



**BULK ASBESTOS SURVEY REPORT  
BAY AGGREGATE SITE  
NORTH WATER STREET  
BAY CITY, MICHIGAN**

*for*

**CITY OF BAY CITY**

**AKT PEERLESS PROJECT NO. 3522F-4-190  
NOVEMBER 18, 2002**

## CONTENTS

<u>Section</u>	<u>Page</u>
<b>1.0 INTRODUCTION</b> .....	1
1.1 PURPOSE.....	2
1.2 LIMITATIONS AND EXCEPTIONS OF THE SURVEY .....	2
<b>2.0 AKT PEERLESS SURVEY</b> .....	2
2.1 SUSPECT MATERIALS .....	2
2.2 LABORATORY ANALYSES .....	4
2.3 FINDINGS AND LABORATORY RESULTS .....	4
<b>3.0 CONCLUSIONS AND RECOMMENDATIONS</b> .....	7
<b>4.0 LIMITATIONS</b> .....	9

## APPENDICES

APPENDIX A .... ASBESTOS LOCATION MAPS

APPENDIX B .... BULK ASBESTOS SAMPLE ANALYSIS SUMMARY REPORT

**BULK ASBESTOS SURVEY REPORT  
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BAY CITY, MICHIGAN**

**FOR**

**CITY OF BAY CITY**

**AKT PEERLESS PROJECT NO. 3522F-4-190**

**1.0 INTRODUCTION**

The City of Bay City retained AKT Peerless Environmental Services (AKT Peerless) to conduct a Bulk Asbestos Survey of the Bay Aggregate Site located at North Water Street in Bay City, Michigan. AKT Peerless' scope of work is based on its proposal PS-3998, dated October 2, 2002, and the terms and conditions of the agreement.

In general, the site is developed with five industrial buildings known as the Bay Aggregate Site. The site itself appears to have been developed shortly after the Civil War. Except for the portion of one building, which appear to have been constructed in the late 1800s, the other buildings currently located at the site appear to have were constructed in the early 1900s. The interiors of the buildings generally consist of open space with some office and storage areas. It is AKT Peerless' understanding that the buildings are to be demolished for future development of living, office and retail space.

For the purpose of this report, the five buildings at the site will be designated as follows:

- The Main Building will be referred to as Building A
- The Half Building will be referred to as Building B
- The Boom Building will be referred to as Building C
- The Storage Building will be referred to as Building D
- The Sand Building will be referred to as Building E

## **1.1 PURPOSE**

The purpose of AKT Peerless survey was to identify asbestos-containing building materials (ACBMs) present at the property prior to demolition activities. AKT Peerless asbestos survey is based on the Asbestos School Hazard Abatement Reauthorization Act (ASHERA). The purpose of ASHERA is to extend the Asbestos Hazard Emergency Response Act (AHERA) inspection and management requirements to commercial and industrial buildings.

The purpose of AKT Peerless asbestos survey is to (a) identify and locate suspect ACBM, (b) establish a sampling plan, based on homogeneous and functional areas, to sample and assess significant sources of friable and non-friable suspect ACBM, (c) quantify the amount of asbestos ACBM identified at the property, and (d) prepare a final report documenting ACBM and PACBM quantities, locations, and results.

## **1.2 LIMITATIONS AND EXCEPTIONS OF THE SURVEY**

All areas in the buildings were inspected. However, according to Stress Con personnel, and information obtained during other investigations conducted at the site by AKT Peerless, tunnels containing steam and hot water pipes exist at the site. The locations of these tunnels are not known and therefore were not inspected during the course of this survey.

Observation under floors or within walls was limited to exposed areas. Other physical limitations encountered during the survey included dim lighting conditions in some areas of the buildings.

## **2.0 AKT PEERLESS SURVEY**

On November 4, 2002, Messrs. Kenneth Majetic and Mark Collison with AKT Peerless conducted an asbestos survey of the five buildings. During the survey, AKT Peerless noted observable materials (e.g., materials that are readily accessible and visible without dismantling permanent structures, such as walls, floors, piping insulation, and plaster ceilings) that may contain asbestos.

## **2.1 SUSPECT MATERIALS**

Based on appearances and type of materials, suspect ACBMs were grouped into homogenous sampling areas and representative bulk samples were collected. For example, ceiling tile located in different functional spaces (i.e., office vs. hallway areas) or on different floors was found to be uniform in texture and color and appeared similar in every other respect. This material was considered one homogenous area and was sampled accordingly.

Based on the homogeneous and functional areas identified during the survey, AKT Peerless collected a total of 46 bulk samples for analysis. Samples were collected in polyethylene containers and labeled with an identification number. In general, AKT Peerless' sampling protocol consisted of (a) extracting samples with a clean knife or chisel and (b) placing the sample into its properly labeled container.

Homogeneous suspect ACBMs and areas identified are described in the following tables:

<b>Homogeneous Materials</b>	<b>Location Building A</b>
Tan, brown, light brown 12-inch by 12-inch vinyl floor tile	Office, restroom and break room areas
Green 9-inch by 9-inch vinyl floor tile	Mezzanine
2-foot by 4-foot suspended ceiling tile	Office and break room areas
Thermal system insulation (Aircell and Millboard pipewrap)	Office, manufacturing and storage areas
Window caulking	Majority of windows
Window caulking	Majority of windows
Asphalt and Transite roofing material	Roof

<b>Homogeneous Materials</b>	<b>Location Building B</b>
Window caulking	Majority of windows
Asphalt roofing material	Roof

<b>Homogeneous Materials</b>	<b>Location Building C</b>
Tan, brown 9-inch by 9-inch vinyl floor tile	Office area
Thermal system insulation (Aircell pipewrap)	Manufacturing and storage areas
Window caulking	Majority of windows
Asphalt and Transite roofing material	Roof

<b>Homogeneous Materials</b>	<b>Location Building D</b>
Thermal system insulation (Aircell pipewrap)	Office area
Wall plaster	Office area
Window caulking	Majority of windows
Tar paper	Stairwell and elevator enclosure
Fire doors	All floors
Asphalt roofing material	Roof

<b>Homogeneous Materials</b>	<b>Location Building E</b>
None identified	Not applicable

AKT Peerless attempted to collect at least three samples of the various homogeneous materials where possible and practical or as necessary. However, due to the limited quantity or accessibility of some materials, single or duplicate samples were collected.

## 2.2 LABORATORY ANALYSES

All samples collected were submitted to and analyzed by Environmental Hazard Services located in Richmond, Virginia. The samples were analyzed for asbestos content using a polarized light microscopy (PLM) technique and by following the USEPA Method 600/R-93/116. This method is used to identify asbestos fibers in samples potentially containing asbestos materials.

