



AIRBORNE ASBESTOS ANALYSIS BY TRANSMISSION ELECTRON MICROSCOPY

CLIENT: Warren & Panzer Engineers, P.C.
LABORATORY ID #: T02-11-059
ANALYT. METHODOLOGY: AHERA
FILTER TYPE: M.C.F.
AVERAGE G.O. AREA (mm²): 0.013433

PROJECT: NYC DEP, 100 Church Street
DATE OF REPORT: 11/12/02
DATE OF ANALYSIS: 11/12/02
EFFECTIVE FILTER AREA (mm²): 385

LABORATORY RESULTS

CLIENT #	LAB. ID #	LOCATION	VOLUME (lt)	G.O.'s ANALYZED	AREA ANALYZED (mm ²)	ANALYT. SENSITIV. (struct./cm ³)	TOTAL ASBESTOS AIR CONC. (struc./cm ³)	TOTAL ASBESTOS FILTER CONC. (str./mm ²)	AIR CONC. FOR STRUCT. 0.5≤S<5μm	AIR CONC. FOR STRUCT. S≥5.0μm	ASBEST. TYPE CHRYS.	AMPHIB. ASBEST. TYPE SPECIFY
01	T02-11-059-4000	By entrance to set back	1440	4	0.0537	0.0050	<0.0050	<18.61	NA	NA	NA	NA
02	T02-11-059-4001	North set back 14 th floor	1440	4	0.0537	0.0050	<0.0050	<18.61	NA	NA	NA	NA
03	T02-11-059-4002	South set back 14 th floor	1440	4	0.0537	0.0050	<0.0050	<18.61	NA	NA	NA	NA
04	T02-11-059-4003	East set back 14 th floor	1440	4	0.0537	0.0050	0.0100	37.22	<0.0050	0.0100	Chrys.	NA
05	T02-11-059-4004	West set back 14 th floor	1440	4	0.0537	0.0050	0.0050	18.61	0.0050	<0.0050	Chrys.	NA

ANALYST
E. Sioukri

LABORATORY DIRECTOR
Spiro Dongaris

LABORATORY CERTIFICATION NUMBERS: NVLAP 101958, ELAP 10955

- Athenica Environmental Services Inc. (AES), is responsible only for information pertaining to samples taken by its employees.
- Air sampling cassettes will be stored for sixty (60) days. AES Inc., should be notified within this time frame for a true duplicate analysis
- If AES Inc., did not conduct the sampling, the reported airborne concentration was derived based on information provided by the client. Under these circumstances, the air concentration data is supplied solely for the convenience of the client.
- The report relates only to items tested. This report must not be used to claim product endorsement by NVLAP or any other agency of the U.S. Government. Test reports may not be reproduced except in full and with prior approval of AES Inc.
- The liability of Athenica Environmental Services Inc. with respect to the services charged, shall in no event exceed the amount of the invoice

ENVIRONMENTAL SERVICES INC

TEM DEPARTMENT

CLIENT : WARREN & PANZER	DATE : 11/12/02
PROJECT : NCDER/100 CHURCH ST.	ANALYST : E.S.
BATCH # : T02-11-059	CLIENT ID # : 1
SAMPLE ID # : T02-11-059-4000	VOLUME (lt) : 1440
G.O. AREA (mm ²) : 0.013433	GO's TO ANALYZE : 4
MAGNIFICATION : 19K	ACC. VOLTAGE (KeV) : 100
INSTRUMENT : JEOL 100CX II	FILTER AREA (mm ²) : 385
ANALYTICAL METHODOLOGY: EPA FEDERAL REGISTER, VOL. 52, No 210, OCT. 30, 1987, #40 CFR, PART 763, APPENDIX A TO SUBPART E	

[illegible]

Analytical Sensitivity (str/cm ³):	0.0050	Eucentricity check:	✓
Concentration (str/cm ³):	0.0050	*Grid acceptance criteria check:	(A)...✓(B)....✓
Concentration (str/mm ²):	18.61	**CHR. #STRUCT.: F	01 M 0 C 0 B 0
Number of Asbestos Structures:	0.5 ≤ S < 5 μm .01.	**AMPH. #STRUCT.: F	M C B
	S ≥ 5 μm 0....	Specify AMPH. Type:	AM. ACT. TRE.
Number of Non-asbestos Structures:	0.....	CRO. ANTH.	

** CHR.=chrysotile, AMPH.=amphibole, AM.=amosite, ACT.=actinolite, TRE.=tremolite, CRO.=crocidolite, ANTH.=anthophyllite

ENVIRONMENTAL SERVICES INC.

Tel. (718) 784-7480
Fax (718) 784-4086

CLIENT : WARREN & PANZER	DATE : 11/12/02
PROJECT : NCDOP/100 CHURCH ST.	ANALYST : E.S.
BATCH # : T02-11-059	CLIENT ID # : 2
SAMPLE ID # : T02-11-059-4001	VOLUME (lt) : 1440
G.O. AREA (mm ²) : 0.013433	GO's TO ANALYZE : 4
MAGNIFICATION : 19K	ACC. VOLTAGE (KeV) : 100
INSTRUMENT : JEOL 100CX II	FILTER AREA (mm ²) : 385
ANALYTICAL METHODOLOGY: EPA FEDERAL REGISTER, VOL. 52, No 210, OCT. 30, 1987, #40 CFR, PART 763, APPENDIX A TO SUBPART E	

[illegible]

Analytical Sensitivity (str/cm ²):	0.0050	Eucentricity check :	
Concentration (str/cm ²):	<0.0050	*Grid acceptance criteria check :	(A).....(B).....
Concentration (str/mm ²):	<18.61	**CHR. # STRUCT.:	F M C B
Number of Asbestos Structures :	0.5≤S<5µm 0...	**AMPH. # STRUCT.:	F M C B
	S≥5µm 0...	Specify AMPH. Type :	AM. ACT. TRE.
Number of Non-asbestos Structures:.....	0...	CRO. ANTH.	

