

**Appendix A: Tables with measurements available at HELCOM
stations for 2004**

Deposition of reduced and oxidized nitrogen at HELCOM sites

Site	Component	Jan	Febr	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Annual	Total N
DE0009R	ammonium	16.62	28.34	41.77	43.56	19.56	22.84	35.82	20.47	5.85	45.81	18.61	19.18	317.08	610.98
DE0009R	nitrate	30.48	31.21	22.80	24.49	16.93	29.35	36.56	15.86	6.13	43.05	15.70	22.31	293.90	
DE0009R	precipitation	60	52	26	37	30	61	69	60	41	77	34	35	582	
DK0005R	ammonium	17.27	16.97	39.46	47.35	30.66	23.78	25.84	74.60	18.55	26.79	12.05	15.54	345.70	639.97
DK0005R	nitrate	28.41	17.14	22.96	26.87	20.12	24.26	27.36	49.88	14.64	34.52	11.88	16.13	294.27	
DK0005R	precipitation	53	57	34	35	38	66	68	96	45	62	31	32	619	
DK0008R	ammonium	17.80	7.25	25.99	21.80	26.34	19.40	19.76	33.93	19.13	24.19	12.74	19.71	248.20	527.46
DK0008R	nitrate	38.54	14.94	21.03	17.17	18.67	17.96	22.49	30.19	16.46	32.18	21.67	27.63	276.26	
DK0008R	precipitation	56	32	36	25	25	56	62	73	40	95	53	44	597	
DK0020R	ammonium	21.56	9.16	33.78	121.30	59.35	23.52	32.83	33.31	35.58	37.10	17.00	1.18	425.86	673.96
DK0020R	nitrate	37.53	13.21	27.29	25.21	8.81	18.13	19.96	22.74	19.72	33.58	19.94	1.68	248.10	
DK0020R	precipitation	52.1	14.1	32.0	30.0	9.3	32.1	29.4	50.8	48.3	95.1	32.0	2.9	428.4	
EE0009R	ammonium	4.16	1.49	9.03	5.28	5.94	9.55	2.21	9.48	3.08	4.35	3.63	5.44	63.16	164.73
EE0009R	nitrate	5.60	5.84	12.47	1.71	4.05	14.85	8.06	9.35	9.53	7.07	12.43	10.89	101.57	
EE0009R	precipitation	25	27	43	8	38	124	141	90	101	67	60	43	768	
EE0011R	ammonium	6.41	10.37	30.70	4.40	5.82	2.60	7.07	151.53	37.78	1.85	14.58	21.65	294.76	428.34
EE0011R	nitrate	17.15	17.86	20.43	2.00	5.69	1.73	8.82	6.28	14.67	0.83	9.24	28.88	133.57	
EE0011R	precipitation	29	31	32	4	31	64	77	38	113	48	92	70	629	
FI0009R	ammonium	7.85	3.21	5.49	3.61	3.88	8.09	14.75	11.52	5.44	5.38	1.40	6.84	77.29	204.86
FI0009R	nitrate	16.97	8.41	6.31	4.53	4.46	12.60	17.13	17.15	8.96	10.52	4.88	17.33	127.57	
FI0009R	precipitation	13	6	8	6	13	51	66	59	21	17	6	23	288	
FI0017R	ammonium	7.06	4.71	14.27	5.05	7.91	17.88	3.22	20.94	35.36	14.58	5.10	17.68	149.45	347.56
FI0017R	nitrate	15.13	11.39	16.48	4.28	10.33	17.41	7.02	17.50	39.64	20.61	9.89	30.66	198.11	
FI0017R	precipitation	27	26	38	8	26	108	38	77	103	43	29	57	590	
FI0053R	ammonium	3.93	4.05	6.40	2.55	7.54	5.21	9.86	9.10	13.80	5.69	8.33	3.62	80.03	169.50
FI0053R	nitrate	6.08	5.17	6.20	2.92	5.69	6.26	12.45	9.57	11.06	6.91	8.62	8.78	89.47	
FI0053R	precipitation	10	13	12	11	38	43	97	80	79	22	30	15	449	