Percentages and types of fibrous components in these samples were determined by visual estimation of the amount of fibrous materials versus the total amount of material present. OSHA's definition of ACBM is any material containing more than one (1) percent asbestos. Materials containing less than one (1) percent asbestos are considered non-asbestos.

## 2.3 FINDINGS AND LABORATORY RESULTS

Suspect and confirmed ACBMs identified and any obvious environmental concerns associated with these sources, such as damage or friability, are included in the following tables.

<b>Building A</b>				
<b>Material and Location</b>	<b>Approximate Quantity</b>	<b>Physical Condition</b>	<b>Sample ID</b>	<b>Percent Asbestos Content (%)</b>
Tan 12-inch by 12-inch vinyl floor in northwest office	3,200 sq. ft.	Fair to Good Non-Friable	VFT-1A VFT-1B VFT-1C	2 % tile; 5 % mastic 2 % tile; 5 % mastic 2 % tile; 5 % mastic
Brown 9-inch by 9-inch vinyl floor in north central restroom	250 sq. ft.	Fair to Good Non-Friable	VFT-2A VFT-2B VFT-2C	3 % tile; NAD mastic 3 % tile; NAD mastic 3 % tile; NAD mastic
Light brown 12-inch by 12-inch vinyl floor in northwest office	650 sq. ft.	Fair to Good Non-Friable	VFT-3A VFT-3B VFT-3C	2 % tile; 2 % mastic 2 % tile; 2 % mastic 2 % tile; 2 % mastic
Green 9-inch by 9-inch vinyl floor in east mezzaanine	50 sq. ft.	Fair to Good Non-Friable	VFT-4	3 % tile; NAD mastic
Brown 12-inch by 12-inch vinyl floor tile in southeast breakroom	700 sq. ft.	Fair to Good Non-Friable	VFT-5A VFT-5B VFT-5C	<1 % tile; NAD mastic <1 % tile; NAD mastic <1 % tile; NAD mastic
2-foot by 4-foot suspended ceiling tile in northwest office	1,600 sq. ft.	Poor to Good Friable	SCT-1A SCT-1B SCT-1C	NAD NAD NAD
2-foot by 4-foot suspended ceiling tile in southeast breakroom	700 sq. ft.	Fair to Good Friable	SCT-2A SCT-2B SCT-2C	NAD NAD NAD
Thermal pipe wrap insulation in various areas of building	1,500 linear feet	Poor to Good Friable	PW-1 PW-2 PW-3	85 % 85 % 85 %
Asphalt roofing on various areas of building	Undertermined	Fair to Good Non-Friable	RF-1 RF-2	NAD 90 %
Caulking on majority of windows	Undertermined	Poor to Good Friable	WC-1 WC-2 WC-3	2 % 2 % 2 %

NAD = No Asbestos Detected

<b>Building B</b>				
<b>Material and Location</b>	<b>Approximate Quantity</b>	<b>Physical Condition</b>	<b>Sample ID</b>	<b>Percent Asbestos Content (%)</b>
Caulking on majority of windows	Undertermined	Poor to Good Friable	WC-4 WC-5 WC-6	2 % 2 % 2 %

NAD = No Asbestos Detected

<b>Building C</b>				
<b>Material and Location</b>	<b>Approximate Quantity</b>	<b>Physical Condition</b>	<b>Sample ID</b>	<b>Percent Asbestos Content (%)</b>
Brown 9-inch by 9-inch vinyl floor in northeast office	2,200 sq. ft.	Fair Non-Friable	VFT-6A VFT-6B VFT-6C VFT-6D	5 % tile; NAD mastic 5 % tile; NAD mastic 5 % tile; NAD mastic 5 % tile; 5 % mastic
Thermal pipe wrap insulation in various areas of building	300 linear feet	Poor to Good Friable	PW-4	85 %
Caulking on majority of windows	Undertermined	Poor to Good Friable	WC-7 WC-8 WC-9	2 % <1 % <1 %
Transite roofing and siding on southern portion of building	4,500 sq. ft.	Fair to Good Non-Friable	TRP-1	20 %

NAD = No Asbestos Detected

<b>Building D</b>				
<b>Material and Location</b>	<b>Approximate Quantity</b>	<b>Physical Condition</b>	<b>Sample ID</b>	<b>Percent Asbestos Content (%)</b>
Thermal pipe wrap insulation in southeast office	15 linear feet	Poor to Good Friable	PW-5	85 %
Wall plaster in southeast office	500 sq. ft.	Poor to Good Friable	WP-1	NAD
Asphalt covered felt over metal panels on stairwell and elevator enclosure	2,500 sq. ft.	Good Non-Friable	FC-1	85 %
Fire doors on all floors	8 doors	Good Non-Friable	FD-1	NAD
Caulking on majority of windows	Undertermined	Fair to Good Non-Friable	WC-10 WC-11	NAD 2 %

NAD = No Asbestos Detected

As noted in the previous tables, asbestos was detected in a variety of materials. The Bulk Asbestos Sample Analysis Summary Report is presented as Appendix B.

Other suspect ACMs observed at the site were limited to asphalt roofing materials (shingles, tar paper and tar roofs) on all buildings except Building E. In general, asphalt roofing materials observed at the site appeared to be fair to good condition and nonfriable.

In addition to the above materials, a limited quantity of fiberglass pipe wrap was observed in Building A. Fiberglass batting was also observed on the walls and ceiling in the southeast maintenance shop in Building C. This material was physically and visually inspected in several different locations to verify the presence of fiberglass. Because the fiberglass is not expected to contain asbestos, this material was not sampled.

### 3.0 CONCLUSIONS AND RECOMMENDATIONS

AKT Peerless was retained to conduct a Bulk Asbestos Survey of the Bay Aggregate Site located at North Water Street in Bay City, Michigan. The purpose of the survey was to identify and sample suspect asbestos-containing building materials (ACBMs) prior to demolitions.

Based on the homogeneous and functional areas identified during the survey, AKT Peerless collected a total of 46 bulk samples in the subject buildings for analysis. ACBMs and presumed ACBMs identified by AKT Peerless and ERT are summarized in the following tables:

<b>Materials – Building A</b>	<b>Approximate Quantity</b>
All 9-inch by 9-inch vinyl floor tiles	300 square feet
All 12-inch by 12-inch vinyl floor tile except for tile in the breakroom	3,850 square feet
Thermal pipe insulation and fittings	1,500 linear feet
Transite panels on roof (presumed asbestos containing)	2,500 square feet
Asphalt roofing material (white tar paper)	Undetermined
Window caulking	Undetermined

<b>Materials – Building B</b>	<b>Approximate Quantity</b>
Window caulking	Undetermined
Asphalt roofing material (presumed asbestos containing)	20,000 sq. ft.