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Long Island City, N.Y. 11104

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TEM AHERA COUNTSHEET

CLIENT : WARREN & PANZER	DATE : 11/12/02
PROJECT : NCDERP/100 CHURCH ST.	ANALYST : E.S.
BATCH # : T02-11-059	CLIENT ID # : 3
SAMPLE ID # : T02-11-059-4002	VOLUME (lit) : 1440
G.O. AREA (mm ²) : 0.013433	GO's TO ANALYZE : 4
MAGNIFICATION : 19K	ACC. VOLTAGE (KeV) : 100
INSTRUMENT : JEOL 100CX II	FILTER AREA (mm ²) : 385
ANALYTICAL METHODOLOGY: EPA FEDERAL REGISTER, VOL. 52, No 210, OCT. 30, 1987, #40 CFR, PART 763, APPENDIX A TO SUBPART E	

[illegible]

Analytical Sensitivity (str/cm ²):	0.0050	Eucentricity check :	
Concentration (str/cm ²):	<0.0050	*Grid acceptance criteria check :	(A) ✓ (B) ✓
Concentration (str/mm ²):	<18.61	**CHR. # STRUCT.:	F M C B
Number of Asbestos Structures :	0.5 ≤ S < 5 μm 0...	**AMPH. # STRUCT.:	F M C B
	S ≥ 5 μm 6...	Specify AMPH. Type :	AM ACT TRE
Number of Non-asbestos Structures:	 0...	CRO ANTH.	

* Replica covers >50%, at least 20 GO's with no overlapping or folded replica, intact GO's have >50% coverage, <50% Undissolved filter, <5% holes or opaque areas, <10% particulate coverage.

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TEM DEPARTMENT

TEM AHERA COUNTSHEET

CLIENT : WARREN & PANZER	DATE : 11/12/02
PROJECT : NCDDEP/100 CHURCH ST.	ANALYST : E.S.
BATCH # : T02-11-059	CLIENT ID # : 4
SAMPLE ID # : T02-11-059-4003	VOLUME (lt) : 1440
G.O. AREA (mm ²) : 0.013433	GO's TO ANALYZE : 4
MAGNIFICATION : 19K	ACC. VOLTAGE (KeV) : 100
INSTRUMENT : JEOL 100CX II	FILTER AREA (mm ²) : 385
ANALYTICAL METHODOLOGY: EPA FEDERAL REGISTER, VOL. 52, No 210, OCT. 30, 1987, #40 CFR, PART 763, APPENDIX A TO SUBPART E	

[illegible]

Analytical Sensitivity (str/cm ⁵):	0.0050	Eucentricity check :	
Concentration (str/cm ⁵) :	0.0100	*Grid acceptance criteria check :	(A)..... (B).....
Concentration (str/mm ⁵) :	37.22	**CHR. # STRUCT.:	F 0 M 0 C 0 B 0
Number of Asbestos Structures :	0.5 ≤ S < 5 μm 0...	**AMPH. # STRUCT.:	F M C B
	S ≥ 5 μm 02..	Specify AMPH. Type :	AM. ACT. TRE.
Number of Non-asbestos Structures:	0.....	CRO. ANTH.	

* Replica covers >50%, at least 20 GO's with no overlapping or folded replica, intact GO's have >50% coverage, <50% Undissolved filter, <5% holes or opaque areas, <10% particulate coverage.

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CLIENT : WARREN & PANZER	DATE : 11/12/02
PROJECT : NCDEP/100 CHURCH ST.	ANALYST : E.S.
BATCH# : T02-11-059	CLIENT ID# : 5
SAMPLE ID# : T02-11-059-400 4	VOLUME (lt) : 1440
G.O. AREA (mm ²) : 0.013433	GO's TO ANALYZE : 4
MAGNIFICATION : 19K	ACC. VOLTAGE (KeV) : 100
INSTRUMENT : JEOL 100CX II	FILTER AREA (mm ²) : 385
ANALYTICAL METHODOLOGY: EPA FEDERAL REGISTER, VOL. 52, No 210, OCT. 30, 1987, #40 CFR, PART 763, APPENDIX A TO SUBPART E	

[illegible]

Analytical Sensitivity (str/cm ²):	0.0050	Eucentricity check:	
Concentration (str/cm ²):	0.0050	*Grid acceptance criteria check:	(A)... (B)...
Concentration (str/mm ²):	18.61	**CHR. # STRUCT.:	F 0 M 0 C 0 B 0
Number of Asbestos Structures:	0.5 ≤ S < 5 μm: 01	**AMPH. # STRUCT.:	F M C B
	S ≥ 5 μm: 0...	Specify AMPH. Type:	AM. ACT. TRE.
Number of Non-asbestos Structures:	0...	CRO. ANTH.	

* Replica covers >50%, at least 20 GO's with no overlapping or folded replica, intact GO's have >50% coverage, <50% Undissolved filter, <5% holes or opaque areas, <10% particulate coverage.

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