NYC 9/11 Public Portal Document

ATHENICA
ENVIRONMENTAL SERVICES INC.
Tel. (718) 784-7490
Fax. (718) 784-4085

# AIRBORNE ASBESTOS ANALYSIS BY TRANSMISSION ELECTRON MICROSCOPY

**CLIENT:** Warren & Panzer Engineers, P.C.
**LABORATORY ID #:** T02-10-043
**ANALYT. METHODOLOGY:** AHERA
**FILTER TYPE:** M.C.E.
**AVERAGE G.O. AREA ($mm^2$):** 0.013838

**PROJECT:** NYC DEP, 17 John Street
**DATE OF REPORT:** 10/08/02
**DATE OF ANALYSIS:** 10/08/02
**EFFECTIVE FILTER AREA ($mm^2$):** 385

## LABORATORY RESULTS

| CLIENT # | LAB. ID # | LOCATION | VOLUME (lt) | G.O.'s ANAL YZED | AREA ANALY ZED ($mm^2$) | 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 | T02-10-043-2893 | Clean room personal decon | 1440 | 4 | 0.0554 | 0.0048 | **<0.0048** | **<18.07** | NA | NA | NA | NA |
| 02 | T02-10-043-2894 | North area | 1440 | 4 | 0.0554 | 0.0048 | **<0.0048** | **<18.07** | NA | NA | NA | NA |
| 03 | T02-10-043-2895 | West area | 1440 | 4 | 0.0554 | 0.0048 | **0.0097** | **36.13** | <0.0048 | 0.0097 | Chrys. | NA |
| 04 | T02-10-043-2896 | South area | 1440 | 4 | 0.0554 | 0.0048 | **<0.0048** | **<18.07** | NA | NA | NA | NA |
| 05 | T02-10-043-2897 | East area | 1440 | 4 | 0.0554 | 0.0048 | **0.0145** | **54.20** | <0.0048 | 0.0145 | Chrys. | NA |

**ANALYST**
E. Dimitrakas

**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.

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## TEM DEPARTMENT

## TEM AHERA COUNTSHEET

| | |
|---|---|
| CLIENT : Warren Planear Eng | DATE : 10/08/02 |
| PROJECT : NYC DEP / 17 John St | ANALYST : END |
| BATCH # : T02,010-043 | CLIENT ID # : 01 |
| SAMPLE ID # : T02,010-043-2893 | VOLUME (lt) : 1440 |
| G.O. AREA ($mm^2$) : 0.013838 | 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 | |

| GRID | GO ID | Str. # | Str. Classf. | L (µm) | W (µm) | Structure sketch | SAED | EDXA | PHOTO# | ID |
|---|---|---|---|---|---|---|---|---|---|---|
| A | C5 | N>2 | | | | | | | | |
| | H5 | N>2 | | | | | | | | |
| B | B4 | N>2 | | | | | | | | |
| | H6 | N>2 | | | | | | | | |
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| Analytical Sensitivity (str/$cm^3$): 0.0048 | Eucentricity check : ✓ |
| Concentration (str/$cm^3$) : < 0.0048 | *Grid acceptance criteria check : (A)..✓. (B)..✓ |
| Concentration (str/$mm^2$) : < 18.07 | **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. |

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



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# TEM AHERA COUNTSHEET

| | |
|---|---|
| CLIENT : Warren & Panzer Eng | DATE : 10/08/02 |
| PROJECT : NYC DEP / 17 John St | ANALYST : END |
| BATCH # : 702,010-043 | CLIENT ID # : 02 |
| SAMPLE ID # : 702,010-043-2894 | VOLUME (lt) : 1440 |
| G.O. AREA ($mm^2$) : 0.013838 | 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 | |

| GRID | GO ID | Str. # | Str. Classf. | L (µm) | W (µm) | Structure sketch | SAED | EDXA | PHOTO# | ID |
|---|---|---|---|---|---|---|---|---|---|---|
| B | D8 | N>2 | | | | | | | | |
| | B4 | N>2 | | | | | | | | |
| A | B8 | N>2 | | | | | | | | |
| | 45 | N>2 | | | | | | | | |
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|---|---|---|---|
| Analytical Sensitivity (str/$cm^3$): | 0.0048 | Eucentricity check : | ✓ |
| Concentration (str/$cm^3$) : | <0.0048 | *Grid acceptance criteria check : | (A)..✓.. (B)..✓.. |
| Concentration (str/$mm^2$) : | <18.07 | **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:..... | 8 | 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 AHERA COUNTSHEET