<b>Materials – Building C</b>	<b>Approximate Quantity</b>
All 9-inch by 9-inch vinyl floor tiles	2,200 square feet
Thermal pipe insulation and fittings	300 linear feet
Transite roofing and siding panels	5,000 sq. ft.
Window caulking	Undetermined
Asphalt roofing material (presumed asbestos containing)	Undetermined

<b>Materials – Building D</b>	<b>Approximate Quantity</b>
Thermal pipe insulation	15 linear feet
Asphalt covered felt over metal panels	2,500 sq. ft.
Window caulking	Undetermined
Asphalt roofing material (presumed asbestos containing)	6,600 sq. ft.

Based on the findings of the survey, AKT Peerless recommends that all asbestos-containing thermal pipe insulation, vinyl flooring, Transite and window caulking materials be properly

removed prior to conducting demolition activities that may affect and cause these materials to become friable.

All thermal pipe insulation and vinyl flooring materials should be abated by a certified asbestos abatement contractor. Transite panels can be removed by a demolition contractor provided that they have the proper awareness training and that the material is removed intact.

Because the concentration of asbestos in the caulking samples was close to the regulatory limit of 1 %, another option associated with the window caulking is to collect additional samples from each building and submit these samples to a laboratory for point counting to determine a more accurate percentage of asbestos in the samples. If the results of this sampling show that the concentration of asbestos is less than 1 %, this material would be considered a nonregulated ACBM. Therefore, abatement of this material would not be necessary prior to demolition.

NESHAPs does not apply to the removal of roofing material providing that the material is nonfriable, in good condition and that the roofing material is not removed in a manner such as cutting, sanding, grinding, or abrading that would cause the material to be crumbled, pulverized or reduced to powder during the removal process. As USEPA interprets the NESHAP, the use of certain manual methods (such as axes, hatchets, knives, spud bars, pry bars and shovels, but not saws) or methods that slice, shear, or punch (such as a power slicer or power plow) does not constitute cutting, sanding, grinding, or abrading.

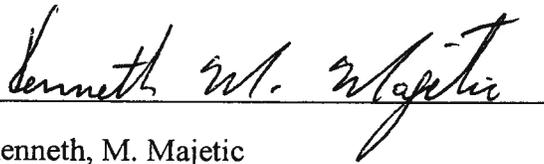
It should also be noted that due to the inability to inspect within walls and ceilings, additional thermal system insulation may also be present and that the actual quantities may vary. Further, as discussed earlier, underground tunnels containing steam and hot water pipes exist at the site. The locations of these tunnels are not known and therefore were not inspected during the course of this survey. If these tunnels are encountered during future demolition and redevelopment activities, any potential asbestos-containing thermal insulation associated with the pipe runs in these tunnels should be further evaluated at that time.

#### 4.0 LIMITATIONS

The information and opinions obtained in this report are for the exclusive use of the City of Bay City. No distribution to or reliance by other parties may occur without the express written permission of AKT Peerless. AKT Peerless will not distribute this report without your written consent or as required by law or by a Court order. The information and opinions contained in the report are given in light of that assignment. The report must be reviewed and relied upon only in conjunction with the terms and conditions expressly agreed upon by the parties and as limited therein. Any third parties who have been extended the right to rely on the contents of this report by AKT Peerless (which is expressly required prior to any third-party release), expressly agrees to be bound by the original terms and conditions entered into by AKT Peerless and the City of Bay City.

Subject to the above and the terms and conditions, AKT Peerless accepts responsibility for the competent performance of its duties in executing the assignment and preparing reports in accordance with the normal standards of the profession, but disclaims any responsibility for consequential damages. Although AKT Peerless believes that results contained herein are reliable, AKT Peerless cannot warrant or guarantee that the information provided is exhaustive or that the information provided by the City of Bay City or third parties is complete or accurate.

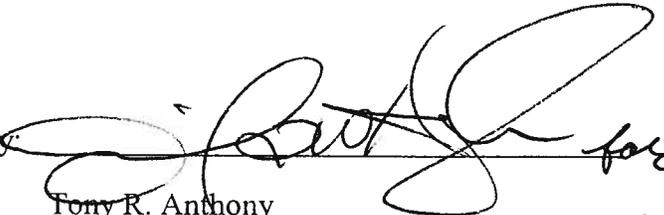
Report prepared by:



Kenneth, M. Majetic  
Senior Environmental Consultant  
Environmental Compliance and Assessment Services  
AKT PEERLESS ENVIRONMENTAL SERVICES

Michigan Asbestos Accreditation No. A14373

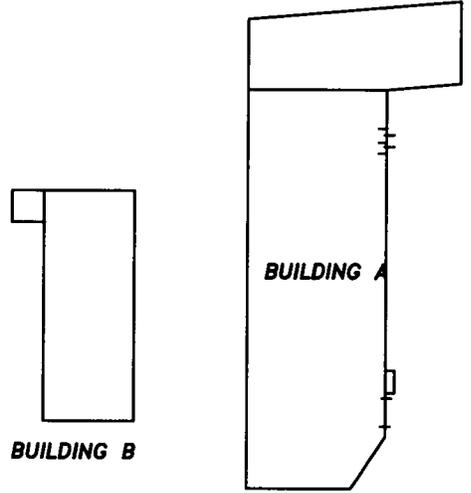
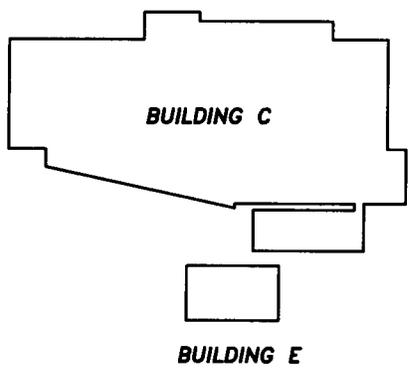
Report approved by:



Tony R. Anthony  
Director  
Environmental Engineering Services  
AKT PEERLESS ENVIRONMENTAL SERVICES