Site	Component	Jan	Febr	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Annual	Total N
LT0015R	ammonium	4.28	4.98	16.57	26.85	8.52	14.05	13.85	30.40	24.67	50.06	26.77	10.97	231.96	
LT0015R	nitrate	8.75	9.12	14.14	13.16	7.55	18.37	14.08	19.92	37.16	45.28	39.68	22.44	249.64	481.60
LT0015R	precipitation	14	19	24	18	24	51	24	44	85	90	51	27	470	
LV0010R	ammonium	15.03	24.13	49.61	4.89	10.44	24.69	15.24	27.50	32.28	43.90	27.35	30.09	306.78	
LV0010R	nitrate	24.57	37.92	38.31	8.24	10.45	22.60	12.85	26.05	29.67	47.03	30.90	43.23	331.23	638.01
LV0010R	precipitation	39	44	55	10	34	51	27	72	74	119	65	65	653	
LV0016R	ammonium	20.40	41.25	35.52	12.13	13.60	30.83	7.51	32.32	24.58	35.53	32.11	29.36	312.09	
LV0016R	nitrate	11.56	15.28	25.75	6.74	11.06	20.59	10.44	21.56	19.10	24.48	16.78	28.81	208.95	521.04
LV0016R	precipitation	22	49	51	16	44	107	55	86	69	111	49	66	725	
PL0004R	ammonium	8.21	24.44	38.00	20.24	15.37	18.62	43.56	38.79	32.00	30.14	34.78	11.18	313.48	
PL0004R	nitrate	18.08	33.72	29.87	13.33	10.22	18.31	35.15	33.80	30.97	39.29	50.87	20.95	333.11	646.58
PL0004R	precipitation	38	50	37	23	20	54	103	147	112	113	74	57	825	
RU0016R	ammonium	9.45	11.84	26.80	11.83	18.59	66.21	45.91	19.10	13.20	-	-	-	222.93	
RU0016R	nitrate	11.08	16.22	26.44	13.15	9.97	21.04	9.83	16.26	8.88	-	-	-	132.87	355.80
RU0016R	precipitation	22	38	45	9	31	120	36	79	37	0	0	0	417	
SE0005R	ammonium	0.10	0.19	0.33	-	2.73	4.86	8.40	5.07	6.13	3.38	2.29	0.58	34.08	
SE0005R	nitrate	0.31	0.74	0.73	0.42	0.68	4.04	5.03	3.17	6.74	5.54	3.98	2.06	33.33	67.41
SE0005R	precipitation	1	4	3	1	5	37	74	34	72	36	39	13	319	
SE0011R	ammonium	24.15	23.63	47.90	27.55	28.76	32.42	25.88	34.29	27.54	49.40	21.18	36.17	378.86	
SE0011R	nitrate	34.52	26.73	37.04	19.27	20.81	40.88	29.84	29.32	23.12	44.21	13.35	38.99	358.09	736.94
SE0011R	precipitation	61	38	59	27	36	120	133	65	68	90	24	71	791	
SE0014R	ammonium	28.26	5.58	26.25	14.08	42.65	30.33	31.15	64.47	30.74	17.86	17.83	22.13	331.53	
SE0014R	nitrate	58.13	12.32	24.80	11.38	29.45	16.75	27.25	29.99	26.50	25.79	29.50	27.39	319.27	650.80
SE0014R	precipitation	71	23	43	21	69	53	90	83	67	77	81	49	727	

