February 26, 2018 Pinchin File No. 02-02-01862

Department of Health and Safety
Memorial University of Newfoundland
208 Elizabeth Avenue
St. John's, NL
A1C 5S7

Attention: Barbara Battcock

Re: Airborne Fibre Monitoring, Memorial University of Newfoundland, St. John's, NL

Memorial University of Newfoundland; Department of Health & Safety (MUN) retained Pinchin LeBlanc Environmental to conduct Airborne Fibre Monitoring in various buildings located on the MUN campus. Sample locations were determined by referencing the previous locations as identified in the 2012 annual sampling report entitled MUN Airborne Fibre Monitoring December 2012. As various buildings and tunnels known to contain asbestos or have previously contained asbestos, residences were not included as part of the sampling. Sampling was conducted in January and February 2018.

1.0 Background

The results of the airborne fibre monitoring were evaluated against the applicable occupational exposure limits outlined in the Occupational Health and Safety Regulations under the Occupational Health and Safety Act (O.C. 2012-005), Consolidated Newfoundland and Labrador Regulation 5/12. The Regulation has adopted for use, the American Conference of Governmental Industrial Hygienists (ACGIH). In the act, under the heading Hazardous Substances, in section 42 (7) sub section (c) it states that "An employer shall ensure that (c) exposure of a worker to hazardous substances is as minimal as is reasonably practicable, and where a threshold limit value has been established by the ACGIH, exposure shall not exceed the threshold limit value". The TLV-TWA as published for all forms of asbestos is 0.1 fibres/cc.

2.0 Sample Methodology

A total of eighty-four (84) airborne fibre samples were collected at fixed locations in various areas throughout the MUN campus.

Sampling for airborne fibres was conducted by collecting a known volume of air through cellulose mixed ester filters, 0.8 micrometers pore size, held open-faced in 3-piece conductive cassettes. The filters were 25 mm in diameter. The sampling equipment used was direct flow high volume air sample pumps and BDX II low volume sampling pumps. The sample pumps were calibrated with a TSI Model 4199 flow meter calibrator.

Pinchin inspectors/technicians are enrolled in the IRSST (Instituit de recherché Robert-Sauve en sante et en securite du travail), a comprehensive quality assurance programme. Each analyst/technician who completed the analysis participated in round robin proficiency testing on a set basis in order to remain certified with IRSST.

It should be noted that analysis of PCM air samples using this method, is on a quantitative basis. The "A" set of rules counts all types of fibres collected from the ambient air, which meet the analysis criteria, regardless of the type of fibres counts.

Analysis was competed following the NIOSH 7400 method and utilizing "A" set of counting rules.

3.0 Summary of Data

The attached table listing the locations and results of the airborne fibre sampling.

Should you have any questions or require additional information, please contact either of the undersigned at our office (709-754-4490).