NOVEMBER 18, 2002

**Appendix A**  
**Asbestos Location Maps**



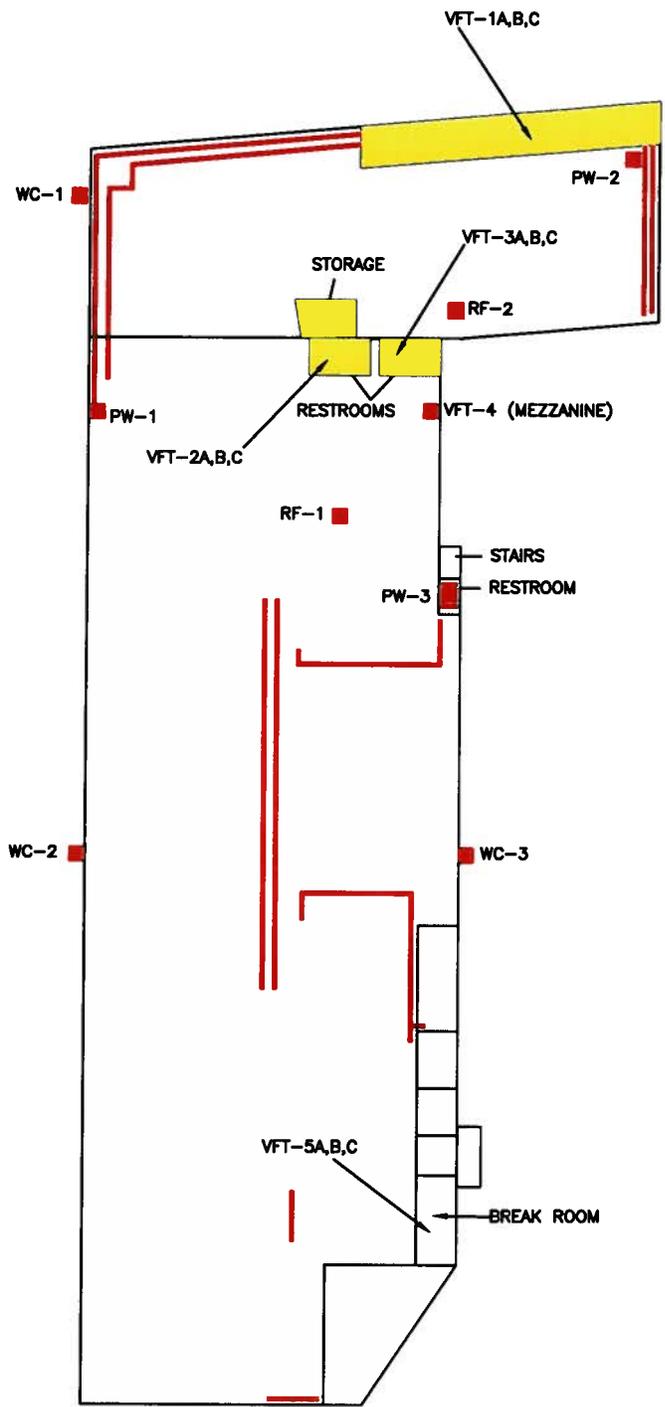
**AKTPEERLESS**  
environmental services  
22725 Orchard Lake Road, Farmington, MI 48336  
Phone: (248) 615-1333 Fax: (248) 615-1334

**BUILDING REFERENCE MAP**  
**BAY AGGREGATE SITE**  
**BAY CITY, MICHIGAN**  
**PROJECT NUMBER : 3522F-4-190**  
**DRAWING NUMBER : PM 1**

**DRAWN BY: RT**  
**DATE: 11-19-02**

**NOT TO SCALE**

**FIGURE 1**



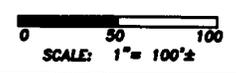
**LEGEND**

- VFT = VINYL FLOOR TILE
- PW = PIPE WRAP
- RF = ROOF FELT
- WC = WINDOW CAULK
- = SAMPLE LOCATION
- (red line) = PIPE WRAP
- (yellow) = VINYL FLOOR TILE

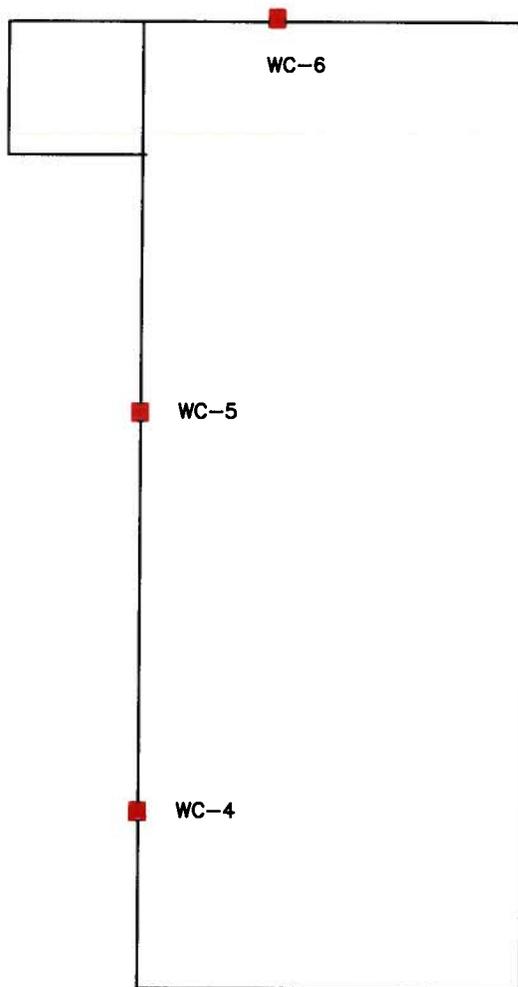
**AKTPEERLESS**  
 environmental services  
 22725 Orchard Lake Road, Farmington, MI 48336  
 Phone: (248) 615-1333 Fax: (248) 615-1334

**ACBM LOCATION MAP**  
 BAY AGGREGATE SITE  
 BUILDING A  
 BAY CITY, MICHIGAN  
 PROJECT NUMBER : 3522F-4-190  
 DRAWING NUMBER : PM 1