Deposition of heavy metals (Pb, Cd and Hg) and lindane (γ HCH) at HELCOM sites

Site	Component	Jan	Febr	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Annual
DE0009R	cadmium	1.602	2.142	1.776	2.934	2.023	1.294	2.754	1.867	0.909	2.92	1.664	2.136	23,952
DK0008R	$\mu\text{g Cd}/\text{m}^2$	3.242	0.055	1.712	1.873	2.644	1.536	2.739	2.71	0.985	4.467	1.843	6.24	30,077
DK0020R	cadmium	2.223	1.481	5.228	34.154	6.344	5.704	17.385	4.204	1.445	4.653	3.627	0.242	86,684
EE0009R	$\mu\text{g Cd}/\text{m}^2$	2.217	0.319	2.093	1.738	1.134	4.86	1.555	3.615	1.115	0.632	2.252	4.68	26,159
EE0011R	cadmium	2.9	0.599	0.918	1.4	0.849	2.88	12.474	1.38	10.53	0.825	0.908	7.19	42,777
FI0017R	cadmium	2.088	1.129	2.558	0.924	1.393	2.627	1.841	4.656	7.618	2.313	1.421	4.928	33,456
FI0053R	$\mu\text{g Cd}/\text{m}^2$	0.533	0.711	0.634	0.571	1.574	1.252	2.045	1.722	2.713	0.774	1.171	0.715	14,411
LT0015R	cadmium	11.695	7.258	7.029	15.193	10.118	6.336	4.828	9.839	17.992	26.93	7.766	10.557	135,533
LV0010R	$\mu\text{g Cd}/\text{m}^2$	4.006	6.181	13.161	2.398	4.885	5.617	3.941	6.477	6.373	3.869	4.465	4.838	67,185
LV0016R	cadmium	3.089	3.493	7.227	1.477	2.046	8.401	1.464	8.254	3.226	4.047	3.452	1.871	47,951
PL0004R	$\mu\text{g Cd}/\text{m}^2$	1.584	1.971	1.821	1.347	1.224	1.605	3.078	5.898	2.234	4.52	2.995	1.664	29,931
SE0051R	cadmium	4.255	1.38	3.498	0.532	2.5	1.992	0.404	1.152	2.032	4.5	1.8	1.05	25,131
DE0009R	lead	42.11	63.72	42.71	91.23	62.57	50.93	89.82	52.71	25.51	96.37	50.25	54.48	721.37
DK0008R	$\mu\text{g Pb}/\text{m}^2$	107.94	2.03	61.92	29.94	87.70	43.84	63.73	110.26	35.08	121.94	55.73	66.52	787.69
DK0020R	lead	87.01	64.23	70.88	13.22	30.49	35.29	62.38	49.75	31.64	124.63	75.65	5.04	652.33
EE0009R	$\mu\text{g Pb}/\text{m}^2$	14.25	13.23	20.93	3.95	18.90	60.75	57.535	93.99	55.74	31.61	28.15	23.40	936.99
EE0011R	lead	16.51	14.74	15.31	2.00	14.15	28.80	133.65	35.88	175.50	29.55	45.40	35.95	546.04
FI0017R	$\mu\text{g Pb}/\text{m}^2$	60.72	38.00	62.12	14.93	41.28	60.89	24.95	81.29	150.08	70.95	41.02	139.44	789.15
FI0053R	lead	12.79	26.54	18.04	7.50	38.43	24.59	42.86	32.80	48.68	14.04	38.55	17.69	322.36
LT0015R	$\mu\text{g Pb}/\text{m}^2$	63.29	77.88	111.25	698.68	338.42	411.81	59.84	2262.64	1477.50	2358.98	342.00	163.72	8364.56
LV0010R	lead	70.82	96.32	86.81	12.42	36.67	62.08	40.36	105.62	94.89	110.15	113.46	104.81	933.47
LV0016R	$\mu\text{g Pb}/\text{m}^2$	73.62	87.15	80.80	14.77	22.04	39.34	29.93	68.30	59.59	107.93	51.97	105.63	738.01
PL0004R	lead	78.89	46.21	67.33	6.06	33.25	54.57	107.73	157.50	54.73	71.19	84.86	32.16	794.49
SE0051R	$\mu\text{g Pb}/\text{m}^2$	188.32	98.44	137.63	5.23	54.50	33.26	18.59	29.04	25.84	52.00	38.52	40.74	722.97
DE0009R	mercury	284.1	358.7	305.9	456.0	390.4	756.0	855.3	805.6	483.7	718.5	223.7	257.4	5670.5
SE0014R	$\text{ng Hg}/\text{m}^2$	440.4	72.8	255.7	639.4	2175.6	1941.6	802.3		650.7	389.9	417.0	328.6	8113.9
DE0009R	$\mu\text{g } \gamma\text{HCH}/\text{m}^2$	64.9	165.1	108.1	121.6	77.5	106.9	109.9	99.3	69.9	126.4	75.4	77.0	1201.8
SE0012R	$\mu\text{g } \gamma\text{HCH}/\text{m}^2$	0.50	0.02	2.20	0.10	0.10	1.00	1.10	4.10	1.00	0.20	0.10	0.35	0.76
SE0014R	$\mu\text{g } \gamma\text{HCH}/\text{m}^2$			0.74	0.92	1.50	0.59	0.92	0.75	0.96	1.00	0.75	0.23	0.84