| | |
|---|---|
| CLIENT : Warren Panzer Eng | DATE : 10/08/02 |
| PROJECT : NYC DEP / 17 John St | ANALYST : END |
| BATCH # : T02,010-043 | CLIENT ID # : 03 |
| SAMPLE ID # : T02,010-043-2895 | VOLUME (lt) : 1440 |
| G.O. AREA ($mm^2$) : 0.013838 | 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 | |

| GRID | GO ID | Str. # | Str. Classf. | L (µm) | W (µm) | Structure sketch | SAED | EDXA | PHOTO# | ID |
|---|---|---|---|---|---|---|---|---|---|---|
| A | D3 | N>0 | | | | | | | | |
| | G5 | 1 | M | 12.8 | 2.75 | | chr | Mg>Si | | chr |
| | | 2 | M | 8.0 | 7.0 | | chr | Mg>Si | 1130 | chr |
| | | | | | | | | | | |
| B | F2 | N>0 | | | | | | | | |
| | F9 | N>0 | | | | | | | | |

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|---|---|---|---|
| Analytical Sensitivity (str/$cm^3$): | 0.0048 | Eucentricity check : | J |
| Concentration (str/$cm^3$) : | 0.0097 | *Grid acceptance criteria check : (A)...✓ (B)...✓ | |
| Concentration (str/$mm^2$) : | 36.13 | **CHR. # STRUCT. : F 0 M 2 C 0 B 0 | |
| 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. | |

*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

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|---|---|
| CLIENT : Warren Planer Eng | DATE : 10/08/02 |
| PROJECT : NYC DEP / 17 John Str | ANALYST : END |
| BATCH # : T02,010-043 | CLIENT ID # : 04 |
| SAMPLE ID # : T02.010.043-2896 | VOLUME (lt) : 1440 |
| G.O. AREA ($mm^2$) : 0.013838 | 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 | |

| GRID | GO ID | Str. # | Str. Classf. | L (µm) | W (µm) | Structure sketch | SAED | EDXA | PHOTO# | ID |
|---|---|---|---|---|---|---|---|---|---|---|
| B | E9 | N>> | | | | | | | | |
| | A5 | N>> | | | | | | | | |
| A | D9 | N>> | | | | | | | | |
| | G5 | N>> | | | | | | | | |
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|---|---|---|---|
| Analytical Sensitivity (str/$cm^3$): | 0.0048 | Eucentricity check : | ✓ |
| Concentration (str/$cm^3$) : | <0.0048 | *Grid acceptance criteria check : | (A)..✓.. (B)..✓.. |
| Concentration (str/$mm^2$) : | <18.07 | **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. |

*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 AHERA COUNTSHEET

| | |
|---|---|
| **CLIENT :** Warren & Lancer Eng | **DATE :** 10/08/02 |
| **PROJECT :** NYC DEP / 17 John St | **ANALYST :** END |
| **BATCH # :** T02,010-043 | **CLIENT ID # :** 05 |
| **SAMPLE ID # :** T02-010-043-289 I | **VOLUME (lt) :** .1440 |
| **G.O. AREA ($mm^2$) :** a 013838 | **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 | |

| GRID | GO ID | Str. # | Str. Classf. | L (µm) | W (µm) | Structure sketch | SAED | EDXA | PHOTO# | ID |
|---|---|---|---|---|---|---|---|---|---|---|
| A | H2 | 1 | M | 7.5 | 3.15 | | chr | Mg Si Fe | | chr |
| | E9 | NSD | | | | | | | | |
| B | C3 | NSD | | | | | | | | |
| | G3 | 1 | M | 17.5 | 1.8 | | chr | Mg Si Fe | | chr |
| | | 2 | F | 6.8 | 0.1 | | chr | Ca | 1131 | chr |
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| Analytical Sensitivity (str/$cm^3$): 0.0040 | Eucentricity check : ✓ |
| Concentration (str/$cm^3$) : 0.0145 | *Grid acceptance criteria check : (A) ✓ (B) ✓ |
| Concentration (str/$mm^2$) : 54.20 | **CHR. # STRUCT. : F 01 M 02 C 0 B 0 |
| Number of Asbestos Structures : 0.5≤S<5µm ..0.. | **AMPH. # STRUCT.: F M C B |
| S≥5µm .....03.. | 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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