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Client: Ms. Sheila Miller, Director  
Memorial University of Newfoundland  
Department of Health & Safety  
P.O. Box 4200  
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ALL-TECH Environmental Services Ltd. was requested by Memorial University of Newfoundland (MUN) Department of Health and Safety to conduct the Annual Air Monitoring Assessment. This report is based on the Annual 2010 report conducted by MUN personnel. As indicated in the 2010 report, the sample locations were collected in various buildings known to contain asbestos, or have contained asbestos, excluding the Residences.

During sample collection and analysis, the NIOSH 7400 Method was followed. The samples were collected on a 3 piece, 25mm cellulose ester sampling cassette with a pore size of 0.8 $\mu$  m. The air sampling pumps used to collect the samples were Gast High Volume sampling pumps. The pumps were calibrated prior to sampling.

The samples were analyzed using the NIOSH 7400 Method, (Asbestos and Other Fibres by PCM) following "A" counting rules. NIOSH states in the section titled "Applicability" that "this method gives an index of airborne fibres. It is primarily used for estimating asbestos concentrations, though PCM does not differentiate between asbestos and other fibres. This method will not detect fibres < 0.25 $\mu$  m in diameter."

Should you have any questions regarding the report, please feel free to contact our office.

**Project Consultant:**

A handwritten signature in blue ink that reads 'Carla Noseworthy'.

**Carla Noseworthy, C.E.T.**  
**Environmental Consultant**  
**ALL-TECH Environmental Service Limited**

### Annual Air Monitoring Results

Sample Number	Date	Time of Collection (am/pm)	Sample Duration (Min.)	Flow Rate (L/m)	Sample Volume (Litres)	Sample Location/ Sample Description	Actual Results (f/cc)
4575	July 9	14:17	129	10.30	1328.7	Arts and Administration A1C03 in the Atrium	0.003
4579	July 9	14:18	108	10.41	1124.28	Arts and Administration A1C03 in the Atrium	0.002
4580	July 9	14:25	113	10.25	1158.25	Arts and Administration A2C03 near Room A2030	0.005
5039	July 9	14:35	112	10.15	1136.8	Arts and Administration A3C03 near Room A3080	0.001
4578	July 9	14:41	103	10.14	1044.2	Arts and Administration A4C01 near Room A4031	0.006
4823	July 20	15:30	100	10.62	1062	Biotechnology BT3C02	0.004
4822	July 20	15:32	101	10.42	1052	Biotechnology BT3S02	0.003
4929	July 19	17:47	103	10.43	1074.29	Business Administration BN1017	0.002
4932	July 19	17:57	100	10.49	1049	Business Administration BN2C02 near Room BN2005	0.003
5024	July 19	18:01	100	10.09	1009	Business Administration BN3C01 near Room 3000A	0.001
4927	July 19	18:06	100	10.60	1060	Business Administration BN4013	0.003
5047	July 12	12:18	100	10.29	1029	Chemistry Physics Outside Room CP1017A	0.002
5036	July 12	11:58	100	10.35	1035	Chemistry Physics Outside Room CP2010	0.002
5044	July 12	12:28	100	10.48	1048	Chemistry Physics CP3055	0.005

Sample Number	Date	Time of Collection (am/pm)	Sample Duration (Min.)	Flow Rate (L/m)	Sample Volume (Litres)	Sample Location/ Sample Description	Actual Results (f/cc)
4826	July 21	14:55	96	10.89	1045	Computing Services CS1C01	0.003
4591	July 21	16:00	95	10.68	1015	Coughlan College CL2C04	0.003
4937	July 20	11:01	170	11.01	1871.7	Coughlan College CL1V02	0.002
4946	July 20	15:01	123	10.39	1277.97	Dining Hall DH1000	0.002
4940	July 20	15:04	118	10.39	1226.02	Dining Hall DH2006	0.002
4938	July 20	14:54	122	10.48	1279	Earth Science ER6C01	0.003
5049	July 12	15:15	100	10.48	1048	Education ED1C05	0.003
5028	July 13	14:57	100	10.56	1056	Education ED2C01 outside Room ED2017	0.004
5043	July 12	14:40	100	10.29	1029	Education Hallway outside Room ED3048	0.004
5038	July 13	14:46	100	10.38	1038	Education ED4C03 outside Room ED4031B	0.002
5033	July 18	19:14	89	10.61	944.29	Engineering EN1C01 outside Room EN1051	0.002
5037	July 18	19:20	86	10.52	903.86	Engineering EN2C01 outside Room EN2007	0.002
5045	July 18	19:25	83	10.41	864.03	Engineering EN3C01 outside Room EN3075	0.002
5050	July 18	19:33	82	10.24	839.68	Engineering EN4C01 outside Room EN4034	0.002
5010	July 6	15:15	100	10.00	1000	Facilities Management FM1V02	0.004
5009	July 6	15:01	106	10.04	1064.39	Facilities Management FM2C02	0.0004