DRAWN BY: RT  
 DATE: 11-15-02



**FIGURE 2**



**LEGEND**

■ = SAMPLE LOCATION  
WC = WINDOW CAULK

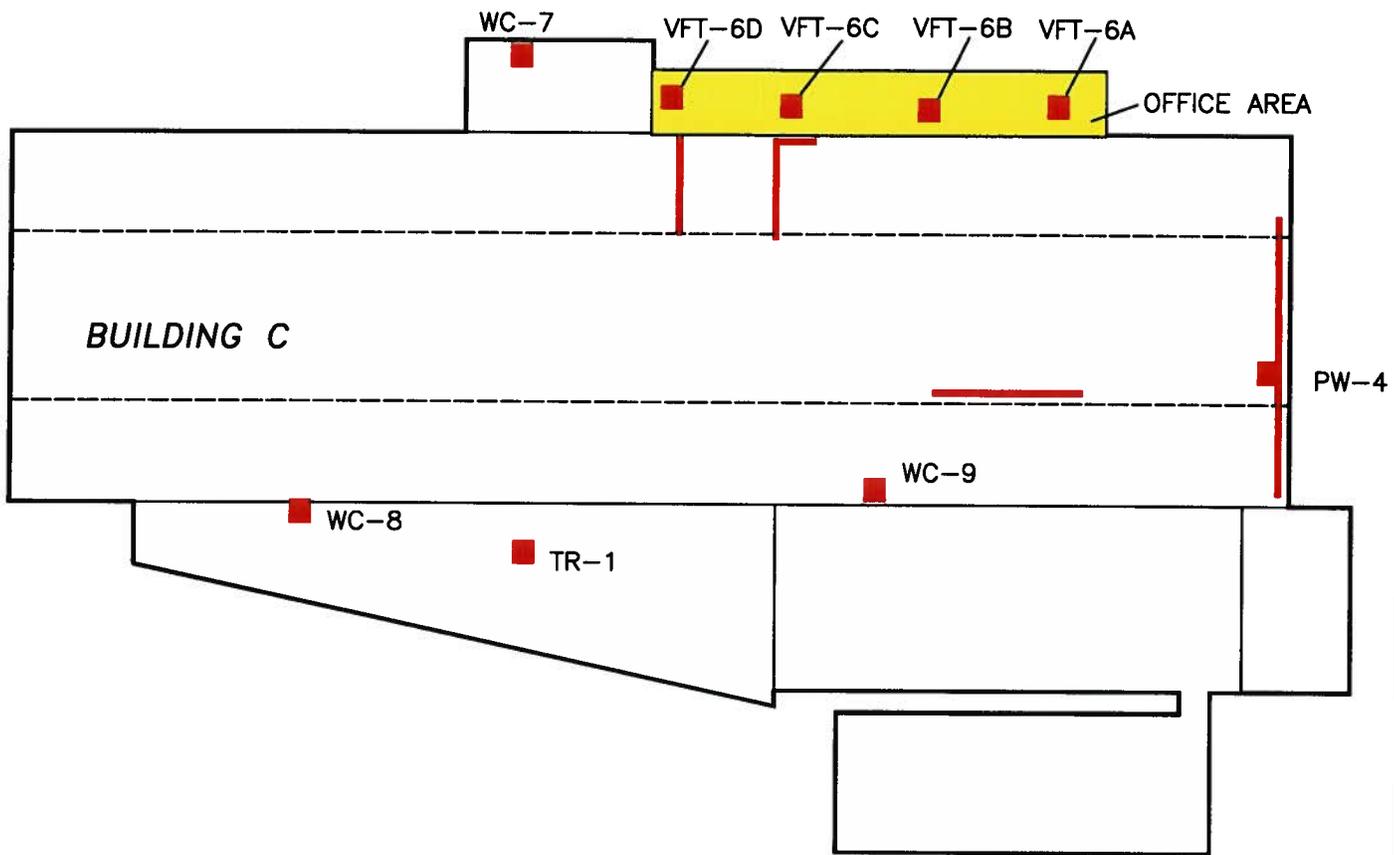
**AKTPEERLESS**  
environmental services  
22725 Orchard Lake Road, Farmington, MI 48336  
Phone: (248)615-1333 Fax: (248)615-1334

**ACBM LOCATION MAP**  
BAY AGGREGATE SITE  
BUILDING B  
BAY CITY, MICHIGAN  
PROJECT NUMBER : 3522F-4-190  
DRAWING NUMBER : PM 1

DRAWN BY: RT  
DATE: 11-14-02

0 25 50  
SCALE: 1" = 50'±

**FIGURE 3**



**LEGEND**

- = SAMPLE LOCATION
- PW = PIPE WRAP
- TR = TRANSITE
- WC = WINDOW CAULK
- VFT = VINYL FLOOR TILE
- = ASBESTOS PIPE WRAP

**BUILDING E**

**NO SUSPECT ACBMS IDENTIFIED**

**AKTPEERLESS**  
environmental services

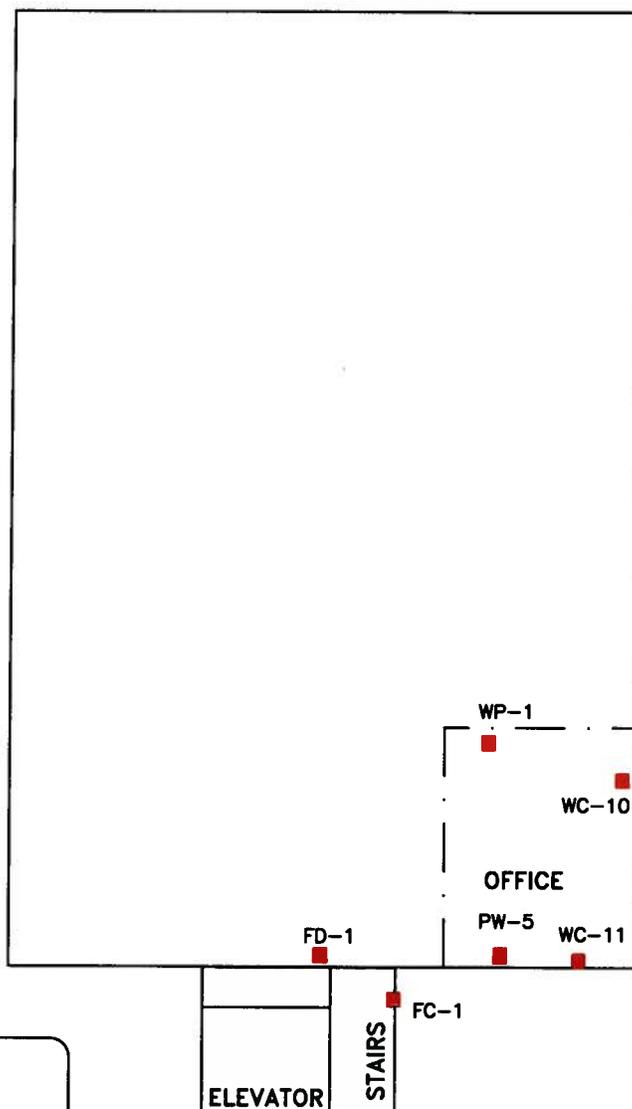
22725 Orchard Lake Road, Farmington, MI 48336  
Phone: (248) 615-1333 Fax: (248) 615-1334