Yours truly,

PINCHIN LEBLANC ENVIRONMENTAL LIMITED

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Building	Location	Date	Sample ID	Duration (min)	Flow Rate (L/min)	Volume (L)	Reported Result* (f/cc)
Health Science Centre	Outside H-1J440	February 14	01-H-02-02-1862-A001	60	15.0	900	<0.02
	Outside H-1801	February 14	02-H-02-02-1862-A002	60	15.0	900	<0.02
	Outside H-2J705	February 14	03-H-02-02-1862-A003	60	15.0	900	<0.02
	H-2C01 (Cafeteria)	February 14	04-H-02-02-1862-A004	60	15.0	900	<0.02
	Outside H-3136	February 14	05-H-02-02-1862-A005	120	15.0	1800	<0.01
	H-4C01	February 14	06-H-02-02-1862-A006	60	15.0	900	<0.02
	Zone 218	February 14	07-H-02-02-1862-A007	60	15.0	900	<0.02
Spencer Hall	SP-1C01	January 18	01-SP-02-02-1862-A008	60	15.0	900	<0.02
	Outside SP-2001	January 18	02-SP-02-02-1862-A009	60	15.0	900	<0.02
Coughlan College	CL-1010	January 19	01-CL-02-02-1862A010	63	15.0	945	<0.02
	CL-2C01	January 19	02-CL-02-02-1862-A011	63	15.0	945	<0.02
Business & Administration	BN-1015	January 17	01-BN-02-02-1862-A012	60	15.0	900	<0.02
	Outside BN-2016	January 17	02-BN-02-02-1862-A013	60	15.0	900	<0.02
	Outside BN-3034	January 17	03-BN-02-02-1862-A014	60	15.0	900	<0.02
	BN-4014	January 17	04-BN-02-02-1862-A015	60	15.0	900	<0.02
Field Hall	GH-1C01	January 17	01-GH-02-02-1862-A016	60	15.0	900	<0.02
	Outside GH-2015	January 17	02-GH-02-02-1862-A017	61	15.0	915	<0.02
	GH-3C01	January 17	03-GH-02-02-1862-A018	60	15.0	900	<0.02
	GH-4C01	January 17	04-GH-02-02-1862-A019	60	15.0	900	<0.02
Queens College	QC-2C01	January 19	01-QC-02-02-1862-A020	60	15.0	900	<0.02
	QC-1C01	January 19	02-QC-02-02-1862-A021	60	15.0	900	<0.02
	QC-3C01	January 19	03-QC-02-02-1862-A022	60	15.0	900	<0.02
	QC-4C01	January 19	04-QC-02-02-1862-A023	60	15.0	900	<0.02
Ocean Science Centre	Outside OS-1014	January 18	01-OS-02-02-1862-A024	60	15.0	900	<0.02
Ocean Science Centre Annex	Outside AX-2002	January 18	01-AX-02-02-1862-A025	61	15.0	915	<0.02
Vivarium	V-1C01	February 23	01-AX-02-02-1862-A026	60	15.0	900	<0.02
Utilities Annex	UA-1001	January 19	01-UA-02-02-1862-A027	60	15.0	900	<0.02
South Campus Boiler Plant	Outside SB-1001A	January 19	01-SB-02-02-1862-A028	60	15.0	900	<0.02
Physical Education	Outside PE-1004	February 12	01-PE-02-02-1862-A029	60	15.0	900	<0.02
	PE-2C04	February 12	02-PE-02-02-1862-A030	60	15.0	900	<0.02
	PE-3C04	February 12	03-PE-02-02-1862-A031	60	15.0	900	<0.02
Facilities Management	Outside FM-2018	February 8	01-FM-02-02-1862-A032	60	15.0	900	<0.02
	Outside FM-1017	February 8	02-FM-02-02-1862-A033	60	15.0	900	<0.02
Education	Outside ED-2007C	January 23	01-ED-02-02-1862-A034	65	15.0	975	<0.02
	ED-3C01	January 23	02-ED-02-02-1862-A035	65	15.0	975	<0.02
	ED-4C01	January 23	03-ED-02-02-1862-A036	65	15.0	975	<0.02
	ED-1C02	January 23	04-ED-02-02-1862-A037	65	15.0	975	<0.02