Sample Number	Date	Time of Collection (am/pm)	Sample Duration (Min.)	Flow Rate (L/m)	Sample Volume (Litres)	Sample Location/ Sample Description	Actual Results (f/cc)
4920	July 19	13:58	111	10.29	1142.19	Field Hall GH1S01	0.005
4917	July 19	13:43	111	10.49	1164.28	Field Hall GH2C01 outside Room GH2012	0.003
4909	July 19	13:51	118	10.43	1230.74	Field Hall GH3C01 outside Room GH3020	0.004
4906	July 19	13:55	108	10.51	1135.08	Field Hall GH4C02 outside Room GH4001	0.003
4943	July 20	9:51	197	10.48	2064.56	Health Sciences Center, outside Room HS1616	0.003
4945	July 20	10:10	187	10.39	1942.93	Health Sciences Center, outside Room HS2804	0.0008
4944	July 20	10:15	185	10.51	1944.35	Health Sciences Center, outside Room HS2942	0.006
4819	July 20	11:43	97	10.42	1011	Health Sciences Center, outside Room HS3434	0.003
4818	July 20	11:46	99	10.62	1051	Health Sciences Center, outside Room HS4333	0.002
4820	July 20	13:28	101	10.42	1052	Health Sciences Center, outside Room HS 5339	0.002
5034	July 13	12:25	100	10.52	1052	Library L4017	0.002
4817	July 20	10:17	313	2.54	795.02	Mathematics Ceiling space above HH1011	0.003
4912	July 18	10:36	100	10.24	1024	Mathematics HH1C02 near Room 1004	0.003
4915	July 18	10:42	100	10.61	1061	Mathematics HH2C01 near Room 2011	0.004

Sample Number	Date	Time of Collection (am/pm)	Sample Duration (Min.)	Flow Rate (L/m)	Sample Volume (Litres)	Sample Location/ Sample Description	Actual Results (f/cc)
4911	July 20	10:22	312	3.023	943.176	Mathematics Ceiling space above HH2018	0.002
4908	July 18	11:43	100	10.41	1041	Mathematics HH3C01 near Room 3059	0.001
4919	July 20	10:28	311	2.83	880.13	Mathematics Ceiling space above HH3005	0.002
5002	July 5	14:01	100	10.0	1000	Ocean Sciences Center OS2C01	0.0004
5001	July 5	14:09	100	10.0	1000	Ocean Sciences Center AX4C01 outside Room AX4014	0.0004
4914	July 18	14:16	100	10.61	1061	Physical Education PE1C02	0.001
4916	July 18	13:26	100	10.41	1041	Physical Education PE2C05 outside Room PE2015	0.005
4913	July 18	13:35	100	10.24	1024	Physical Education PE3C01 outside Room PE3005	0.002
4941	July 21	13:51	187	11.11	2078	Printing Services PS1005	0.002
5031	July 19	11:02	100	10.60	1060	Queens College QC1C01 near Room QC1003	0.002
5040	July 19	10:58	100	10.52	1052	Queens College QC1C01 outside Room QC2000	0.0007
5032	July 19	11:10	100	10.43	1043	Queens College QC3C01 outside Room QC3001	0.001
4918	July 19	11:15	100	10.51	1051	Queens College QC4C01 outside Room QC4001	0.004

Sample Number	Date	Time of Collection (am/pm)	Sample Duration (Min.)	Flow Rate (L/m)	Sample Volume (Litres)	Sample Location/ Sample Description	Actual Results (f/cc)
5019	July 9	10:28	94	10.25	963.5	Science SN1C02 outside Room SN1006	0.006
5016	July 9	10:27	95	10.18	967.1	Science SN1C04 outside Room SN1076	0.004
5022	July 9	10:46	102	10.25	1045.5	Science SN2C02 outside Room SN2013	0.002
5021	July 9	10:38	92	10.30	947.6	Science SN2C06 outside Room SN2092	0.002
5023	July 9	10:57	94	10.15	954.1	Science SN3C02 outside Room SN3007	0.001
5024	July 9	11:02	90	10.14	912.6	Science SN3C03 outside Room SN3033	0.004
5025	July 9	11:02	95	10.41	988.95	Science SN4C02 outside Room SN4006	0.002
4576	July 9	12:21	91	10.30	937.3	Science SN4C03 outside Room SN4019	0.002
4928	July 21	13:45	130	11.65	1515	South Campus Boiler Room BR1002A	0.002
4907	July 19	14:17	100	10.51	1051	Spencer Hall SP2C02	0.002
4910	July 19	14:10	100	10.43	1043	Spencer Hall SP1C01 near the Elevator	0.002
4931	July 19	17:53	120	10.60	1272	St. John's College J2C03	0.001
4934	July 19	17:54	101	10.43	1053	St. John's College J3C02	0.003
4935	July 19	18:01	97	10.51	1019.47	St. John's College J4C01	0.001
4670	July 5	9:45	95	10.0	950	Utilities Annex 1001	0.003