**ACBM LOCATION MAP**  
**BAY AGGREGATE SITE**  
BUILDINGS C AND E  
BAY CITY, MICHIGAN  
PROJECT NUMBER : 3522F-4-190  
DRAWING NUMBER : PM 1

DRAWN BY: RT  
DATE: 11-14-02

0 30 60  
SCALE: 1" = 60'±

**FIGURE 4**



**LEGEND**

- = SAMPLE LOCATION
- PW = PIPE WRAP
- FC = FELT COVERING
- FD = FIRE DOOR
- WP = WALL PLASTER

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**ACBM LOCATION MAP**  
BAY AGGREGATE SITE  
BUILDING D  
BAY CITY, MICHIGAN  
PROJECT NUMBER : 3522F-4-190  
DRAWING NUMBER : PM 1

DRAWN BY: RT  
DATE: 11-14-02

0 10 20  
SCALE: 1" = 20'±

**FIGURE 5**

**Appendix B**  
**Bulk Asbestos Sample Analysis Summary Report**

# **ENVIRONMENTAL HAZARDS SERVICES, L.L.C.**

7469 WHITE PINE ROAD - RICHMOND, VA 23237

804-275-4788 FAX 804-275-4907

## **BULK ASBESTOS SAMPLE ANALYSIS SUMMARY**

**CLIENT:** AKT Peerless Environmental Services  
22725 Orchard Lake Road  
Farmington, MI 48336

**DATE OF RECEIPT:** 04 NOV 2002  
**DATE OF ANALYSIS:** 05 NOV 2002  
**DATE OF REPORT:** 05 NOV 2002

**CLIENT NUMBER:** 23-1129 A  
**EHS PROJECT #:** 11-02-0224  
**PROJECT:** 3522F-4-190

<b>EHS SAMPLE #</b>	<b>CLIENT SAMPLE #/ LABORATORY GROSS DESCRIPTION</b>	<b>% ASBESTOS</b>	<b>OTHER MATERIALS</b>
01A	VFT-1A (a)-Tile/ Gray Vinyl	2% Chrysotile 2% Total Asbestos	98% Non-Fibrous
01B	VFT-1A (b)-Mastic/ Black Adhes.	5% Chrysotile 5% Total Asbestos	95% Non-Fibrous
02A	VFT-1B (a)-Tile/ Gray Vinyl	2% Chrysotile 2% Total Asbestos	98% Non-Fibrous
02B	VFT-1B (b)-Mastic/ Black Adhes.	5% Chrysotile 5% Total Asbestos	95% Non-Fibrous
03A	VFT-1C (a)-Tile/ Gray Vinyl	2% Chrysotile 2% Total Asbestos	98% Non-Fibrous
03B	VFT-1C (b)-Mastic/ Black Adhes.	5% Chrysotile 5% Total Asbestos	95% Non-Fibrous
04A	VFT-2A (a)-Tile/ Brown Vinyl	3% Chrysotile 3% Total Asbestos	97% Non-Fibrous
04B	VFT-2A (b)-Mastic/ Black Adhes.	NAD	100% Non-Fibrous
05A	VFT-2B (a)-Tile/ Brown Vinyl	3% Chrysotile 3% Total Asbestos	97% Non-Fibrous
05B	VFT-2B (b)-Mastic/ Black Adhes.	NAD	100% Non-Fibrous
06A	VFT-2C (a)-Tile/ Brown Vinyl	3% Chrysotile 3% Total Asbestos	97% Non-Fibrous
06B	VFT-2C (b)-Mastic/ Black Adhes.	NAD	100% Non-Fibrous

# ENVIRONMENTAL HAZARDS SERVICES, L.L.C.

CLIENT NUMBER: 23-1129 A  
EHS PROJECT #: 11-02-0224  
PROJECT: 3522F-4-190

EHS SAMPLE #	CLIENT SAMPLE #/ LABORATORY GROSS DESCRIPTION	% ASBESTOS	OTHER MATERIALS
07A	VFT-3A (a)-Tile/ Brown Vinyl	2% Chrysotile 2% Total Asbestos	98% Non-Fibrous
07B	VFT-3A (b)-Mastic/ Black Adhes.	2% Chrysotile 2% Total Asbestos	98% Non-Fibrous
08A	VFT-3B (a)-Tile/ Brown Vinyl	2% Chrysotile 2% Total Asbestos	98% Non-Fibrous
08B	VFT-3B (b)-Mastic/ Black Adhes.	2% Chrysotile 2% Total Asbestos	98% Non-Fibrous
09A	VFT-3C (a)-Tile/ Brown Vinyl	2% Chrysotile 2% Total Asbestos	98% Non-Fibrous
09B	VFT-3C (b)-Mastic/ Black Adhes.	2% Chrysotile 2% Total Asbestos	98% Non-Fibrous
10A	VFT-4 (a)-Tile/ Green Vinyl	3% Chrysotile 3% Total Asbestos	97% Non-Fibrous
10B	VFT-4 (b)-Mastic/ Black Adhes.	NAD	100% Non-Fibrous
11A	VFT-5A (a)-Tile/ Brown Vinyl	Trace, <1% Chrysotile <1% Total Asbestos	100% Non-Fibrous
11B	VFT-5A (b)-Mastic/ Yellow Adhes.	NAD	100% Non-Fibrous
12A	VFT-5B (a)-Tile/ Brown Vinyl	Trace, <1% Chrysotile <1% Total Asbestos	100% Non-Fibrous
12B	VFT-5B (b)-Mastic/ Yellow Adhes.	NAD	100% Non-Fibrous
13A	VFT-5C (a)-Tile/ Brown Vinyl	Trace, <1% Chrysotile <1% Total Asbestos	100% Non-Fibrous
13B	VFT-5C (b)-Mastic/ Yellow Adhes.	NAD	100% Non-Fibrous
14A	VFT-6A (a)-Tile/ Brown Vinyl	5% Chrysotile 5% Total Asbestos	95% Non-Fibrous
14B	VFT-6A (b)-Mastic/ Black Adhes.	NAD	100% Non-Fibrous

