadium**	**Yttrium**	**Zinc**	**Zirconium**
Air Filter Materials, Induction Units																														
517-1SE-1006-F	1SE	1006	Filter material, induction unit	1300	<90	0.03	3900	1.5	ND	8	250	2600	3	480	37	<10	4	48	170	ND	ND	ND	840	ND	ND	63	3	0.9	260	13
517-1SW-C-F	1SW	C	Filter material, induction unit	2300	<90	0.08	7200	2.6	ND	10	280	3800	ND	840	61	4	6	76	240	ND	ND	ND	1100	ND	ND	62	5	1.7	420	20
517-Base-IU-RF	Base	Ind Fan	Return air filter, induction fan	2200	<90	<0.30	2900	<200	<20	90	220	450000	27	430	1000	<10	36	<80	3300	<200	<200	<50	780	<70	<50	23	<40	<1	21000	<20
1085-M-2/20/01*	1SW	M	Filter material, induction unit	3200	<90	0.10	8700	3.1	ND	12	300	5600	7,3	1100	78	7	9	100	260	ND	ND	ND	1300	ND	ND	95	6	2.2	490	28
Insulation Materials																														
515-1NW-G-I1	1NW	G	Wall insulation (low), rock wool	51000	ND	5.20	240000	ND	ND	26	13	11000	71	61000	1900	2	4	8	51	ND	ND	ND	2500	ND	ND	1200	18	26.0	ND	100
515-1NW-G-I2	1NW	G	Wall insulation (mid), rock wool	53000	ND	5.40	240000	ND	ND	21	4	2100	79	56000	1700	2	ND	ND	50	ND	ND	ND	2500	ND	ND	1000	15	28.0	15	97
515-1NW-G-I3	1NW	G	Wall insulation (upper), fiberglass	650	ND	0.05	3800	2.6	ND	ND	23	1600	2	750	27	ND	ND	13	22	ND	ND	ND	5500	ND	ND	25	1	0.5	79	2
Reporting Limit (micrograms/gram)				10	9	0.03	20	0.2	2	4	1	10	1	7	0.3	1	2	8	10	20	20.00	5.0	40	7	5	1	0.4	0.1	10	0

*Sample collected by Sandia personnel

** Identified as metals that can cause neurotoxic effects