Building	Location	Date	Sample ID	Duration (min)	Flow Rate (L/min)	Volume (L)	Reported Result* (f/cc)
Library	L-1005	February 6	01-L-02-02-1862-A038	60	15.0	900	<0.02
4 Clark Place	Outside CK-2000	February 23	01-CK-02-02-1862-A039	60	15.0	900	<0.02
202 Elizabeth Avenue	CE-2001A	February 23	01-CE-02-02-1862-A040	60	15.0	900	<0.02
Science	Outside SN-1076	February 7	01-SN-02-02-1862-A041	60	15.0	900	<0.02
	Outside SN-1107A	February 7	02-SN-02-02-1862-A042	60	15.0	900	<0.02
	Outside SN-2000	February 26	03-SN-02-02-1862-A043	60	15.0	900	<0.02
	Outside SN-2027	February 26	04-SN-02-02-1862-A044	60	15.0	900	<0.02
	Outside SN-3033	February 26	05-SN-02-02-1862-A045	60	15.0	900	<0.02
	Outside SN-3022	February 26	06-SN-02-02-1862-A046	60	15.0	900	<0.02
	Outside SN-4025	February 26	07-SN-02-02-1862-A047	60	15.0	900	<0.02
	Outside SN-4045	February 26	08-SN-02-02-1862-A048	60	15.0	900	<0.02
Chemistry-Physics	C-1C05	January 26	01-C-02-02-1862-A049	60	15.0	900	<0.02
	C-2C04	January 26	02-C-02-02-1862-A050	60	15.0	900	<0.02
	C-3C04	January 26	03-C-02-02-1862-A051	60	15.0	900	<0.02
	C-4C04	January 26	04-C-02-02-1862-A052	60	15.0	900	<0.02
Biotechnology	BT-3S01	January 19	01-BT-02-02-1862-A053	60	15.0	900	<0.02
	BT-2S01	January 19	02-BT-02-02-1862-A054	60	15.0	900	<0.02
Printing Services	Outside PS-1003	January 22	01-PS-02-02-1862-A055	60	15.0	900	<0.02
Computing Services	CS-1C02	February 6	01-CS-02-02-1862-A056	60	15.0	900	<0.02
208 Elizabeth Avenue	BP-2001	February 26	01-BP-02-02-1862-A057	60	15.0	900	<0.02
6 Clark Place	Research Lab #2	January 22	01-CM-02-02-1862-A058	60	15.0	900	<0.02
Arts & Administration	Outside A-1014	February 8	01-A-02-02-1862-A059	60	15.0	900	<0.02
	Outside A-1026	February 8	02-A-02-02-1862-A060	60	15.0	900	<0.02
	Outside A-2020	February 8	03-A-02-02-1862-A061	60	15.0	900	<0.02
	Outside A-3005	February 8	04-A-02-02-1862-A062	60	15.0	900	<0.02
	Outside A-4031	February 8	05-A-02-02-1862-A063	60	15.0	900	<0.02
Dining Hall	DH-1000	January 19	01-DH-02-02-1862-A064	60	15.0	900	<0.02
	DH-2C01	January 19	02-DH-02-02-1862-A065	60	15.0	900	<0.02
Engineering	Outside EN-1027	January 26	01-EN-02-02-1862-A066	60	15.0	900	<0.02
	Outside EN-2073	January 26	02-EN-02-02-1862-A067	60	15.0	900	<0.02
	Outside EN-3025	January 26	03-EN-02-02-1862-A068	60	15.0	900	<0.02
	Outside EN-4020	January 26	04-EN-02-02-1862-A069	60	15.0	900	<0.02
Mathematics	HH-1C01	January 26	01-HH-02-02-1862-A070	60	15.0	900	<0.02
	HH-1S03 (above ceiling)	January 24	02-HH-02-02-1862-A071	180	2.5	450	<0.04
	HH-2C01	January 26	03-HH-02-02-1862-A072	60	15.0	900	<0.02
	HH-2S03 (above ceiling)	January 24	04-HH-02-02-1862-A073	180	2.5	450	<0.04
	HH-3C01	February 8	05-HH-02-02-1862-A074	60	15.0	900	<0.02

Building	Location	Date	Sample ID	Duration (min)	Flow Rate (L/min)	Volume (L)	Reported Result* (f/cc)
	HH-3S03 (above ceiling)	January 24	06-HH-02-02-1862-A075	180	2.5	450	<0.04
Earth Science	ER-1C01 Main Entrance	February 20	01-ER-02-02-1862-A076	60	15.0	900	<0.02
Tunnels	Patton College Tunnel (Back)	February 13	01-T-02-02-1862-A077	180	2.5	450	<0.04
	Arts-Library Main Tunnel	February 13	02-T-02-02-1862-A078	180	2.5	450	<0.04
	Dining Hall Tunnel	February 13	03-T-02-02-1862-A079	180	2.5	450	<0.04
	Physical Education-Arts Tunnel	February 13	04-T-02-02-1862-A080	180	2.5	450	<0.04
	Library Tunnel	February 13	05-T-02-02-1862-A081	180	2.5	450	<0.04
	Patton College Tunnel (Main)	February 13	06-T-02-02-1862-A082	180	2.5	450	<0.04
	Science-Math Tunnel	February 13	07-T-02-02-1862-A083	180	2.5	450	<0.04
	Main Tunnel near Bruneau and Patton College	February 13	08-T-02-02-1862-A084	180	2.5	450	<0.04

* Airborne fibre calculated results less than the detection limit for the volume sampled is reported as less than the detection limit. For example, the detection limit for 360 to 449 L of air is 0.05 fibres/cc – a result below this value is reported as <0.05 fibres/cc.