# ENVIRONMENTAL HAZARDS SERVICES, L.L.C.

CLIENT NUMBER: 23-1129 A  
EHS PROJECT #: 11-02-0224  
PROJECT: 3522F-4-190

EHS SAMPLE #	CLIENT SAMPLE #/ LABORATORY GROSS DESCRIPTION	% ASBESTOS	OTHER MATERIALS
15A	VFT-6B (a)-Tile/ Brown Vinyl	5% Chrysotile 5% Total Asbestos	95% Non-Fibrous
15B	VFT-6B (b)-Mastic/ Black Adhes.	NAD	100% Non-Fibrous
16A	VFT-6C (a)-Tile/ Brown Vinyl	5% Chrysotile 5% Total Asbestos	95% Non-Fibrous
16B	VFT-6C (b)-Mastic/ Black Adhes.	NAD	100% Non-Fibrous
17A	VFT-6D (a)-Tile/ Brown Vinyl	5% Chrysotile 5% Total Asbestos	95% Non-Fibrous
17B	VFT-6D (b)-Mastic/ Black Adhes.	5% Chrysotile 5% Total Asbestos	95% Non-Fibrous
18	WC-1/ Gray Powder	2% Chrysotile 2% Total Asbestos	98% Non-Fibrous
19	WC-2/ Gray Powder	2% Chrysotile 2% Total Asbestos	98% Non-Fibrous
20	WC-3/ Gray Powder	2% Chrysotile 2% Total Asbestos	98% Non-Fibrous
21	WC-4/ Gray Powder	2% Chrysotile 2% Total Asbestos	98% Non-Fibrous
22	WC-5/ Gray Powder	2% Chrysotile 2% Total Asbestos	98% Non-Fibrous
23	WC-6/ Gray Powder	2% Chrysotile 2% Total Asbestos	98% Non-Fibrous
24	WC-7/ Gray Powder	2% Chrysotile 2% Total Asbestos	98% Non-Fibrous
25	WC-8/ Gray Powder	Trace, <1% Chrysotile <1% Total Asbestos	100% Non-Fibrous
26	WC-9/ Gray Powder	Trace, <1% Chrysotile <1% Total Asbestos	100% Non-Fibrous
27	WC-10/ Red Powder	NAD	100% Non-Fibrous

# ENVIRONMENTAL HAZARDS SERVICES, L.L.C.

CLIENT NUMBER: 23-1129 A  
EHS PROJECT #: 11-02-0224  
PROJECT: 3522F-4-190

EHS SAMPLE #	CLIENT SAMPLE #/ LABORATORY GROSS DESCRIPTION	% ASBESTOS	OTHER MATERIALS
28	WC-11/ Gray Powder	2% Chrysotile 2% Total Asbestos	98% Non-Fibrous
29	RF-1/ Black Fib.	NAD	95% Cellulose 5% Non-Fibrous
30	RF-2/ Brown/Silver Fib.	90% Chrysotile 90% Total Asbestos	5% Cellulose 5% Non-Fibrous
31	SCT-1A/ Gray Fib.	NAD	40% Cellulose 40% Fibrous Glass 20% Non-Fibrous
32	SCT-1B/ Gray Fib.	NAD	40% Cellulose 40% Fibrous Glass 20% Non-Fibrous
33	SCT-1C/ Gray Fib.	NAD	40% Cellulose 40% Fibrous Glass 20% Non-Fibrous
34	SCT-2A/ Gray Fib.	NAD	40% Cellulose 40% Fibrous Glass 20% Non-Fibrous
35	SCT-2B/ Gray Fib.	NAD	40% Cellulose 40% Fibrous Glass 20% Non-Fibrous
36	SCT-2C/ Gray Fib.	NAD	40% Cellulose 40% Fibrous Glass 20% Non-Fibrous
37	WP-1/ White Powder	NAD	100% Non-Fibrous
38	WP-2/ Gray Gran.	NAD	100% Non-Fibrous
39	FC-1/ Brown Fib.	85% Chrysotile 85% Total Asbestos	10% Cellulose 5% Non-Fibrous
40	FD-1/ Gray Powder	NAD	2% Cellulose 98% Non-Fibrous
41	PW-1/ Gray Fib.	85% Chrysotile 85% Total Asbestos	10% Cellulose 5% Non-Fibrous

# ENVIRONMENTAL HAZARDS SERVICES, L.L.C.

CLIENT NUMBER: 23-1129 A  
EHS PROJECT #: 11-02-0224  
PROJECT: 3522F-4-190

EHS SAMPLE #	CLIENT SAMPLE #/ LABORATORY GROSS DESCRIPTION	% ASBESTOS	OTHER MATERIALS
42	PW-2/ Gray Fib.	85% Chrysotile 85% Total Asbestos	10% Cellulose 5% Non-Fibrous
43	PW-3/ Gray Fib.	85% Chrysotile 85% Total Asbestos	10% Cellulose 5% Non-Fibrous
44	PW-4/ Gray Fib.	85% Chrysotile 85% Total Asbestos	10% Cellulose 5% Non-Fibrous
45	PW-5/ Gray Fib.	85% Chrysotile 85% Total Asbestos	10% Cellulose 5% Non-Fibrous
46	TRP-1/ Gray Cementitious	20% Chrysotile 20% Total Asbestos	80% Non-Fibrous

QC SAMPLE: M2-1994-2  
QC BLANK: SRM 1866 Fiberglass  
REPORTING LIMIT: 1% Asbestos  
METHOD: Polarized Light Microscopy, EPA Method 600/R-93/116 \*  
ANALYST: Feng Jiang, M.S.

Reviewed By Authorized Signatory:



Howard Varner, Laboratory Director  
Irma Faszewski, Quality Assurance Coordinator  
David Xu, MS, Senior Chemist  
Feng Jiang, MS, Senior Geologist  
Michael A. Mueller, Quality Assurance Manager

# ENVIRONMENTAL HAZARDS SERVICES, L.L.C.

CLIENT NUMBER: 23-1129 A  
EHS PROJECT #: 11-02-0224  
PROJECT: 3522F-4-190

Results represent the analysis of samples submitted by the client. Sample location, description, area, volume, etc., was provided by the client. This report cannot be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without the written consent of Environmental Hazards Services, L.L.C. California Certification #2319 NY ELAP #11714. All information concerning sampling location, date, and time can be found on Chain-of-Custody. Environmental Hazards Services, L.L.C. does not perform any sample collection.

Environmental Hazards Services, L.L.C. recommends reanalysis by point count (for more accurate quantification) or Transmission Electron Microscopy (TEM), for enhanced detection capabilities) for materials regulated by the EPA NESHAP (National Emission Standards for Hazardous Air Pollutants) and found to contain less than ten percent (<10%) asbestos by polarized light microscopy (PLM). Both services are available for an additional fee.