Air concentrations of reduced and oxidized nitrogen at HELCOM sites

Site	Component	Unit	Jan	Febr	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Annual
DE0009R	nitrogen_dioxide	µg N /m3	2.77	2.48	1.95	2.17		1.57	1.49	1.68	1.64	2.08	2.42	4.69	2.27
DK0005R	nitrogen_dioxide	µg N /m3	3.67	2.66	2.80	3.55	1.97	1.75	1.55	2.21	2.14	2.46	0.57	0.66	2.20
DK0008R	nitrogen_dioxide	µg N /m3	2.36	1.42	1.49	2.04	1.14	0.88	0.91	1.17	1.10	1.49	1.58	2.72	1.52
EE0005R	nitrogen_dioxide	µg N /m3	3.61	3.98	3.85	3.80	2.37	2.33	1.56	1.32	1.57	2.44	2.04	3.26	2.68
EE0011R	nitrogen_dioxide	µg N /m3	1.94	1.41	1.41	3.19	2.12	2.20	1.48	1.24	1.56	2.51	1.85	3.55	2.04
FI0009R	nitrogen_dioxide	µg N /m3	0.97	1.29	1.97	2.47	1.81	1.46	1.13	1.15	0.92	1.09	0.91	1.11	1.38
FI0017R	nitrogen_dioxide	µg N /m3	2.99	2.63	2.83	2.06	1.42	1.04	0.63	0.58	0.48	1.29	2.03	2.83	1.73
LT0015R	nitrogen_dioxide	µg N /m3	1.64	1.51	1.29	1.52	0.83	0.71	0.69	1.03	0.77	1.14	1.32	2.00	1.20
LV0010R	nitrogen_dioxide	µg N /m3	1.12	1.16	0.93	0.82	0.62	0.62	0.59	0.82	0.70	0.76	0.94	1.57	0.89
LV0016R	nitrogen_dioxide	µg N /m3	0.94	0.84	0.61	0.47	0.49	0.35	0.32	0.44	0.42	0.55	0.76	1.07	0.60
PL0004R	nitrogen_dioxide	µg N /m3	2.69	1.59	1.52	1.68	1.26	0.96	1.06	1.39	1.09	1.64	2.03	3.18	1.68
SE0005R	nitrogen_dioxide	µg N /m3	0.36	0.13	0.11	0.11	0.07	0.05	0.07	0.06	0.08	0.12	0.13	0.21	0.13
SE0008R	nitrogen_dioxide	µg N /m3	0.79	0.91	1.26	1.60	0.98	1.06	0.92	0.57	0.75	0.97	1.20	1.68	1.04
SE0011R	nitrogen_dioxide	µg N /m3	1.87	2.05	1.27	1.03	0.88	1.00	0.93	0.92	1.25	1.32	2.17	3.07	1.48
SE0014R	nitrogen_dioxide	µg N /m3	2.00	2.01	1.58	1.46	1.04	1.08	0.85	0.95	1.20	1.08	1.85	2.30	1.45
DE0009R	sum_ammonia_and_ammonium	µg N /m3	2.33	1.79								1.52	1.41	1.56	
DK0008R	sum_ammonia_and_ammonium	µg N /m3	0.96	0.87	1.32	2.09	1.34	0.89	0.84	0.92	0.97	0.70	0.75	1.03	1.06
FI0009R	sum_ammonia_and_ammonium	µg N /m3	0.38	0.25	0.42	0.77	0.57	0.35	0.43	0.47	0.42	0.50	0.21	0.22	0.42
FI0017R	sum_ammonia_and_ammonium	µg N /m3	0.71	0.53	0.43	0.66	0.74	0.38	0.51	0.66	0.48	0.46	0.29	0.32	0.52