Sample Number	Date	Time of Collection (am/pm)	Sample Duration (Min.)	Flow Rate (L/m)	Sample Volume (Litres)	Sample Location/ Sample Description	Actual Results (f/cc)
4225	July 21	11:04	94	11.14	1047.16	Vivarium 1C02	0.002
4947	July 21	10:17	101	10.68	1078.68	208 Elizabeth Ave. BP2001	0.002
4939	July 21	10:08	138	11.11	1533.18	202 Elizabeth Ave. CE2001	0.002
4936	July 21	10:03	137	10.89	1491.93	6 Clark Pl CM1000	0.002

Note: Air monitoring results were within acceptable limits during sampling period. Less than 0.1 F/cc is Acceptable.

**NOTES:**

- It should be noted that access to the 4<sup>th</sup> Floor Chemistry-Physics Building was not available for sampling, as power was not available due to construction.
- Access to 4 Clark Place was not available during sampling periods.

**Project Consultant:**

  
**Carla Noseworthy, C.E.T.**  
**Environmental Consultant**  
**ALL-TECH Environmental Service Limited**

# APPENDIX I

## PUMP CALIBRATION LOG SHEET



Date	Flow Rate (L/min)	Pump ID	Calibrated by
July 5, 2011	10.00	AT-026	CG
July 5, 2011	10.00	AT-014	CG
July 5, 2011	10.00	AT-200	CN
July 6, 2011	10.04	AT-014	CN
July 6, 2011	10.00	AT-026	CN
July 9, 2011	10.15	AT-200	CN
July 9, 2011	10.14	AT-014	CN
July 9, 2011	10.41	AT-402	CN
July 9, 2011	10.30	AT-201	JG
July 9, 2011	10.25	AT-026	CN
July 9, 2011	10.25	AT-401	CN
July 9, 2011	10.18	AT-202	CN
July 12, 2011	10.82	AT-202	JS
July 12, 2011	10.29	AT-202	JS
July 12, 2011	10.48	AT-200	JS
July 12, 2011	10.38	AT-402	JS
July 12, 2011	10.47	AT-201	JS
July 12, 2011	10.35	AT-401	CN
July 12, 2011	10.29	AT-026	CN
July 13, 2011	10.38	AT-200	CN
July 13, 2011	10.56	AT-401	CN
July 13, 2011	10.52	AT-202	CN
July 13, 2011	10.45	AT-026	CN
July 18, 2011	10.61	AT-401	JS
July 18, 2011	10.24	AT-202	JS
July 18, 2011	10.41	AT-402	JS
July 18, 2011	10.68	AT-014	JS

Date	Flow Rate (L/min)	Pump ID	Calibrated by
July 18, 2011	10.85	AT-026	JS
July 18, 2011	10.52	AT-200	JS
July 19, 2011	10.09	AT-201	CG
July 19, 2011	10.29	AT-202	CN
July 19, 2011	10.43	AT-201	CN
July 19, 2011	10.51	AT-014	CN
July 19, 2011	10.49	AT-026	CN
July 19, 2011	10.51	AT-200	JS
July 19, 2011	10.43	AT-402	JS
July 19, 2011	10.60	AT-401	JS
July 20, 2011	11.01	AT-200	CN
July 20, 2011	10.39	AT-202	CN
July 20, 2011	10.48	AT-201	CN
July 20, 2011	10.39	AT-026	CN
July 20, 2011	10.48	AT-030	CG
July 20, 2011	10.62	AT-401	JS
July 20, 2011	10.42	AT-402	JS
July 20, 2011	10.51	--	CG
July 20, 2011	3.023	--	JS
July 20, 2011	2.83	801863	JS
July 20, 2011	2.54	800485	JS
July 21, 2011	11.65	AT-200	JS
July 21, 2011	11.11	AT-202	JS
July 21, 2011	10.68	AT-026	JS
July 21, 2011	11.04	AT-401	CN
July 21, 2011	11.14	--	CN
July 21, 2011	10.89	AT-402	CN