\* All California samples analyzed by Polarized Light Microscopy, EPA Method 600/M4-82-020, Dec. 1982.

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**LEGEND**      NAD = no asbestos detected  
                  SCF = suspected ceramic fibers

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plm1.dot/07JAN2002/ pd

-- PAGE 06 of 06 -- END OF REPORT --



ENVIRONMENTAL HAZARDS SERVICES, L.L.C.  
 7469 Whitepine Road Richmond, Virginia 23237 Phone (804) 275-4788 Fax (804) 275-4907

**CHAIN OF CUSTODY FORM**

Company Name: AKT Peerless Environmental Services Date: 11-1-02  
 Address: 22725 Orchard Lake Road Contact Name: Kenneth Majetic  
 City, State, Zip: Farmington, MI. 48336 Sampler Name: Kenneth Majetic  
 EHS Client Account #: 23-1129 A Project #: 3522F-4-190  
 Phone #: (248) 615-1333 Fax #: (248) 615-1334  
 P.O. #: \_\_\_\_\_ \* Note \* Invoices to Saginaw

Sample Number	Sample Date & Time	Asbestos						Lead				Other Metals (Specify metals below)				Indoor Air Quality				Particulate: Total Nuisance (NIOSH 0500)		Comments		
		Bulk ID by PLM	(PCM) Fiber Count	PLM Gravimetric	TEM AHERA (Air)	TEM Chatfield (Bulk)	Air	Paint (%)	Paint (PPM)	Paint (mg/cm <sup>2</sup> )	Soil	Wipe* (See Note)	TCLP (Pb)	Waste Water	TCLP RCRA 8	Welding Fume	Toxic Metal Profile	Biocassette	Slide	Surface Swab	Surface Tape		Bulk	Air Volume (L) OR Wipe Area (ft <sup>2</sup> ) OR Scrape Area (cm <sup>2</sup> )
VFT-5A	10-28-02	X																						
-5B		X																						
-5C		X																						
VFT-6A		X																						
-6B		X																						
-6C		X																						
-6D		X																						
WC-1		X																						
WC-2		X																						
WC-3		X																						

\* Do wipe samples submitted meet ASTM E1792 requirements? Yes  No

Released by: Ken MAJETIC Signature: Ken Majetic Date/Time: 10-31-02  
 Received by: \_\_\_\_\_ Signature: \_\_\_\_\_ Date/Time: 11-4-02  
 Released by: \_\_\_\_\_ Signature: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
 Received by: \_\_\_\_\_ Signature: \_\_\_\_\_ Date/Time: \_\_\_\_\_

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Sample Number	Sample Date & Time	Asbestos						Lead				Other Metals (Specify metals below)			Indoor Air Quality				Particulate: Total Nuisance (NIOSH 0500)		Comments				
		Bulk ID by PLM	(PCM) Fiber Count	PLM Point Count	PLM Gravimetric	TEM AHERA (Air)	TEM Chatfield (Bulk)	Air	Paint (%)	Paint (PPM)	Paint (mg/cm <sup>2</sup> )	Soil	Wine * (See Note)	TCLP (Pb)	Waste Water	TCLP RCRA 8	Welding Fume	Toxic Metal Profile	Biocassette	Slide		Surface Swab	Surface Tape	Bulk	Air Volume (L) OR Wipe Area (ft <sup>2</sup> ) OR Scrape Area (cm <sup>2</sup> )
WC-4	10-28-02	X																							
WC-5	}	X																							
WC-6		X																							
WC-7	}	X																							
WC-8		X																							
WC-9	}	X																							
WC-10		X																							
WC-11	}	X																							
RF-1		X																							
RF-2	✓	X																							

\* Do wipe samples submitted meet ASTM E1792 requirements? Yes  No

Released by: Ken MAJETIC Signature: Ken Majetic Date/Time: 10-31-02  
 Received by: \_\_\_\_\_ Signature: Andrew Date/Time: 11-4-02  
 Released by: \_\_\_\_\_ Signature: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
 Received by: \_\_\_\_\_ Signature: \_\_\_\_\_ Date/Time: \_\_\_\_\_

ENVIRONMENTAL HAZARDS SERVICES, L.L.C.  
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**CHAIN OF CUSTODY FORM**

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Sample Number	Sample Date & Time	Asbestos						Lead				Other Metals (Specify metals below)			Indoor Air Quality				Particulate: Total Nuisance (NIOSH 0500)		Comments				
		Bulk ID by PLM	(PCM) Fiber Count	PLM Point Count	PLM Gravimetric	TEM AHERA (Air)	TEM Chatfield (Bulk)	Air	Paint (%)	Paint (PPM)	Paint (mg/cm <sup>2</sup> )	Soil	Wine * (See Note)	TCLP (Pb)	Waste Water	TCLP RCRA 8	Welding Fume	Toxic Metal Profile	Biocassette	Slide		Surface Swab	Surface Tape	Bulk	Air Volume (L) OR Wipe Area (ft <sup>2</sup> ) OR Scrape Area (cm <sup>2</sup> )
SCT-1A	10-28-02	X																							
-1B		X																							
-1C		X																							
SCT-2A		X																							
-2B		X																							
-2C		X																							
WP-1		X																							
WP-2		X																							
FC-1		X																							
FD-1		X																							

\* Do wipe samples submitted meet ASTM E1792 requirements? Yes  No

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5 of 5

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Sample Number	Sample Date & Time	Asbestos					Lead				Other Metals (Specify metals below)			Indoor Air Quality				Particulate: Total Nuisance (NIOSH 0500)		Comments						
		Bulk ID by PLM	(PCM) Fiber Count	PLM Point Count	PLM Gravimetric	TEM AHERA (Air)	TEM Chatfield (Bulk)	Air	Paint (%)	Paint (PPM)	Paint (mg/cm <sup>2</sup> )	Soil	Wipe * (See Note)	TCLP (Pb)	Waste Water	TCLP RCRA 8	Welding Fume	Toxic Metal Profile	Biocassette		Slide	Surface Swab	Surface Tape	Bulk	Air Volume (L) OR Wipe Area (ft <sup>2</sup> ) OR Scrape Area (cm <sup>2</sup> )	Respirable (NIOSH 0600)
PW-1	10-28-02	X																								
PW-2	}	X																								
PW-3		X																								
PW-4		X																								
PW-5		X																								
TRP-1		X																								
		X																								

\* Do wipe samples submitted meet ASTM E1792 requirements? Yes  No

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