LT0015R	sum_ammonia_and_ammonium	µg N /m3	1.50	1.13	1.91	1.92	1.73	1.88	1.26	1.69	1.44	1.77	2.07	2.04	1.69
LV0010R	sum_ammonia_and_ammonium	µg N /m3	1.18	0.87	1.53	1.92	1.49	1.08	0.75	0.94	0.46	0.79	0.68	0.91	1.06
LV0016R	sum_ammonia_and_ammonium	µg N /m3	0.69	0.68	0.71	1.10	0.87	0.86	0.77	1.04	1.04	0.99	0.68	0.80	0.85
PL0004R	sum_ammonia_and_ammonium	µg N /m3	1.54	1.11	2.02	1.59	1.43	1.58	1.12	2.05	0.99	0.95	0.90	1.45	1.39
SE0005R	sum_ammonia_and_ammonium	µg N /m3	0.24	0.11	0.13	0.58	0.35	0.15	0.14	0.22	0.13	0.19	0.04	0.04	0.19
SE0011R	sum_ammonia_and_ammonium	µg N /m3	0.82	0.76	1.14	1.43	1.17	0.78	0.76	0.89	0.76	0.69	0.59	0.70	0.88
SE0014R	sum_ammonia_and_ammonium	µg N /m3	0.77	0.56	0.99	1.11	0.91	0.61	0.50	0.63	0.53	0.39	0.43	0.53	0.67
DE0009R	sum_nitric_acid_and_nitrate	µg N /m3	1.16	1.03	1.43	1.12	0.80	0.72	0.92	0.64	0.60	0.81	0.91	1.16	0.94
DK0008R	sum_nitric_acid_and_nitrate	µg N /m3	0.75	0.66	0.80	1.32	0.76	0.59	0.47	0.56	0.71	0.46	0.55	0.73	0.70
FI0009R	sum_nitric_acid_and_nitrate	µg N /m3	0.33	0.33	0.40	0.64	0.32	0.33	0.36	0.40	0.33	0.32	0.19	0.26	0.35
FI0017R	sum_nitric_acid_and_nitrate	µg N /m3	0.35	0.41	0.37	0.30	0.24	0.21	0.22	0.20	0.27	0.23	0.18	0.30	0.27

Site	Component	Unit	Jan	Febr	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Annual
LTO015R	sum_nitric_acid_and_nitrate	µg N/m ³	0.85	0.70	1.16	0.72	0.46	0.53	0.52	0.43	0.45	0.61	0.81	0.81	0.67
LV0010R	sum_nitric_acid_and_nitrate	µg N/m ³	0.44	0.51	0.71	0.45	0.19	0.36	0.29	0.29	0.31	0.33	0.26	0.47	0.39
LV0016R	sum_nitric_acid_and_nitrate	µg N/m ³	0.22	0.35	0.30	0.31	0.15	0.15	0.16	0.20	0.24	0.27	0.22	0.26	0.24
PL0004R	sum_nitric_acid_and_nitrate	µg N/m ³	0.73	0.58	1.14	0.67	0.28	0.50	0.36	0.36	0.35	0.43	0.48	0.70	0.55
SE0005R	sum_nitric_acid_and_nitrate	µg N/m ³	0.08	0.05	0.04	0.26	0.07	0.05	0.04	0.05	0.04	0.04	0.02	0.04	0.06
SE0011R	sum_nitric_acid_and_nitrate	µg N/m ³	0.52	0.59	0.67	0.65	0.36	0.36	0.23	0.33	0.39	0.25	0.43	0.57	0.45
SE0014R	sum_nitric_acid_and_nitrate	µg N/m ³	0.56	0.51	0.64	0.59	0.51	0.55	0.30	0.37	0.58	0.23	0.39		0.49

Air Concentrations of heavy metals (Pb, Cd and Hg) and lindane (γHCH) at HELCOM sites

DE0009R	cadmium	ng Cd/m ³	0.64	0.292	0.272	0.242	0.094	0.113	0.063	0.113	0.059	0.224	0.144	0.179	0.197
DK0008R	cadmium	ng Cd/m ³	0.208	0.05	0.068	0.307	0.055	0.057	0.097	0.101	0.002	0.239	0.091	0.156	0.12
LTO015R	cadmium	ng Cd/m ³	0.238	0.22	0.29	0.412	0.129	0.095	0.059	0.113	0.136	0.253	0.2	0.147	0.191
LV0010R	cadmium	ng Cd/m ³	0.284	0.228	0.205	0.307	0.103	0.159	0.072	0.23	0.155	0.115	0.11	0.105	0.171
LV0016R	cadmium	ng Cd/m ³	0.244	0.133	0.108	0.207	0.118	0.047	0.064	0.131	0.118	0.143	0.114	0.172	0.133
SE0014R	cadmium	ng Cd/m ³	0.164	0.091	0.118	0.215	0.109	0.05	0.041	0.075	0.154	0.207	0.092	0.057	0.114
DE0009R	lead	ng Pb/m ³	12.60	5.03	7.48	7.44	2.93	2.50	1.84	3.24	2.26	7.31	5.77	7.40	5.38
DK0008R	lead	ng Pb/m ³	7.22	2.48	4.06	7.26	3.52	1.97	2.00	3.38	2.86	5.11	3.10	3.93	3.91
LTO015R	lead	ng Pb/m ³	7.47	6.87	8.61	9.08	5.56	2.81	2.85	5.04	3.89	7.20	5.87	4.98	5.86
LV0010R	lead	ng Pb/m ³	2.91	2.07	4.66	9.01	10.20	3.16	2.22	7.11	3.98	3.27	2.38	2.16	4.44
LV0016R	lead	ng Pb/m ³	2.99	1.25	2.60	4.14	3.35	1.34	1.16	2.43	2.41	4.84	1.97	3.69	2.66
SE0014R	lead	ng Pb/m ³	5.52	2.82	4.34	10.10	3.85	1.72	1.46	3.08	2.71	5.08	2.46	2.89	3.81
SE0014R	mercury (aerosol)	ng Hg/m ³	13.9	15.9	19.5	17.5	14.2	13.1	8.7	8.6	9.3	11.2	13.3	9.4	13.2
SE0014R	mercury (air + aerosol)	ng Hg/m ³	1.7	1.8	1.6	1.5	1.8	1.7	1.6	1.7	1.4	1.4	1.5	1.6	1.6
DE0009R	gamma_HCH	pg γ-HCH/m ³	1.7	2.8	3.5	3.4	3.1	1.8	1.6	2.0	1.6	2.1	2.0	1.4	2.1
SE0012R	gamma_HCH	pg γ-HCH/m ³	3.0	4.0	3.0	10.0	4.0	16.0	11.0	13.0	6.0	2.0	2.0	4.0	6.9
SE0014R	gamma_HCH	pg γ-HCH/m ³	3.0	2.8	4.3	9.3	9.8	8.2	10.8	11.6	9.0	8.5	4.9	4.5	7.4